

**JANUARY  
2024**

**KSG**

An Institute For **IAS** Exam...



**WITH LOADED FEATURES**

- **PHILOSOPHY OF THE MONTH** • **PRE-SHOTS** • **MAP CONNECT**
- **THEMATIC ESSAYS** • **CONTEMPORARY ETHICS CASE STUDIES**

**“GET YOUR MAINS ANSWER EVALUATED THROUGH THIS COPY”**

## MESSAGE FROM DR. KHAN ....

*Dear Students,*

*With the day of **prelims approaching** and the **pressure creeping up on you** this month, let us talk about a very old technique you have been using to ace your exams, from your board examinations to your college examinations. **REVISION**.*

*Let's break down the entire thing. The word revision literally means to 'see again', i.e. **RE-VISION**. We see the thing we have read, visit it, and try revisiting it. So, ultimately, what we do is **RE-VISITATION**. Revisitation means you go to the same thing all over again and see the whole thing as you would have seen it the first, second and third time. An act of revision is to revise and make it better and more valuable. **But by re-visitation, I wonder if you are making it more valuable; maybe you need to improvise it.***

*So, now let us use a word called **REVERSE REVISION**. It is a tool to make whatever you have read more useful for examination purposes. Practice pulling out answers from your mind instead of pulling them out of your textbooks or notes. It's not Re-Vision or Re-visitation. **It's like bringing out your car from the parking space where it was safely "parked" because now is the time to go.***

*There are **three tools** to follow the route of **REVERSE REVISION**.*

*The **first approach** is **MENTAL**. Just think about what you have read. Keep the thing slightly far off from you where you can't see it. Recall the information and see if your mind can reproduce those facts. **If it is not producing well, it has probably never been stored in a valid format.***

*The **second approach** to this would be **VOCAL**. It is another way where you can teach somebody something you have read. You can also **prepare** and explain yourself and then speak up about it.*

*The **third approach** is **TEXTUAL**. When you write down the main highlights of what you are trying to revise, your notes become more **organized**, which in turn helps the mental and vocal way of revision to work more effectively.*

*At last, don't devote more time to revision alone. Revising works best when you **practice** what you'll be doing in the exam, -i.e. answering questions and lots of questions. **All the best!***

*My best wishes are always with you!*

*Stay Blessed!*

## GS CONNECT

It gives us immense pleasure to present an innovative approach to mastering current affairs. Current is a passing wind and diverse issues happen at the same time. It is to an extent chaotic. Newspapers, magazines, and various other sources report the chaos per se. With our experience of current affairs, we have tried to give "the current" a medium to travel. It is the syllabus of the UPSC with its components that are the medium through which the "Current is Passed" to the readers. **Ever since the new syllabus of the UPSC came into existence, the current has been gaining significance both at prelims as well as mains examination.** This book is meant to cover current affairs and related questions arising from those events. We have not only covered the current events for their factual contents but also presented them in such a way that any question asked from that topic gets covered. Moreover, topics are also "peppered" with the relevant facts/key concepts that are related to the theme. We have also given **questions for practice both, subjective and objective**, so that candidates are oriented to the examination mode. It is a collection covering myriad sources yet in a manageable size. To use this book, we recommend you to, master the components of the General Studies (GS) syllabus as broken into rows and columns (provided on the subsequent page). Each cell comprising the portion of GS becomes the connection for the current and every news subsequently covered guides the reader to the address of the syllabus. It is logical to expect that the same issue may be connected to more than one topic of the syllabus. Further, the news also has some additional vistas opened for the readers by adding a box with the title "**PEPPER IT WITH**" where we expect the students to build further around the theme. We are also trying to reach the remotest part of the country with our spirit and zeal of "Mains Answer Writing", which has been admired by students, CSE rank holders, and other scholars. Continuing in line with the effort, we have started **programs like Destinaire, Navigator, NEEV, AWSDP plus, KOL, DL& MP, Advance Foundation Course, Weekend Courses as well as Optional Courses (PSIR and Sociology)**. When it comes to evaluation, we are all together at a different level. We are also reaching every nook and corner with this expertise for the aspirants of CSE. Now you can write a Mains Answer and get it evaluated by our Expert Team and can get Feedback. **Drop a mail at [evaluation@ksgindia.com](mailto:evaluation@ksgindia.com)** to register yourself in our race to perfection. Don't wait, it's your golden chance to crack this exam and fulfill your passionate dream.

Team KSG

S. No.	GS - I	GS- II	GS- III	GS-IV	Mis
1	Indian Culture-Art Forms, Literature and Architecture from ancient to modern times.	Indian constitution- Amendments, acts and bills.	Various measures to boost Indian economy- planning, policies, management	Ethical issues related to family society, education, Corruption etc.	
2	Indian History significant events, personalities, issues and the Freedom Struggle.	Legislative, executive and judicial processes.	Government budgeting and issues related to budget.	Ethics in public and private administration	
3	Post independence issues, National boundary and disputes.	Constitutional, non-constitutional, judicial, quasi-judicial, administrative and other types of bodies.	Agriculture, animal husbandry and transport	Issues	
4	Indian society features, issues, globalization and diversity	Federal structure and local bodies. Their powers and functions.	Food security- measures to boost food security and food processing. Issues related to land- land reforms	Related laws and rules	
5	Women - issues and developments	Government policies and various governance issues like transparency, accountability and – governance	Industries and infrastructure- their growth and investment model	Governance/e- Governance	
6	Urbanization – problems and remedies	Committees and schemes.	Space and technology, IT space, robotics and computer	Ethics in international issues	
7	Distribution of industries and resources – India and world	Non-government issues, self-help groups and role of civil society	Disease, biotechnology and human welfare	Personalities and their teachings	
8	Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc	Vulnerable sections of our society and social sector issues like Poverty, Hunger, Education, and their initiatives.	Innovations, intellectual property, Awards, POI and other important aspects of S&T	Other important topics	
9		International Relation- India and other countries, various Indian and international agreements, effects of other countries on India and international institutions.	Environment; government initiatives, various judgment, pollution, degradation and conservation efforts		
10			Disaster & Disaster Management		
11			Challenges to internal security, Various Security forces and agencies and their mandate. Cybersecurity; money laundering and its prevention.		



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CENTRES	FOUNDATION COURSE	ADVANCE FOUNDATION COURSE 2 YEAR PROGRAMS	FOR ENQUIRY...	KSG Online Learning (KOL)
DELHI (R.N)	5 <sup>th</sup> February	Admission Open	9811293743	FOUNDATION COURSE Starting From... 5 <sup>th</sup> Feb.
DELHI (V.N)	26 <sup>th</sup> February	26 <sup>th</sup> April	9717380832	DESTINAIRE 2024 PRELIMS TEST SERIES Starting From... 29 <sup>th</sup> Jan.
JAIPUR	26 <sup>th</sup> February	Admission Open	8290800441	NAVIGATOR PRELIMS TEST SERIES Starting From... 19 <sup>th</sup> Feb.
BHOPAL	12 <sup>th</sup> February	25 <sup>th</sup> February	7509975361	NEEV Live Class From... 19 <sup>th</sup> Feb. FOUNDATION COURSE WEEKEND BATCH Starting From... 1 <sup>st</sup> June
INDORE	Admission Open	Admission Open	9893772941	8826002521 / 9811293743
PATNA	Admission Open	—	7463950774	
KOLKATA	Admission Open	—	9007709895	
BENGALURU	19 <sup>th</sup> February	—	7619166663	
HYDERABAD	Admission Open	Admission Open	7996066663	
IMPHAL WEST	5 <sup>th</sup> February	Admission Open	9650245599	

## POLITY & GOVERNANCE

### Guidelines for Registration and Regulation of Coaching Center 2024

#### News Excerpt:

The Ministry of Education has issued guidelines for registering and regulating coaching centres.

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#### Background:

- The number of **unregulated private coaching centres** in the country continues to grow without any policy or regulation.
- Instances of such centres charging **exorbitant fees** from students, **undue stress** on students resulting in **students committing suicides**, loss of precious lives due to fire and other accidents, **lack of facilities** as well as **teaching methodologies**, and many **other malpractices** being adopted by these centres are widely **reported in the media** and have been attracting the Government's attention.
- One of the **fundamental principles** of National Education Policy (NEP) 2020 is to '**focus on regular formative assessment for learning rather than the summative assessment that encourages today's 'coaching culture'**'.
  - It suggests reforming the existing Board and entrance examination system to **eliminate** the need to **undertake coaching classes**.

#### Objective of the Guidelines:

- To provide guidelines for the regulation of the coaching centre for **better guidance** and **assistance** to the **students** in any study programme, competitive examinations, or academic support.

#### Definitions:

- '**Coaching**' means **tuition**, instructions, or guidance in any branch of learning imparted to **more than 50 students** but does not include counselling, sports, dance, theatre, or other creative activities.
- A **coaching centre** includes a centre established, run, or administered by any person to provide coaching for any **study programme, competitive examinations, or academic support** to students at school, college, and university levels of **more than 50 students**.
- '**Tutor**' means **someone** who **guides or trains** students in any coaching centre, including a tutor giving specialized tuition.
- '**Proprietor**' means a coaching centre's owner seeking Registration or Registration and includes the joint owner.
- '**Appellate authority**' means an officer notified by the appropriate Government.

#### Registration of the Coaching Center:

- Coaching centres** existing on the date of **implementation of the guidelines** shall apply for Registration within a period of **three months** from the date of implementation of the guidelines.

#### Conditions for Registration of the Coaching Centers:

- No coaching centre shall-**
  - Engage tutors having **qualifications** less than **graduation**.
  - Make **misleading promises** or **guarantees of rank** or good marks to parents/students for enrolling them in the coaching centre.
  - Enrol students **below 16 years of age**, or enrolment should only be **after the secondary school examination**.
- The coaching centre shall have a **website** with updated **details** of the qualification of **tutors, courses/curriculum, duration of completion, hostel facilities** (if any), the **fees** being charged, **easy exit policy, fee refund policy, number of students undertaken coaching** from the centre and **number of students finally succeeded** in getting admission in Higher Education Institutions etc.

#### Fees:

- The coaching centre shall supply the **prospectus, notes**, and other material to their enrolled students **without separate fees**.
- Suppose the student has paid for the course in full and is **leaving the course in the middle** of the prescribed period. In that case, the student will be **refunded** the fees deposited earlier for the remaining period on a **pro-rata basis within 10 days**.
- Under **no circumstances** shall the **fee** on which enrolment has been made for a particular course and duration shall be **increased during the course**.

#### Curriculum:

- To keep students "**connected with family**" and receive "**emotional boosting**", coaching centres, as suggested by the guidelines, will have to customize leaves.
- Co-curricular activities, life skills, counselling from a **psychologist**, emotional bonding and mental well-being will have to be prioritized in coaching centres.

#### Infrastructure Requirements:

- Within the basic structure of the coaching centre, a **minimum of one square meter area** may be **allocated for each student** during a class/batch.
- The coaching centre building shall adhere to **fire safety codes, building safety codes** and other standards.

- A **complaint box or register** may be placed at the coaching centre for the students to raise a complaint.
- The coaching centre shall have a **committee** for the **redressal** of students' **complaints/grievances**.
- Safe and potable drinking water shall be available for all students and staff of the Center.
- Separate toilets for males and females shall be provided within the coaching centre building premises.

**Code of Conduct by the Coaching Center:**

- In no case, the **number of students** to be enrolled in each class/ batch shall be **increased** in class/batch **during the course**.
- The number of students admitted may align with the requirements of maintaining a **healthy teacher-student ratio** in each class.
- The coaching centre shall **not enrol students below 16 years of age**, or the student enrolment should be **only after the secondary school examination**.

**Counsellors and Psychologists Support:**

- Coaching centres are encouraged to **involve counsellors** and experienced **psychologists** to counsel and provide **psychotherapeutic services to students** to resolve mental **stress and depression**.
- **Framework for Mental Health Promotion -**

Level of Problems	Stakeholders to be involved	Level of Intervention
Mental Well-being	Entire Institutional Community	Mental Well-being Integrated in Institutional Curriculum
Mental Health Knowledge Attitudes & Behavior	All Students and Tutors	Mental Well-being – Part of General Health Curriculum
Psychosocial Problems	Counsellors, Tutors, Peer Mentors, Wardens and Citizens	Extending Additional Help to Students in Need
Severe Problems/ Disorders	Counsellors, Institutional Doctors and Other Experts	Professional Management

**Inclusivity and Accessibility:**

- The coaching centre may make special provisions to encourage greater representation of students from **vulnerable communities**, such as **female students**, students with **disabilities**, and students from **marginalized groups**.
- The coaching centre premises shall be **Divyang-friendly** and **in compliance** with the provisions of the **Rights of Persons with Disabilities Act, 2016**.

- Divyang-friendly provisions such as **braille, e-readers, toilets**, etc. may be made wherever possible.

**Restriction on shifting of Coaching centre:**

- The coaching centre shall conduct coaching **only at the place indicated** in the **registration certificate** and shall **not be shifted** to any place other than its registered place without the **prior written approval** of the competent authority on that behalf.

**Disposal of complaints:**

- A complaint may be filed **before the competent authority** against the coaching centres by the **student, parent or tutor/employee** of the coaching centre and against the students/parents by the coaching centres.
  - The complaints shall be **disposed of within thirty days** by the competent authority.

**Penalties:**

- In case of **violation** of any of the **terms and conditions** of Registration or general conditions, the coaching centre shall be liable for penalties as follows:
  - **Rs 25,000/-** for first offence
  - **Rs. 1,00,000/-** for the second offence
  - **Revocation of Registration** for subsequent offence

**Way Forward:** The guidelines released are **comprehensive** and have **adequate** safety measures for **students** as well as

**parents.** It should be ensured that guidelines are **followed in practice.**

**PEPPER IT WITH:**  
 NEP 2020, Fire safety codes, Building safety codes, Teacher-Student ratio, Psychotherapeutic services, Rights of Persons with Disabilities Act, 2016.

Education is on the **concurrent list**, and the **State and UT Governments** also need to take **proactive action** on the matter. The state government should **monitor** the activities of the **coaching centre** and enquire about any coaching centre regarding the fulfilment of the required **registration eligibility**.

**The New Telecom Act 2023**

**News Excerpt:**

Recently, Lok Sabha and Rajya Sabha have passed **The Telecommunications Bill, 2023**, as a **money bill** to reform and consolidate laws governing the telecommunications sector. It received the **President's assent** and will be called The Telecommunications Act 2023.

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### Legislative History of Communication in India:

- Three key laws have governed **the telecom sector in India**:
  - **Indian Telegraph Act of 1885**, focusing on licensing and communication interception,
  - **Indian Wireless Telegraphy Act of 1933** regulates the possession of wireless telegraph apparatus and
  - **Telegraph Wires (Unlawful Possession) Act of 1950** for regulating the possession of telegraph wires.
    - It was recently repealed by the **Repealing and Amending Act of 2023**, effective December 17, 2023.
- Additionally, the **Telecom Regulatory Authority of India (TRAI) Act of 1997** established TRAI as the regulator responsible for tariff regulations in the telecom sector.
  - The TRAI Act established the **Telecom Disputes Settlement and Appellate Tribunal (TDSAT)** to address disputes and appeals in the sector.
- Notably, the **authority to issue licenses** remains vested with the **Central Government**.
- The **Department of Telecommunications** recognizes the need to restructure the telecom sector's legal and regulatory framework.

### Key Features of the Telecommunications Act 2023:

- **Authorization and Licensing:**
  - Central Government authorization is required for telecommunication services, network establishment, operation, or expansion, and possession of radio equipment.
  - Existing licenses remain valid for their grant period or five years if unspecified.
- **Spectrum Assignment:**
  - Spectrum allocation via auction, except for specified purposes allocated administratively (e.g., national security, disaster management).
  - The Government is empowered to re-purpose or re-assign frequency ranges. Sharing, trading, leasing, and surrender of spectrum permitted.
  - It introduced provisions for allocating spectrum to **satellite internet providers** like OneWeb and SpaceX's Starlink, with active authorizations already granted to **OneWeb and Jio** for satellite-based internet services.
- **Interception, Search, and Suspension Powers:**
  - Communication interception, monitoring, or suspension of services and temporary possession of infrastructure permitted in the interest of public safety, emergencies, or specific grounds (security of the State, offence prevention).

- **User Protection Measures:**
  - The Central Government is empowered to regulate specific messages through prior consent requirements, create 'Do Not Disturb' registers, and establish mechanisms for users to report malware or specified messages.
  - Entities providing telecom services must establish an online mechanism for Registration and redressal of grievances.
- **Right of Way for Telecom Infrastructure:** Entities laying telecom infrastructure are entitled to seek right of way over public or private property on a non-discriminatory and non-exclusive basis.
- **Digital Bharat Nidhi & OTT:**
  - Renaming and expansion of the **Universal Service Obligation Fund** as **Digital Bharat Nidhi**, permitting its use for telecom research and development.
  - **OTT (over-the-top)** services are excluded from the Act, and their regulation falls under the Digital India Act, 2023
- **TRAI Appointments:** Amendments in the TRAI Act allow individuals with significant professional experience to serve as Chairperson or members and may even be from the private sector.
  - The Chairperson must have **at least thirty years of professional experience**, and a **member must have at least twenty-five years of professional experience**, and both must have served as a member of the Board of Directors or chief executive of a company.
- **Offences and Penalties:** Specification of criminal and civil offences with penalties such as imprisonment, fines, or both for providing unauthorized telecom services, network access, or breaches of authorization terms.
- **National Security measures:** The Central Government may, if satisfied that it is necessary or expedient to do so, in the **interest of national security, friendly relations with foreign States, or in the event of war**, by notification, take measures to prevent the importation of telecom equipment from potentially adversarial nations.
- **Adjudication Process:** Appointment of adjudicating officers by the Central Government for inquiries and orders against civil offences.
  - Establishment of a **Designated Appeals Committee** and provisions for **appeals to TDSAT** against committee decisions related to terms and conditions breaches.



Criticisms of the Act	Potential benefits of the Act
<ul style="list-style-type: none"> <li>● <b>Independent Oversight Mechanism:</b> It primarily involves senior Government officials. However, this may raise concerns regarding potential biases or lack of checks and balances.</li> <li>● <b>Judicial Oversight for Interception:</b> The absence of judicial scrutiny in the interception process could raise concerns about its legitimacy.</li> <li>● <b>Potential for Mass Surveillance:</b> The broad language used in the Act <b>allows for the interception or monitoring of any communication based on specific grounds.</b> This could potentially lead to mass surveillance, compromising the fundamental right to privacy.</li> <li>● A significant concern is the <b>absence of specified procedures and safeguards for search and seizure actions.</b></li> <li>● <b>Scope of Telecommunication Services:</b> The expansive definition of telecommunication services encompasses internet-based services, indicating a shift from the narrower scope under the Indian Telegraph Act of 1885. <ul style="list-style-type: none"> <li>○ This broader scope may have <b>implications for regulation, oversight, and potential encroachment into digital spaces,</b> necessitating careful consideration of its implications.</li> </ul> </li> <li>● <b>Centralized Regulatory Functions:</b> This centralized approach to control over telecom services during perceived threats to public safety might impact regulatory autonomy and face industry disapproval.</li> <li>● <b>Issues with Citizen's Privacy:</b> <ul style="list-style-type: none"> <li>○ The Act's section on <b>Powers of Authorization and Assignment</b> rightly provides for technology neutrality of spectrum use but does not reflect the same in the delivery of communication services.</li> <li>○ <b>Biometric Verification:</b> Requiring biometric-based identification for telecom service users to reduce spam raises <b>questions about the proportionality</b> of such measures. The <b>fundamental right to privacy protects the collection and use of biometric data.</b></li> </ul> </li> <li>● <b>Worldwide Regulatory experience:</b> <ul style="list-style-type: none"> <li>○ <b>Functional separation</b> has been used as a regulatory remedy by many countries like <b>Sweden, the UK, Australia, Ireland and Poland</b> to address market concentration.</li> <li>○ When disproportionate, the remedies can lead to counterproductive outcomes, including lower investments and innovation.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● The structural reforms envisaged under the 2023 Act aim to streamline what has so far been a complex licensing system in the telecom sector and instead usher in a simple authorization mechanism.</li> <li>● <b>Clarity on Spectrum Assignment:</b> While auctions remain the primary method, they allow administrative allocation of spectrum for specific sectors like metro rails, defence, community radio, etc. <ul style="list-style-type: none"> <li>○ This clarity can help <b>telecom companies plan and utilize spectrum resources</b> better.</li> </ul> </li> <li>● <b>Facilitation of Satellite Internet Services:</b> The satellite internet industry will not need to bid for spectrum, aligning India's approach with global standards. <ul style="list-style-type: none"> <li>○ This provision could encourage the growth of satellite-based internet services, offering telecom companies new opportunities for service expansion, especially in remote or underserved areas.</li> </ul> </li> <li>● <b>Permits entities to share, trade, and lease spectrum:</b> <ul style="list-style-type: none"> <li>○ This flexibility in spectrum utilization could benefit telecom companies by allowing them to <b>optimize their spectrum resources and potentially reduce operational costs.</b></li> </ul> </li> <li>● <b>Right of Way</b> provision would benefit industry stakeholders as it ensures fair access, specifies the responsibilities and facilitates the advancement of digital connectivity.</li> </ul>

### Way Forward:

- **Balancing National Security and Privacy Concerns:** Review and refine the provisions related to interception and surveillance to strike a balance between national security imperatives and safeguarding individual privacy rights.
  - Establish clear guidelines and oversight mechanisms to prevent potential misuse of interception powers.
- **Clarity on Regulatory Scope:** Clarify and define the scope of the Act, especially concerning the regulation of internet-based communication services.

- Ensure that the legislation clearly outlines the limitations and boundaries of regulatory authority to avoid ambiguity and prevent overreach.
- **Need for a Unified Vision:**
  - The Government should bring synergies in licensing, standards, skilling and governance across different departments.
  - Besides creating an enabling business Environment that lowers costs for business, investing in fibre infrastructure will require a significant amount of resource generation for both urban and rural areas.
- **Technology type:** A combination of technologies can be used to deliver voice and data services.

- **The sustained growth of India's telecom industry:** The Telecommunications Act of 2023 sits at the centre of India's digital revolution by **unleashing competition in services, facilitating the transition to fibre-based networks and promoting technology dynamism.**

**PEPPER IT WITH:**  
Telecom Regulatory Authority of India (TRAI), (TDSAT), OneWeb, Starlink, OTT.

## The Chief Election Commissioner and Other Election Commissioners Act, 2023

### News Excerpt:

The **President** gave her **assent** to the Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Bill 2023, which seeks to establish a mechanism to appoint the top election officials in the country.

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**Key highlights of the Act**

- It replaces the **Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act 1991.**
- It outlines the **appointment, salary, and removal** of the Chief Election Commissioner (CEC) and Election Commissioners (ECs).
- The CEC and ECs will **be appointed by the President** based on a Selection Committee.
- **The Selection Committee** will consist of the Prime Minister, a Union Cabinet Minister, and the leader of the largest opposition party in Lok Sabha.
  - The Selection Committee's recommendations will be valid even when there is a vacancy in this Committee.
- **A Search Committee** headed by the Cabinet Secretary will propose a panel of names to the Selection Committee.
  - **Eligibility** for the posts includes holding (or having held) a post equivalent to the Secretary to the central government.
  - **The salary and conditions of service** for the CEC and ECs will be equivalent to that of the Cabinet Secretary.
- Under the 1991 Act, it was equivalent to the salary of a Supreme Court Judge

### Issues with the Act:

- **Independence of the ECI:** The selection process of the ECI may be **dominated** by the **Government**, which has implications for its independence.
  - The **Constitution** envisages the **ECI** as an **independent body** that is responsible for conducting free and fair elections.
  - Members of the **Constituent Assembly** had also noted that the responsibility of conducting

elections should be entrusted to people who are **free from political influences** and local pressures.

- **Dr. B.R. Ambedkar** had stated that for **elections to be free** in the real sense of the word, they should be taken out of the hands of the Government of the day.
- The **Supreme Court (2023)** has also stated that **any action of the ECI** that treats political parties unevenly or arbitrarily could **breach the right to equality.**
- **The Government dominates the Selection Committee:**
  - The **Supreme Court** ruled that until Parliament made a law for the appointment of the CEC and ECs, they would be appointed on the **recommendation of a Selection Committee.**
    - This Committee will comprise the **Prime Minister, the Chief Justice of India, and the Leader of the Opposition in Lok Sabha** (or Leader of the largest opposition party).
- **Selection Committee's recommendations to be valid despite vacancy or defect in the Constitution:**
  - Despite a vacancy in its constitution, accepting the Selection Committee's recommendations **may effectively lead to a monopoly of government members in selecting candidates.**
- **Salaries to be decided by the Government:**
  - Under the **1991 Act**, the salaries of CECs and ECs are **equivalent** to the salaries of a **Supreme Court Judge (Under Article 125- fixed by an Act of Parliament).**
  - The **Act** equates the salary of the CEC and ECs to that of the **Cabinet Secretary** of the Government.
  - This step **may lead to government influence as the Government** fixes the Cabinet Secretary's salary **upon the recommendation of the Central Pay Commission.**
- **Eligibility Criteria:**
  - Under the **Act**, **only** a person who is or has been at a **rank equivalent to Secretary** to the Government will be **eligible** to be the **CEC or EC.**
  - CECs and ECs also perform **quasi-judicial functions.** Thus, limiting these posts to senior bureaucrats may exclude other suitable candidates.

### Global Practices: Selection Process of the Election Commission in other countries

Country	Appointing Authority	Selection Committee/Process
<b>South Africa</b>	<b>President</b>	President of the Constitutional Court (Chairperson), representative of the Human Rights Court, representative of the Commission on Gender Equality, and the public prosecutor.

<b>United Kingdom</b>	<b>The monarch, upon approval by the House.</b>	The Speaker's Committee on the Electoral Commission with MPs as members, oversees the recruitment of electoral commissioners. The candidates for these posts are then approved by the House of Commons and appointed by the British monarch. The Speaker asks the Leader of the House to table a motion for an address to appoint the recommended candidates.
<b>United States</b>	<b>President</b>	The Commission is appointed by the President and confirmed by the Senate.
<b>Canada</b>	-	Appointed by a resolution of the House of Commons

**Suggestions made by various Commissions/Courts for the composition of the Selection Committee:**

Body	Members
<b>Goswami Committee (1990)</b>	<b>For CEC:</b> Appointed by the President in consultation with the Chief Justice + Leader of Opposition of Lok Sabha (or leader of the largest party in Lok Sabha). <b>For EC:</b> Appointed by the President in consultation with the Chief Justice + Leader of Opposition of Lok Sabha (or leader of the largest party in Lok Sabha) + CEC.
<b>National Commission to Review the Working of the Constitution Report (2002)</b>	Prime Minister + Leader of the Opposition in Lok Sabha + the Leader of the Opposition in Rajya Sabha + the Speaker of Lok Sabha + the Deputy Chairman of Rajya Sabha.
<b>Law Commission (2015)</b>	Prime Minister + the Leader of Opposition of Lok Sabha (or the leader of the largest opposition party in Lok Sabha) + the Chief Justice.
<b>Supreme Court (2023)</b>	Prime Minister + Leader of Opposition in Lok Sabha (or leader of single largest opposition party in Lok Sabha) + Chief Justice.

**Way Forward:**

- In order to obtain a variety of viewpoints and guarantee that concerns are sufficiently addressed, the administration should **consult with stakeholders, legal professionals**, and opposition parties.
- The Government should assess the Selection Committee's composition and consider **improving its balance**.
  - The Government should include impartial **specialists, lawyers, and civil society representatives** either as **observers** on the Selection Committee or as **members** of the Search Committee to increase the legitimacy of the process.

**PEPPER IT WITH:**  
Constituent Assembly, Central Pay Commission, Quasi-judicial functions, Article 125.

**The Bharatiya Nyaya (Second) Sanhita, 2023**

**News Excerpt:**

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The Bhartiya Nyaya (Second) Sanhita 2023 (BNS2) received the assent of the President on the 25th of December, 2023.

- It has replaced the **Indian Penal Code 1860**, introducing new offences, eliminating court-struck-down offences, incorporating 358 sections, monitoring most of the IPC provisions, and enhancing penalties for various offences.

**Context of the Act:**

- The **Indian Penal Code (IPC), 1860**, is India's principal law on criminal offences. Offences covered include those affecting:
  - (i) Human body such as assault and murder;
  - (ii) Property such as extortion and theft;
  - (iii) Public order such as unlawful assembly and rioting;
  - (iv) Public health, safety, decency, morality, and religion;
  - (v) Defamation, and
  - (vi) Offences against the State.
- The **Bharatiya Nyaya Sanhita (BNS)** was introduced on August 11, 2023 to replace the IPC. The Standing Committee on Home Affairs examined it.
- The **Bharatiya Nyaya (Second) Sanhita, 2023 (BNS2)** was introduced on December 12, 2023, after the earlier Bill was withdrawn.

## Key Features of BNS2:

- **Offences against the body:** The IPC criminalizes acts such as murder, abetment of suicide, assault and causing grievous hurt. The BNS2 retains these provisions. It adds new offences such as organized crime, terrorism, and murder or grievous hurt by a group on certain grounds.
- **Sexual offences against women:** The IPC criminalizes acts such as rape, voyeurism, stalking and insulting the modesty of a woman. The BNS2 retains these provisions. It increases the threshold for the victim to be classified as a major, in the case of gang rape, from 16 to 18 years of age.
  - The BNS2 omits **Section 377 of IPC**, which the Supreme Court read down. This removes rape of men and bestiality as offences.
  - It also criminalizes sexual intercourse with a woman by **deceitful means or making false promises**.
- It adds **community service** as a form of punishment.
- **Sedition:** The BNS2 removes the offence of sedition. It instead penalizes the following:
  - Exciting or attempting to excite secession, armed rebellion, or subversive activities,
  - Encouraging feelings of separatist activities, or
  - Endangering the sovereignty or unity and integrity of India. These offences may involve exchanging words or signs, electronic communication, or using financial means.
- **Terrorism:** Terrorism includes an act that intends to:
  - Threaten the unity, integrity, security or economic security of the country or
  - Strike terror in the people or any section of people in India.
  - Punishment for attempting or committing terrorism includes:
    - Death or life imprisonment, and a fine if it results in death of a person or
    - Imprisonment between five years and life, and a fine.
- **Organized crime:** It includes crimes such as kidnapping, extortion and cyber-crime committed on behalf of a crime syndicate. **Petty organized crime** is also an offence now.
- Attempting or committing organized crime will be punishable with:
  - Death or life imprisonment and a fine of Rs 10 lakh if it results in the death of a person or

- Imprisonment between 5 years and life, and a fine of at least Rs 5 lakh rupees.
- **Mob lynching:** The BNS2 adds murder or grievous hurt by five or more people on specified grounds as an offence. These grounds include race, caste, sex, language, or personal belief. The punishment for such murder is life imprisonment or death.
- **Rulings of the Supreme Court:** The BNS2 conforms to some Supreme Court decisions. These include omitting adultery as an offence and adding life imprisonment as one of the penalties (in addition to the death penalty) for murder or attempt to murder by a life convict.

## Key Issues and Analysis:

### 1) Minimum age of criminal responsibility higher than several other jurisdictions:

- Advances in understanding how brain biology affects adolescent behaviour have raised questions about how responsible children should be for their actions.
- Under IPC, nothing is considered an offence if committed by a child below the age of seven years. The age of criminal responsibility increases to 12 years if the child is found to not have attained the ability to understand the nature and consequences of his conduct.
- The BNS2 retains these provisions. This age is lower than the age of criminal responsibility in other countries. In 2007, a UN Committee recommended that states set the age of criminal responsibility to above 12 years. The age of criminal responsibility varies across countries.

### 2) The age threshold of the victim for similar offences against children varies:

- The BNS2 provides for higher penalties in case of offences against children. In most cases, it provides that a victim below the **age of 18 years** be treated as a child.
- The penalty for **rape and gang rape of women and children** is different. However, the threshold for a minority of the victim for different offences of rape and, consequently, the penalty varies.
- For gang rape, the penalty differs based on whether the victim is above or below 18 years of age. However, for rape, the penalty is different based on whether the victim's age is below 12 years, between 12 and 16 years, or above. This is inconsistent with the **Protection of Children from Sexual Offences Act, 2012**, which classifies all individuals below the age of 18 as minors.

### Illustrative list of overlap between and IPC, BNS2 and Special Laws

BNS2	Special Law
<b>Adulteration of food or drink for sale</b>	
<ul style="list-style-type: none"> <li>Imprisonment up to 6 months, fine up to Rs 5,000, or both.</li> <li>Non-Cognizable, bailable. (IPC Sec. 272, 273; BNS2 Clause 274,275)</li> </ul>	<ul style="list-style-type: none"> <li>The Food Safety and Security Act, 2006: Imprisonment up to life, and a fine up to Rs 10 lakh for manufacture, storage, sale of unsafe food. Sentence proportionate to damage caused. (Sec. 59)</li> </ul>
<b>Adulteration of drugs, and sale of adulterated drugs</b>	
<ul style="list-style-type: none"> <li>Adulteration penalised with imprisonment up to a year, fine up to Rs 5,000, or both.</li> <li>Sale of adulterated drugs penalised with imprisonment up to 6 months, fine up to Rs 5,000 or both. Non-Cognizable, bailable. (IPC Sec. 274, 275; BNS2 Clause 276, 277)</li> </ul>	<ul style="list-style-type: none"> <li>The Drugs and Cosmetics Act, 1940: Consumption of adulterated drugs causing death or grievous hurt penalised with imprisonment between 10 years and life. and fine of at least Rs 10 lakh or 3 times the value of the seized drugs, whichever is higher.</li> <li>In other cases, penalty is imprisonment of 3- 5 years, and fine of at least Rs 1 lakh, or 3 times the value of the seized drugs, whichever is more. (Sec. 27)</li> </ul>
<b>Unlawful compulsory labour</b>	
<ul style="list-style-type: none"> <li>Imprisonment up to one year, fine, or both. Cognizable, Bailable. (IPC Sec. 374; BNS2 Clause 146)</li> </ul>	<ul style="list-style-type: none"> <li>The Bonded Labour System (Abolition) Act, 1976: Imprisonment up to 3 years and fine up to Rs 2,000. (Sec. 16, 17, 18)</li> </ul>
<b>Abandoning a child</b>	
<ul style="list-style-type: none"> <li>Parent or guardian abandoning a child below the age of 12 is punishable with imprisonment up to 7 years, fine, or both.</li> <li>Cognizable, bailable. (IPC Sec. 317; BNS2 Clause 93)</li> </ul>	<ul style="list-style-type: none"> <li>The Juvenile Justice Act, 2015: Abandoning or procuring a child for abandonment is punishable with imprisonment up to 3 years, fine up to Rs 1 lakh, or both.</li> <li>Biological parents abandoning a child due to circumstances beyond their control are exempt. (Sec. 75)</li> </ul>
<b>Rash driving</b>	
<p>Punishable with imprisonment up to 6 months, fine up to Rs 1,000 or both.</p> <p>Cognizable, bailable, non- compoundable. (IPC Sec 279; BNS2 Clause 281)</p>	<ul style="list-style-type: none"> <li>The Motor Vehicles Act, 1988: Punishment for the first offense: imprisonment up to 6 months, and/or fine up to Rs 5,000. Subsequent offence within three years: imprisonment up to 2 years and/or a fine up to Rs 10,000. Cognizable, bailable. compoundable. (Sec. 184)</li> </ul>

- Further, the BNS2 retains from the IPC the age of **21 years** for the offence of **importing a foreign woman** from another country. However, for **boys**, it adds the age threshold of **18 years**. The **Standing Committee on Home Affairs (2023)** has recommended defining a child as someone below 18.

#### What are the present issues?

##### 1. Overlap between the BNS2 and special laws

- When the IPC was enacted, it encompassed all criminal offences. Over time, special laws have been enacted to address specific subjects and related offences. Some of these offences have been removed from the BNS2.

- For example, offences related to weights and measures were incorporated in the **Legal Metrology Act of 2009** and have been removed from the BNS2.

- The BNS2 also adds certain new offences, such as organized crime and terrorism, which are already covered under special laws. Such overlapping in-laws **may cause additional compliance burdens and costs**.

- It may also lead to multiple laws providing varying penalties for the same offences. Deleting such offences could remove duplication, possible inconsistencies, and multiple regulatory regimes.

##### 2. Aspects of sedition retained:

- The IPC defines sedition as bringing or attempting to bring hatred, contempt, or exciting disaffection towards the Government. The Supreme Court has put the offence of sedition on hold until a Constitution bench examines it.
  - The BNS2 removes this offence. Instead, it adds a provision that penalizes:
    - Exciting or attempting to excite secession, armed rebellion, or subversive activities,
    - Encouraging feelings of separatist activities, or
    - Endangering the sovereignty or unity and integrity of India.
  - These offences may involve exchanging words or signs, electronic communication, or using financial means. It may be argued that the new provision retains certain aspects of the offence of sedition and broadens the range of acts that could threaten India's unity and integrity.
  - Terms like '**subversive activities**' are also not defined, and what activities will meet this qualification is unclear.
  - In 1962, the Supreme Court limited the application of sedition to acts that carry the intention or tendency to create public disorder or incite violence. Note that the BNS2 refers to '**seeditious matters**' in BNS2, despite the word sedition not appearing in BNS2.
3. **Solitary confinement may violate fundamental rights:**
- The **Prisons Act of 1894**, which also permits solitary confinement, has been adopted by many state laws. Provisions on solitary confinement are not in line with Court rulings and expert recommendations.
  - The **Supreme Court (1979)** has held that a measure such as pushing prisoners into solitary cells deprives them of their **right to life and liberty** under **Article 21**.
4. **The scope of community service needs to be clarified:** The BNS2 adds community service as a punishment. However, the BNS2 does not define what community service will entail and how it will be administered. The **Standing Committee on Home Affairs (2023)** recommended defining the term and nature of '**community service**'.

**PEPPER IT WITH:**  
 Indian Penal Code 1860, Section 377 of IPC, Protection of Children from Sexual Offences Act, 2012, Legal Metrology Act, 2009, Right to life and liberty, Law Commission.

**Way Forward**

- Ensure laws are clear, concise, and easily understandable by both legal professionals and the general public.
- Strengthen provisions that protect victims' rights and ensure their access to justice.
- Emphasize rehabilitative justice and ensure reintegration of offenders into society alongside punitive measures.
- Incorporate technology to streamline legal processes, improve investigation techniques, and enhance evidence collection.
- Public awareness campaigns and educational programs should inform citizens about their rights and responsibilities within the criminal justice system.
- Active participation from various stakeholders, including legal professionals, law enforcement agencies, NGOs, and affected communities, in the reform process will ensure inclusivity and diverse perspectives.

**Tribunals cannot direct the Government to frame policy: SC**

**News Excerpt:**

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The Supreme Court (SC) has clarified that **tribunals** functioning under the **strict parameters** of their **governing legislations** cannot direct the Government to make policy.

- The SC was dealing with whether the **Armed Forces Tribunal (AFT)** could have **directed** the Government to make a **policy** to fill up the **Judge Advocate General (Air) post**.

**Reasons given by SC:**

- The **AFT** was vested with the powers of a **civil court**. It did **not** have the **powers** of the **Supreme Court** or the **High Courts (HC)**.
  - Even the **HCS cannot**, in the exercise of the powers under **Article 226** of the Constitution, **direct** the **Government** or a department to formulate a particular **policy**.
- Creating or **sanctioning a scheme or policy** regarding the service of defence personnel or their regularisation was the **“sole prerogative of the Government”**.
- **Making policy** is **not** in the **domain** of the **judiciary**.
- The Tribunal is a quasi-judicial body that cannot direct those responsible for making policy to make a policy in a particular manner.

**The distinction between Courts and Tribunals:**

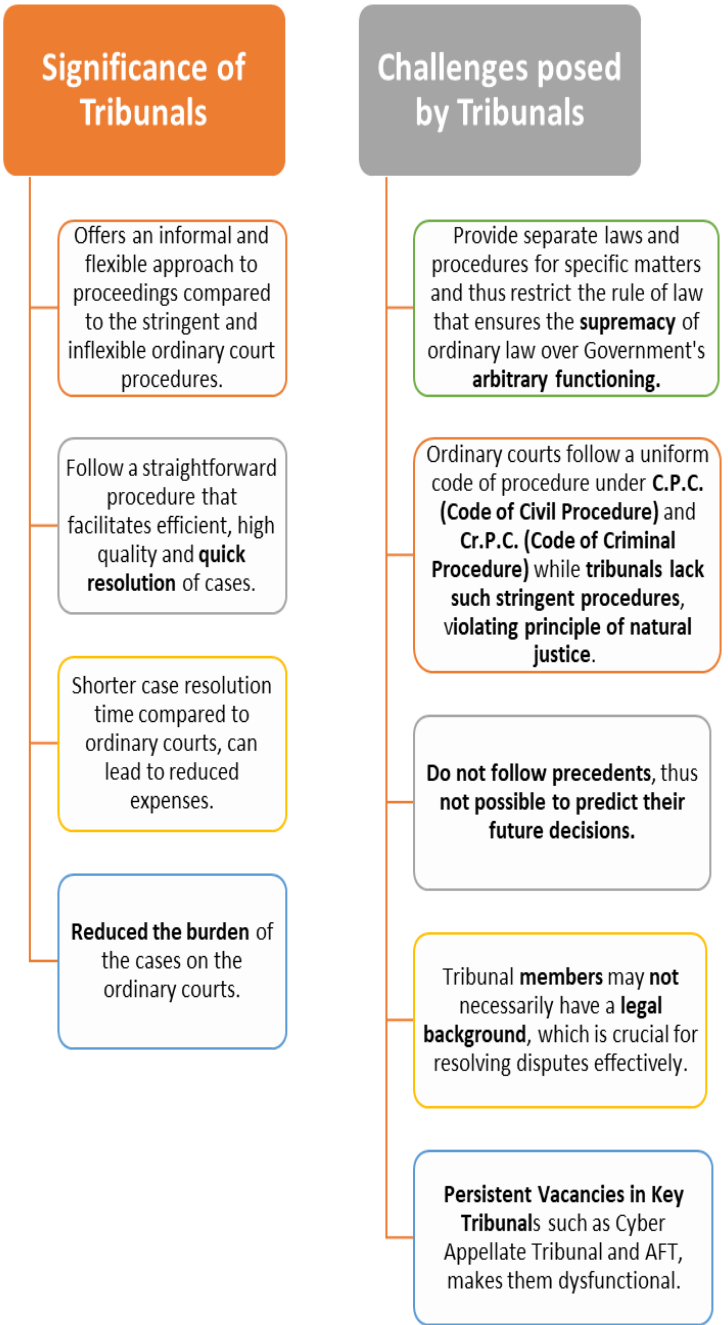
Court of Law	Administrative Tribunal
Vested with general jurisdiction over all the matters.	Deals with service matters and is vested with limited jurisdiction to decide a particular issue.
It can decide the validity of legislation.	It cannot decide the validity of legislation.
It is strictly bound by all the rules of the Evidence Act and by the procedure of the CPC.	It is not bound by the rules of the Evidence Act and the CPC unless the statute which creates the tribunal imposes such an obligation.
It is presided over by an officer expert in the law.	It is not mandatory that all the members need to be trained and experts in law.
Does not follow investigatory or inquisition functions.	Perform investigatory functions as well, along with its quasi-judicial functions.
Its decision is <b>objective</b> , i.e. based on the evidence and materials produced before the court.	Its decision is <b>subjective</b> , i.e., it decides the matters while taking into account policy and expediency.
It is bound by precedents, the principle of res judicata and the principle of natural justice.	It is not obligatory to follow precedents and the principle of res judicata, but the principle of natural justice must be followed.

**Armed Forces Tribunal (AFT):**

- The **Armed Forces Tribunal Act 2007** led to the formation of AFT.
- It has the power provided for the adjudication or trial by AFT of disputes and complaints with respect to the **commission, appointments, enrolments and conditions of service** in respect of persons subject to the **Army Act, 1950, Navy Act, 1957 and Air Force Act, 1950**.
- It can further provide for **appeals** arising out of **orders, findings or sentences of courts-martial** held under the said Acts and for matters connected therewith or incidental thereto.
- Besides the **Principal Bench in New Delhi**, AFT has **Regional Benches** at Chandigarh, Lucknow, Kolkata, Guwahati, Chennai, Kochi, Mumbai, Jabalpur, Srinagar and Jaipur.
- Each Bench comprises a **Judicial Member** and an **Administrative Member**.
  - Judicial Members are retired High Court Judges.
  - Administrative Members are retired Members of the Armed Forces who have held the rank of Major General/ equivalent or above for a period of three years or more. **Judge Advocate General (JAG)**, who has held the appointment for at least one year, are also entitled to be appointed as the **Administrative Member**.

**Tribunal System:**

- The **42nd Amendment** to the Constitution introduced **Part XIV-A**, which empowers Parliament to create tribunals. It includes:
  - Article **323A: Administrative tribunals** (both at central and State level) for adjudication of matters related to recruitment and conditions of service of public servants and
  - Article **323B: Other tribunals** for adjudication of certain subject matters, including industrial disputes, taxation (such as levy and collection of taxes), and foreign exchange.
- The SC has ruled that tribunals, being quasi-judicial bodies, should have the **same level of independence from the executive as the judiciary**.
- In order to ensure that tribunals are independent from the executive branch, the **SC recommended that all administrative matters be managed by the Law Ministry** rather than the ministry associated with the subject area.



**Way Forward:**

- The creation of a National Tribunal Commission (NTC) was recommended by the 74th report of the Parliamentary Standing Committee on Law, released in 2023, to address concerns such as the selection process, setting eligibility criteria for appointment, etc.
- In 2019, the SC recommended a judicial impact assessment to analyze the amalgamation of tribunals.
- The **SC in Union of India vs. R. Gandhi (2010)** stated that when the existing jurisdiction of a court is

**PEPPER IT WITH:**  
 Armed Forces Tribunal (AFT), Article 226, Finance Act, 2017, 42nd Amendment, National Tribunal Commission (NTC).

transferred to a tribunal, its members should be persons of a rank, capacity and status as nearly as possible equal to that of the court.

- The Ministry of Law & Justice should provide administrative support for all Tribunals.

The judgment serves as a reminder of the importance of separation of powers among different government institutions in a democratic setup. This decision has significant implications for how tribunals and courts interact with policy-making processes, emphasizing judicial restraint and adherence to the constitutional framework.

**Witness protection in India**

**News Excerpt:**

The Supreme Court-appointed Special Investigation Team (SIT) re-investigating nine 2002 Gujarat riot cases has **withdrawn** police and paramilitary **protection** to all the witnesses. The only exception has been made for Zakia Jafri.

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**About the witness:**

- A witness may be defined as a **person who gives evidence or deposes** before a judicial tribunal.
- The term "**witness**" has **not been defined** anywhere in the **Criminal Procedure Code (CrPC)**.
- **Any court**, however, at any **stage of inquiry, trial** or other proceeding under the CrPC, can **summon any person as a witness**, or examine any person in attendance, though not summoned as a witness, or recall and re-examine such person if his evidence appears to be essential to the just decision of the case.
- **Section 161 CrPC** dealt with the examination of witnesses and allowed investigating police officers to orally examine anyone "**supposed to be acquainted**" with the case's facts and circumstances. It also said the witness is bound to answer all questions "**truly**" but needn't answer questions that expose them to criminal charges, penalties, or forfeiture.
- **Section 398 of the Bharatiya Nagarik Suraksha Sanhita**, which has replaced the CrPC, states that **every state government shall prepare and notify a Witness Protection Scheme** for the State to ensure the protection of witnesses.

**Need to protect witnesses:**

- **Judicial Interpretation:**
  - In **Swaran Singh vs. the State of Punjab (2000)**, the SC observed that a criminal case is built upon the edifice of evidence that is admissible in law; for that, witnesses are paramount.
- **Law Commission:**
  - The **14th report of the Law Commission, 1958**, highlighted the tribulations commonly encountered by witnesses, like **difficulty**



accessing courts owing to expenses, travel, time, and frequent adjournments.

- The **Law Commission's 154th and 178th reports** also discussed various facets of witness protection.
- **Other factors:**
  - Witnesses in India are **mistreated**, given **no facilities**, and face the danger of **bodily harm, death, abduction, and threats**, besides other forms of mental and physical **harassment**.
  - Several **witnesses also turn hostile** and do not tell the truth when the party calls them.
    - In cases like the **Jessica Lal murder case** or the **Salman Khan hit-and-run case**, the prosecution failed after witnesses turned hostile.

**Efforts made to protect witnesses:**

- The **Justice V.S. Malimath Committee Report (2003)** recommended enacting a law to protect witnesses and their families, following laws in the **USA** and **other countries**.
- The **Delhi government** also notified a Witness Protection Scheme in **2015**.
- In 2017, the **SC questioned the Centre** about the witness protection rules along the lines of the NIA Act 2008 not being framed.
- Protections in laws such as Section 195A **IPC**, Sections 151–52 of the **Indian Evidence Act, 1872** and Section 327 of **CrPC**, like criminalizing threatening of witnesses, prohibiting parties from asking insulting questions to witnesses and empowering magistrates to shield court proceedings from the public.
- In **2018**, the SC drew up a nationwide **Witness Protection Scheme**.

Witness Protection Scheme 2018	
The Ministry of Home Affairs prepared "Witness Protection Scheme, 2018" in consultation with the National Legal Service Authority, Bureau of Police Research & Development and the State Governments.	Supreme Court in Mahender Chawla vs. Union of India (2019) endorsed the scheme and directed the Centre, states, and UTs to enforce this scheme.
Categories of witness:	
<b>Category 'A'</b> Where the threat extends to the life of a witness or his family members.	<b>Category 'B'</b> - Where the threat extends to their safety, reputation, and property.
	<b>Category 'C'</b> - Where the threat is moderate and extends to their harassment or intimidation.

Procedural framework:		
An application is made by a witness, their family member, lawyer, or the concerned IO/SHO/SDPO/Jail Superintendent before "a competent authority.	A "Threat Analysis Report" is prepared and submitted by the Head of the Police in the investigating district.	Depending on the urgency, the "competent authority" can pass orders for interim protection.
Competent Authority under the Scheme:		
Standing Committee in each district chaired by the District and Sessions Judge, with the Head of the Police in the District as Member and Head of the prosecution in the District as its Member Secretary.		
State Witness Protection Fund:		
Proposed under the Scheme to meet the expenses incurred while implementing the Witness Protection Order	Sources of the fund: Budgetary allocation, Fines ordered by the courts/tribunals; Donations and contributions permitted by the Government; and Funds contributed under Corporate Social Responsibility	

The Witness Protection Scheme, 2018, is the **first attempt** at the **national level** to **holistically provide** for the protection of the witnesses, which will go a long way in **eliminating secondary victimization**. The witnesses, being **eyes and ears of justice**, play an important role in **bringing perpetrators of crime to justice**. This scheme attempts to ensure that witnesses receive **appropriate and adequate protection**. This will go a long way in strengthening the country's Criminal Justice System and consequently enhance the National Security Scenario.

**PEPPER IT WITH:**  
Criminal Procedure Code (CrPC), Law Commission, Justice V.S. Malimath Committee Report, Indian Evidence Act, 1872.

**Bilkis Bano case**

**News Excerpt:**

The Supreme Court (SC) quashed the order of *en masse* remission granted by the State of Gujarat in August 2022 to 11 men sentenced to life imprisonment for the gangrape of Bilkis Bano and the murder of her family, including a two-month-old infant during the 2002 riots.

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- While quashing the Gujarat government's decision, the SC acknowledged the importance of **personal liberty as a fundamental right under Article 21** of the Constitution and sought to address whether the rule of law can prevail over it.

### Bilkis Bano case: Timeline of events

**2002 Gujarat riots-** Bilkis Bano, five months pregnant, fled her home with her 3-year-old daughter, and family.

They reached the Chhaparvad district when a mob of 20-30 men attacked them. 11 of these men gang-raped Bilkis Bano, her mother and three other women. Seven of her family members, including her 3-year-old daughter, were killed by the mob.

**2003:** Bilkis Bano turned to the National Human Rights Commission (NHRC), eventually filing an appeal in the Supreme Court (SC).

**2004:** The SC instructed the CBI to take up the investigation of the case. The trial was transferred from Ahmedabad to Mumbai over fears of evidence tampering.

**2008:** 13 individuals in the case were convicted on charges of rape, murder and conspiracy, out of which 11 were given life sentences. These convicts then challenged their conviction in the Bombay High Court (HC).

**2017:** HC upheld its previous order of life sentences for 11 convicts.

**2022:** One of the convicts, Radheshyam Shah, approached the HC & SC seeking early release in 2022, having already served 15 years. The SC passed this case to the Gujarat government.

**August 15, 2022:** Gujarat government released all 11 convicts under its remission policy. However, this decision sparked a major public backlash and prompted petitions from opposition MPs. Bilkis Bano filed an appeal in the SC to review the decision of the Gujarat government.

**2023:** The matter was listed in the SC in March, after which arguments from the Centre and Gujarat government were heard. SC also asked the state government to present the original documents based on which the decision was taken.

**January 8, 2024:** SC decided to dismiss the remission of the convicts in Bilkis Bano gang rape case, ordering them to surrender to the authorities in two weeks.

### Rule of Law vs Personal Liberty:

- Rule of Law is defined as **"a government of laws and not of men"** and acts as a check to the executive's lawlessness by ensuring that no official or administrator can arrest or detain a person without legislative sanction.

- In the present case, the court explained the concept to mean that **whenever the State fails to perform its duties, the court will step in "to ensure that the rule of law prevails over the abuse of the process of law"**.
  - Such abuse could stem from inaction, arbitrary actions of protecting offenders, or the failure of different authorities to discharge obligations according to the law.
- Breaching the rule of law amounts to negating equality, as prescribed by Article 14.**
  - It means no one, however high or low, is above the law, and the concept is **"closely intertwined"** with adjudication by courts of law.
- Referring to Justice H R Khanna's dissenting judgment in **ADM, Jabalpur vs. Shivakant Shukla (1976)**, the court noted that **"rule of law is the antithesis of arbitrariness"**.
- The court noted that the concept of justice includes not just the convict's rights but also those of the victims and the law-abiding sections of society while referring to the **2014 ruling in Surya Baksh Singh vs. State of UP**.
- The SC, in dealing with the plea of the convicts not to be sent back to prison, states that **liberty is precious when it is obtained by due process law**.
  - Rejecting the convicts' plea for the protection of liberty, the court held that **the rule of law must prevail and the orders of remission be set aside**.

### On what grounds did the Supreme Court strike down the remission given by the Gujarat government in 2022?

- Since the trial in the case was transferred from Gujarat — where the crime was committed — to Mumbai, Maharashtra, the Supreme Court held that the Government of the State of Gujarat had no jurisdiction to entertain the prayers seeking remission of the 11 convicts as it was not the appropriate Government within the meaning of Section 432 (7) read with Section 432 (1) and (2) of the Code of Criminal Procedure (CrPC) which designates the appropriate Government with authority to grant remission.
  - The **State of Gujarat had "usurped the powers of the state of Maharashtra**, which only could have considered the applications seeking remission".
  - The Gujarat government had no jurisdiction to entertain the remission applications or pass orders granting remission as the trial took place in Maharashtra, making the Maharashtra government the "appropriate" one to decide on the remission.
- The court also said that the **convicts had not fulfilled the condition of paying a fine ordered by the trial court to be considered for remission**.

**What is remission?**

- Remission refers to the reduction or mitigation of the punishment imposed by the court.
- It can involve the suspension, remission, or commutation of the sentence, providing an opportunity for convicts to have their sentences lessened.
- The remission policy, as outlined in legal frameworks such as the Code of Criminal Procedure (CrPC), grants the Government (both State and central) the authority to suspend, remit, or commute sentences.
- This power is exercised based on certain considerations, such as the nature of the offence, the character of the offender, and the circumstances of the case.

**Can the convicts apply for remission again?**

- The criminal justice system has provisions like remission or reduction of sentence, considering that a person can reform and be set free as a better citizen.
- The SC said that there are **competing interests** — that of the **rights of the victim or her family to justice and that of a convict's claim to a second chance**. The court also said this is not an **"indefeasible"** (incapable of being annulled or voided) right of a convict.
- The convicts **can approach the Maharashtra government for remission in the future**. Whether remission is granted will, however, depend on various aspects, including the remission policy of the State.
- Ordering *status quo ante*, SC reasoned that for the **convicts to apply for remission again, they had to be back in prison first**.

**Issues involved:** The Gujarat government's premature release of the 11 convicts raised serious **legal and moral questions**.

- **Criminal Procedure Code (CrPC):**
  - It stipulates that the State Government, when **considering remission** applications, should be **Maharashtra**, where the **sentencing occurred**, not Gujarat, where the offence occurred, or jail term was served.

The 1992 Remission Policy vs the 2014 Remission Policy		
Factors	1992 Policy	2014 Policy
Conduct in prison	✓	✓
Fourteen years criteria	✓	✓
Seriousness of crime	X	✓
Opinion of Presiding Judge of convicting court	X	✓
Guidelines of Laxman Naskar	X	✓
National security threat	X	✓
Excluded prisoners convicted for crimes investigated by a central agency, group murders, murder with rape, and gang rape.	X	✓

- It also requires the **presiding judge's opinion** to be obtained before considering the remission petition, which was not followed in this case.
- **Laxman Naskar vs Union of India (2000):** The SC had laid down **five grounds** on which remission is to be considered.
  - Whether the offence is an individual act of crime without **affecting society** at large;
    - It would be preposterous to surmise that such a heinous crime does not impact the conscience of a civilized society.
  - Whether there is any chance of **future recurrence** of committing a crime;
  - Whether the **convict has lost his potential** to commit a crime;
  - Whether there is any **fruitful purpose of confining** the convict any more;
  - **Socio-economic condition** of the convict's family.
- **Sangeet vs the State of Haryana (2012):**
  - The SC held that a **convict** serving life imprisonment has **no right** to be **prematurely released after 14 years** in jail and that remission should be considered only on a **case-by-case basis**.
    - The **Union Home Ministry** issued an **advisory** in 2013 prescribing that remission should not be granted in a **"wholesale manner"**.

**PEPPER IT WITH:**  
Article 21, Rule of Law, Trial court, Remission policy 2014.

Gangrape is a crime against humanity. The Statute of the International Criminal Court prescribes a sentence of 30 years for crimes against humanity with no remission. By considering human rights and personal liberty, this verdict by SC is the triumph of the will of Bilkeesha Bano to fight for justice and the collective contribution of the women's movement, which has worked tirelessly in supporting her and articulating their vision of justice. This order has **reinforced the faith** in the **judicial system** and the **"rule of law"** by setting aside a blatantly perverse order that shook the conscience of society at large and women in particular. It is **expected** that the **Maharashtra Government** would follow the **guidelines** laid down by the SC in the **Laxman Naskar case**, under which such crimes that affect society **deserve no mercy**.

## PRE-SHOTS

### The Government of Union Territories (Amendment) Act, 2023

**News Excerpt:** The President gave her assent to The **Government of Union Territories (Amendment) Bill, 2023**, on December 20, 2023.

#### Objectives of the Act:

- Consequent to the enactment of the **Constitution (One Hundred and Sixth Amendment) Act, 2023**, similar provisions for providing reservations for women in the Legislative Assembly of the **Union territory of Puducherry** are also required to be made by Parliament by amending the **Government of Union Territories Act, 1963**.

#### Key Highlights of the Act:

The Act amends the **Government of Union Territories Act of 1963** and also provides for **establishing Legislative Assemblies** and constitution of **Councils of Ministers** for certain **Union Territories**.

#### Amendment by the insertion of new sections 3A and 3B:

- 3A includes:**
  - Seats shall be reserved for **women** in Puducherry's Legislative Assembly of the Union Territory.
  - As nearly as may be, **one-third** of the seats reserved for the **Scheduled Castes** in the Legislative Assembly of the Union territory of Puducherry shall be reserved for women.
  - As nearly as may be, **one-third** of the total number of seats to be filled by **direct election** to the Legislative Assembly of the Union territory of **Puducherry** (including the number of seats reserved for women belonging to the Scheduled Castes) shall be reserved for women in such manner as Parliament may by law determine.
- 3B includes:**
  - The provisions relating to the reservation of seats for women in the Legislative Assembly of the Union territory of Puducherry shall come into effect after an exercise of delimitation is undertaken for this purpose after the relevant figures for the first census taken after the commencement of the **Government of Union Territories (Amendment) Act, 2023** have been published and shall cease to have effect on the expiration of a period of fifteen years from such commencement.
  - Subject to the provisions of **section 3A**, seats reserved for women in the Legislative Assembly of the Union territory of Puducherry shall

continue till such date as Parliament may by law determine.

- Rotation of seats** reserved for women in the Legislative Assembly of the Union territory of Puducherry shall take effect after such subsequent exercise of delimitation as Parliament may by law determine.
- Nothing in **section 3A** shall affect any representation in the Legislative Assembly of the Union territory of Puducherry until **the dissolution** of the then-existing Legislative Assembly of the Union territory of Puducherry.

Thus, the Parliament has passed two Acts that seek to provide 33% reservation for women in the assemblies of **Jammu & Kashmir** and **Puducherry** named the **Government of Union Territories (Amendment) Act 2023** and the **Jammu and Kashmir Reorganisation (Second Amendment) Act 2023** respectively.

### Rules for allocation of symbols to unrecognized political parties

#### News Excerpt:

The Election Commission of India (**ECI**) introduced **new rules** for **allocating symbols** to Registered Unrecognized Political Parties (**RUPPs**).

#### About the new rules:

- RUPPs **must** furnish **audited accounts** of the **last three financial years**.
- They **must** furnish **expenditure statements** for the **last two elections**.
- Earlier, the RUPPs were given the signature requirement of the **authorized office-bearer** of the party, along with a separate **application form** for symbols.
  - Now, these details are being **made part** of the **application format for common symbols**.
- The **new rules** came into effect from **January 11** this year.

#### Earlier developments regarding RUPPs:

- In order to ensure transparency, in **2014**, the **EC** gave directions that **RUPPs** wanting to avail the benefits of having a common symbol have to submit proof of having filed up-to-date **contribution reports**, audited **annual accounts**, updated **election expenditure statements**, and their latest **organization details**.
- In **2022**, the ECI had **de-listed 86 non-existent RUPPs** and declared another **253 as 'Inactive RUPPs'**.

#### Registered Unrecognized Political Parties (RUPPs):

- These are **either newly registered parties**, those that have **not secured enough votes** in the assembly or general election to become a state party, **or** those that have **never contested elections** after being registered.

- Common symbols are provided to RUPPs based upon an **undertaking** that they would put up “**at least 5% of total candidates with regard to said Legislative Assembly election of a State**”.
- The EC receives the applications from RUPPs in prescribed proforma for allotment of symbols under **Provisions of Para 10B of the Election Symbols (Reservation & Allotment) Order, 1968**.

### Allotment of election symbols to political parties in India:

- The **ECI** is **responsible** for the **allotment of symbols**.
  - This is done under **The Election Symbols (Reservation and Allotment) Order, 1968**, which provides for specification, reservation, choice and allotment of symbols at Parliamentary and Assembly Constituencies elections.
- Symbols can be **either reserved**, i.e., **exclusive** to a recognized political party (having garnered a minimum amount of votes or seats at national or State level elections), **or 'free'**.
- **Recognized** national and State parties get **exclusive symbols**.
- **RUPP's** candidates can choose from **free, non-exclusive** symbols.
  - After being selected by parties, in subsequent elections, these symbols are **declared free again** for others to choose.

## Inland Waterways Development Council

### News Excerpt:

The first meeting of the **Inland Waterways Development Council (IWDC)** concluded in Kolkata to strengthen the country's Inland Water Transport (IWT) system.

### About the meeting:

- The IWDC was organized by the **Inland Waterways Authority of India (IWAI)**, the nodal agency for inland waterways in India, under the **Ministry of Ports, Shipping & Waterways (MoPSW)**.

### Main objectives of the meeting:

- To function as a dedicated institutional mechanism directed towards accelerating **the holistic development of inland waterways** and the associated IWT ecosystem for enhanced cargo, passenger movement and river cruise tourism by **enabling active dialogue and deliberation** between the States, Union Territories and the Center.
- **To boost economic activity and sustainability practices** in terms of non-fossil fuel-based vessel operations, among others.

### Key outcomes of the meeting:

- A successful platform for communicating the concerns and suggestions of the State/UT representatives to the Center and vice versa.

- MoPSW stressed upon the importance of State-level institutional structure and rules in ensuring that the planning and development of the State's Inland Waterway Ecosystem accounts for its unique characteristics and requirements.
- **The launch of Harit Nauka- Guidelines for Green Transition of Inland Vessels:**
  - It is about strong commitments towards furthering passenger transport through waterways in an environment-friendly and sustainable manner by promoting the **adoption of low-emission fuel as propulsion fuel for inland vessel operations (Green Vessels)**.
- **The launch of River Cruise Tourism Roadmap 2047:**
  - It focuses on four vital pillars: **Infrastructure, Integration, Accessibility, and Policy** for promoting river cruise tourism.
  - Over 30 possible routes and tourist circuits along inland waterways have been identified for further development.
- Most states also unanimously highlighted the need for **technical guidance and support from the Central Government** in expediting the development of their waterway system.
- Representatives from IIT Kharagpur presented a **computerized simulation of the working of an Open Pontoon system** developed by the institute to enable **faster pontoon operations**.
  - Pontoons are floating platforms that can be adapted to function in a multitude of ways during dredging operations.
  - The dredging industry uses pontoons as heavyduty work platforms for operations such as drilling, dredging, and heavy lifting, as well as for accommodations.

### About IWDC:

- The Inland Waterways Development Council was established in **October 2023**.
- The initiative aims to enhance cargo efficiency, streamline passenger movement, and boost river cruise tourism with active collaboration from states and Union territories.

## Hattee Community

### News Excerpt:

The State Government of Himachal Pradesh has issued a notification granting Scheduled Tribe (ST) status to the **Hattee community in the Trans-Giri area of Sirmaur district**.

### About Hattee Community:

- The Hatties are a closely-knit community known for their **traditional occupation of selling** homegrown

crops, vegetables, meat, and wool in **small-town markets called 'haat'**.

- Their homeland spans the **Himachal Pradesh-Uttarakhand border**, specifically in the **basins of the Giri and Tons rivers**, both tributaries of the Yamuna.
  - The Tons River demarcates the border between the two states.
- Presently, the estimated **population** of the Hatties stands at **around 3 lakh**.

#### Benefits of ST Status:

- As per the Census of 1931, STs are communities recognized as "**backward tribes**" residing in specific geographical areas in India designated as "**Excluded**" and "**Partially Excluded**" regions.
- Recently, the Government approved the inclusion of several communities in the list of STs from **Chhattisgarh, Tamil Nadu, Karnataka, Himachal Pradesh and Uttar Pradesh**, demanding the ST status for a very long period of time.
- The Constitution of India does not explicitly define the criteria for the recognition of STs. Initially, after independence, the definition used was based on the data from the Census of 1931.
  - However, **Article 366(25)** of the Constitution provides the process for defining STs, stating that they are deemed to be tribes or tribal communities or parts of such groups, as specified under **Article 342** for the purposes of the Constitution.
- The Constitution also contains specific provisions for administering and controlling Scheduled Areas and Scheduled Tribes.

#### National Commission for Scheduled Tribes (NCST):

- The NCST has been created by inserting the new Article **338A** in the Constitution of India.
- Article 338A, inter-alia, enjoins upon the NCST to monitor all matters relating-
  - to the safeguards provided for the Scheduled Tribes under the Constitution or under any other law or under any order of the Government, and
  - to participate and advise on the planning process of socio-economic development of the Scheduled Tribes and
  - to evaluate the progress of their development under the Union and any State and
  - to present to the President, annually and at such other times as the Commission may deem fit, reports upon the working of those safeguards.

### Delisting some Kuki-Zomi tribes in Manipur

#### News Excerpt:

The National Secretary of the Republican Party of India (Athawale) in Manipur **argued for including Meiteis in the**

**Scheduled Tribe (ST) list** by seeking the **exclusion** of certain **Kuki and Zomi tribes**.

#### Timeline of events:

- **Manipur High Court (HC)** directed the State government to recommend the **Meiteis' inclusion** in the **ST list** to the Centre.
  - The **key reason** for which Meiteis have demanded the ST status has been their **inability to own land** in the **forested hill districts**, where only STs can own land.
- The **ethnic conflict** between the **valley-based Meitei people** and the **hills-based Kuki-Zo (ST)** people began in 2023, triggered by the order of the Manipur HC.
- The **Centre** has **asked** the Manipur Government to examine a representation **seeking the delisting** of certain **Kuki and Zomi tribes** from the ST list of Manipur.

#### Key points of the representation:

- It argued for **including Meiteis** in the ST list by seeking the **exclusion** of certain **Kuki and Zomi tribes**.
- It raised objections against the inclusion of **three specific entries** in the ST list of Manipur -
  - Any **Mizo (Lushai) Tribes**
  - **Zou Tribes** and
  - Any **Kuki Tribes**
- The principal argument for excluding the above three entries has been that they are **not "indigenous"** to the land of Manipur.
- The representation claimed that there had been **no mention** of these particular tribes residing in the land of Manipur in **pre-Independence Censuses**.
- It also said that the ambiguity of "**Any Mizo (Lushai) Tribes**" and "**Any Kuki Tribes**" in the ST list has allegedly aided illegal immigrants from Myanmar and Bangladesh in obtaining benefits meant for STs in India.

#### Critical analysis of the representation's claims:

- The argument that these communities were not residing in the land of Manipur at the time the first Constitution (Scheduled Tribes) list was published in 1950 does not hold ground.
  - This order had listed three tribes for Manipur — "Any Kuki Tribe", "Any Lushai Tribe", and "Any Naga Tribe", under which respective **sub-tribes** were to be **subsumed**.
- There is **no empirical evidence**, as of yet, to show that the presence of these tribes' names in the ST list has aided any form of organized illegal immigration into Manipur.
- Representation's claim that neither of these entries was specifically recommended by the First Backward Classes Commission also does not hold ground.
  - The **First Backward Classes Commission** had recommended that for **tribes of Assam** and the

hills of **Manipur**, individual tribe names be added to the ST list instead of umbrella tribes.

- Subsequently, when the ST list for Manipur was revised in 1956, it **included 29 entries** with individual tribe names —“Any Mizo (Lushai) Tribe” — was retained. This list also **included** the tribe “**Zou**”.
- To reconcile the argument of whether whole tribe names or specific tribe names should be on the list, the **Lokur Commission** had, however, chosen to **classify tribes** as a **larger group with sub-tribes**, including synonyms.

## Protection of Nomadic tribes (NTs), Semi-nomadic tribes (SNTs) and De-notified tribes (DNTs)

### News Excerpt:

The National Human Rights Commission (NHRC), during an Open House Discussion on “**Protection of NTs, SNTs, and DNTs in India and forward trajectory**”, stressed the need to implement the **Idate Commission** report.

### De-notified tribes (DNTs), Nomadic tribes (NTs) and Semi-nomadic tribes (SNTs):

- De-notified tribes (DNTs) are communities that were ‘**notified**’ as being ‘**born criminals**’ during the British regime under a **series of laws**, starting with the **Criminal Tribes Act of 1871**.
- **NTs and SNTs** are those communities that **move from one place to another** rather than living in one place all the time.
- The **Renke Commission** estimated their population at **around 10.74 crore** based on **Census 2001**.
  - Around **1,262 communities** are identified as de-notified, nomadic and semi-nomadic.
- While some of these tribes are categorized under SC, ST and OBC, many are not.
  - The **Standing Committee report in Parliament** has cited that **269 DNT communities** are not covered under any reserved categories.

### National Human Rights Commission (NHRC):

- It is a **statutory body** established by the **Protection of Human Rights Act (PHRA), 1993**, as amended by the Protection of Human Rights (Amendment) Act, 2006.
- It is in **conformity** with the **Paris Principles** adopted in 1991 and endorsed by the **General Assembly** of the **United Nations**.

### Idate Commission’s recommendations:

- **Permanent Commission:** It recommended setting up a permanent commission for Nomadic, semi-nomadic, and De-Notified Tribes (NTs, SNTs, and DNTs) in India.

- **Separate Department/Directorate:** It is recommended that a separate Department/Directorate for DNT/NT communities may be set up in each State where they have a sizable population.
- **Removal of Anomalies:** DNT/NT communities should be notified at least as OBCs subject to the report of ethnographic studies on them and after following the due procedure, as some of the DNT/NT communities have been left out of all 3 categories - OBCs, SCs and STs.
- **Census:** The results of the caste-based census 2011 be released **selectively**, at least with respect to the DNT/NT communities; alternatively, these data should be made available to the Central/State Governments, which would be useful in formulating policies for these communities.
- **Due representation:**
  - The President should nominate **at least one member** of the DNT/NT communities to the Rajya Sabha.
  - Similarly, at least one member of these communities should be nominated by the Governor to the **Legislative Assemblies/Councils of the States** where they have a significant presence.
  - The District Collector should nominate at least one member of these communities to the **District Panchayats and the intermediate Panchayats** where they have a significant presence.
- **De-stigmatization:** The commission also maintained that the Government must act to repeal **the Habitual Offenders Act, 1952** and if not, the appointment of a representative of the De-notified Tribe community with the nodal officers as stipulated in the Act.

### Other Commissions and their recommendations:

- The **Kalelkar Commission (1953-55)** suggested that these erstwhile tribes should **not be called as ‘Criminals’ or ‘Ex-Criminals’ tribes but as De-notified communities (Vimochit Jatijan)**. It recommended measures that included providing basic education to their children, training them in crafts and arts, cottage industries, etc.
- **Lokur Committee (1965)** recommended that a **separate state-wise list** be made for these communities and suggested separate developmental programs for them as most of the schemes designed for SC and ST did not benefit them.

### Issues regarding Nomadic tribes:

- The **colonial mindset** about the DNTs having “**criminal tendencies**” has made them vulnerable; as a result, their **human rights** are frequently violated.
- They lack **citizenship** documents, which makes their identity invisible and causes **hindrances** in obtaining

government benefits and constitutional and citizenship rights.

- NTs, SNTs, and DNTs lack proper means of livelihood.

#### Recent government initiative:

**SEED** (Scheme for Economic Empowerment of DNTs) scheme:

- It aims to provide them with free competitive exam coaching, health insurance, housing assistance, and livelihood initiatives.
  - An amount of ₹200 crore has been allocated for this scheme — to be spent over five years from FY2021-22 to FY2025-26.

## Indian Media

### News Excerpt:

The **fourth pillar of Indian democracy** serves simultaneously as a witness, prosecutor, judge, jury, and executioner.

- In ancient India, the accused was put to trial known as Agnipareksha, i.e. trial by fire. In today's India, the accused, known as a Media Trial, is put to trial.

### Current status of Indian Media:

- Driven by the “**breaking news**” culture and the search for the villain of the day media seems to have abandoned any pretence of performing a public

service, with stories emphasizing sensation over content.

- **Print media is also under pressure to publish without the customary recourse to fact-checking.**
- In its eagerness to air the news, Indian media has **succumbed to the unavoidable rush to judgement**, becoming a **willing collaborator to the motivated leak and malicious allegation.**

### Towards better journalism:

- **Engender a culture of fact-verification and accuracy:**
  - Journalists should **not feel pressed by their employers to “break the news”** but should be empowered to hold stories until they are sure their facts and accusations are accurate.
- **Better journalistic training:**
  - This training must emphasize the values of accuracy, integrity and fairness in their students.
  - When false claims are published or broadcasted, TV and print news outlets should issue retractions with equal prominence.
- **Building the culture of adopting different perspectives in the newsroom:**
  - **Newsrooms must not force an opinion onto their viewers** in the guise of “the nation wants to know”.
  - **More diverse journalistic environment:** Every story plugging a point of view must be required to provide some space for the alternative view or for a refutation.
- **Creating an environment of trust between the consumers and the media:**
  - Journalists must **welcome comments and feedback from their viewers and readers** to generate an environment of trust among the public.
- **Appropriate framing of laws and regulations:**
  - The Government must **introduce laws and regulations that limit control of multiple news organizations by a single business or political entity**, thereby encouraging an independent and robust press in the country.
  - **Designating single overseer for print and television news companies to limit the power of corporate and political behemoths** over our media and **help promote media standards.**





## SOCIAL ISSUES

### An ambitious push for values ethics in higher education

#### News Excerpt:

A survey of human resource managers has highlighted unethical practices in various higher education institutions (HEIs).

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#### What is the present Ethical issue in the Indian Higher Education System?

- Issue with Human Resources:** According to the survey, **human resource managers** highlighted unethical practices in various organisations.
  - The most prominent are favouritism and gender discrimination in hiring, training, pay and promotion; sexual harassment; gender discrimination in promotion; inconsistent view on discipline; lack of confidentiality; gender differentiation in compensation; non-performance factors overlooked in appraisals; and arrangements with vendors for personal gain.
  - Associations and unions** of teachers, staff and students have often been banned and suspended on the slightest pretext.
  - Office-bearers** and **elected representatives** have generally been accused of violating the code of conduct and acting against the interests of their institutions.
- The dilemma with the Right to Information:** The emphasis on the need for and the importance of **maintaining the confidentiality of information** is bemusing as it runs counter to the '**Right of Information**' as an instrument to ensure accountability.
  - Higher education institutions** are not voluntarily disclosing critical information and are not subjecting themselves to public scrutiny.

#### About Mulya Pravah 2.0:

- Mulya Pravah 2.0**, a modified version of Mulya Pravah, which was notified in 2019, seeks to inculcate human values and professional ethics in higher education institutions issued by the **University Grants Commission (UGC)**.

- Aim:** To build value-based institutions by orienting individuals and institutions towards developing a deep respect for fundamental duties and constitutional values and bonding with the country.


- Mulya Pravah 2.0** stresses the criticality of 'encouraging persons at all levels to think and give their advice freely.

#### How can Mulya Pravah 2.0 help HEIs?

- Emphasis on transparency**
  - Better decision-making:** Mulya Pravah 2.0 highlights that decision-making in higher education institutions must be solely guided by institutional and public interest and not be vitiated by biases.
  - Preventing Discrimination:** It seeks to abolish the discriminatory privileges of officials and urges the administration to punish the corrupt.
  - Builds Constitutional Values:** Mulya Pravah 2.0 expects HEIs to 'ensure integrity, trusteeship, harmony, accountability, inclusiveness, commitment, respectfulness, belongingness, sustainability, constitutional values and global citizenship'.
  - Builds Conducive Culture:** It reminds the staff to act in the best interest of their institution, create a conducive culture and work environment for teaching, learning, and research and develop the potential of their institution.
- Solving the Issue of Confidentiality:**
  - Restoring Public Confidence:** Mulya Pravah 2.0 urges HEIs to promptly upload agendas, proceedings and minutes of the meetings of their decision-making bodies, sub-committees and standing committees.

## MULYA PRAVAH 2.0

### Inculcation of Human Values and Professional Ethics in Higher Education Institutions



University Grants Commission  
Ministry of Education  
Government of India, New Delhi

**THE PRESENT POLICY FRAMEWORK, STRUCTURED IN FIVE PARTS**

**FIRST PART**  
The first part elaborates the objectives and possible outcomes of establishing a value-based environment charged with professional ethics

**SECOND PART**  
The second part delves into the conceptual framework of human values and professional ethics. An academic institution is built upon the pillars of its various stakeholders.

**THIRD PART**  
The third part elaborates the value-based and ethical practices of various internal and external stakeholders.

**FOURTH PART**  
The fourth part, while suggesting the operational guidelines, emphasizes the implementation and monitoring of the relevant programmes.

**FIFTH PART**  
The fifth part recognizes that human values and ethics need to be nurtured and fortified; therefore, the document indicates ways to reinforce the culture of values and ethics in institutions.

- **Building Unions and support:**
  - Mulya Pravah 2.0 expects staff and student unions to 'support the administration in development activities and raise issues in a dignified manner'.

#### Way Forward:

- **At the Administrative level:** The authorities and officers of universities must ensure that the provisions of acts, statutes, ordinances, regulations and **Mulya Pravah** are strictly adhered to in letter and spirit.
- **At regulatory levels:** The higher education regulator(s) must demonstrate zero tolerance and act swiftly to quell even the smallest trace of corruption in the admission, examination, and hiring processes or, for that matter, in any aspect of university administration.
- **Need to analyse Nobility and Professional Ethics:** Teachers should 'act' as role models and set examples of 'good conduct, and a good standard of dress, speech and behaviour, worth emulating by students'.
- **Need to Consult Stakeholders in Decision-making:** Each stakeholder must be allowed to proactively participate in protecting, preserving and promoting the culture and standards of their institutions.

#### PEPPER IT WITH:

EQUIP, TEQIP, Institute of Eminence (IoE), SHREYAS Scheme, UGC

## Need to examine the Examination System

### News Excerpt:

The education system significantly influences educational standards and certificates' credibility. However, reforms focusing on transparency and fairness are needed to ensure a credible examination process and enhance the quality of education.

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### Significance of Examination System:

- A well-designed examination system plays a significant role in **evaluating** the **knowledge, skills, and competencies** that students acquire during their education.
- It issues **certifications** that demonstrate their **academic achievements**.
- Examinations help **identify students' strengths and areas that need improvement, guiding teachers in customizing** their teaching methods to cater to the student's individual needs.
  - This approach ensures **assessment fairness** and **credibility** and **fosters confidence** among students, teachers, and society.

### Major Issues with the examination system:

- **Lack of credibility of the examination system in India:**
  - The media reports scandals that engulf some universities or even school boards every examination season. The credibility of the examination system is linked to the standard of the certificates that the examination/school boards issue.
- **Marks Inflation in India:**
  - Inflation of marks and achieving a very high pass percentage are the key objectives of the education administration. Consequently, the talent search cost for employers rises.

#### Way Forward:

- **Need for Participative and Transparent Assessment:**
  - Proper documentation and real-time oversight with a participative process of students' assessment of teachers should make it better.
- **Need to enhance Credibility:**
  - Software solutions can be used in every aspect of assessment, for both centralized and distributed systems of assessment, to enhance credibility
- **Need for Transparent Evaluation:**
  - Transparency in students' access to the evaluation process and measures to address their grievances should be in place.
  - An **external audit of assessment systems** in universities and school boards is essential. Such audit reports should cover all the processes based on established principles and benchmarks set by educationists.
- **Need to build healthy Competition:**

#### PEPPER IT WITH:

Higher order learning, Skilling Gap, audit of assessment systems, Higher Education Financing Agency

#### Statistics in India:

- With more than 1,100 universities, 50,000 affiliated colleges including 700 autonomous colleges and a total enrolment of 40.15 million students, India has numerous higher education examination systems with diversified modes of assessment.
- There are also 60 school boards for secondary and higher secondary levels of school education, certifying more than 15 million students every year.

- Grading examination boards in terms of transparency, reliability and consistency should be a part of audit reports. Such audit reports should be released soon after the completion of every major cycle of examinations.

**Assessment quality in India and its associated challenges:**

**Foundational issues:** All regulatory institutions in India emphasize on outcome-based learning. Although there are elaborate advisories on curriculum design, pedagogy, and examination systems from all the regulatory boards, educational institutions hardly follow these.

**Classroom quality and assessment issues:** The syllabi of every graduate/diploma program fulfills course objectives, expected outcomes, and even specifying the finer details of skills to be imparted. This does not meet the requirements of imparting higher-order thinking and skills.

**Maintaining secrecy in the examination process:** From question paper setting to evaluation of answer scripts and mark sheet preparation, the aspect facilitates malpractices that make a mockery of uniformity and confidentiality.

**Issues with Autonomic regulations:** Regulatory bodies encourage colleges to go in for academic autonomy and certify their students based on their examinations. Still, the degrees/diplomas that are conferred are on par with all others by the affiliating university. Autonomy regulations give little oversight authority to the affiliating university on the autonomous college examination system.

**Decentralized system in India and its associated challenges:**

**Secrecy and standardization:** Secrecy without **proper checks and balances and audits** leads to scandals. Standardization through uniformity in examination kills experimentation in assessment and curriculum.

**Imparting Practical Knowledge:** There are complaints that the examination boards test only memory. So, teachers coach students to memorize answers and score marks rather than teach them higher-order thinking.

**Higher order of learning:** Question papers with grave flaws such as language errors, errors in conceptualization, irrelevant questions, and questions that do not test higher-order learning. The evaluation of answer scripts is indiscriminate, and the grades do not reflect the differences in students' learning achievements.

**Employment issues:** Employers disregard institutional certification and have their rigorous assessment of a candidate's academic achievements and **suitability for employment**. This has created a coaching market for competitive examinations and skilling.

**Beyond Apps and Coaching classes**

**News Excerpt:**

Pradip Saha's recently released book "The Learning Trap" talks about the limitations of technology to set the broken system right.

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**Status of the Education System in India:**

- India's **public sector** accounts for about **15 lakh schools**, an estimated **95 lakh teachers** and about **26.5 crore** enrolled children.
- Quality varies with the **type of school**, catering to different **income segments**.
  - The **Kendriya Vidyalaya** and some other **government-managed schools**, once preferred

- by the elites, are attended by the lower-income groups because education is free.
- In **private schools** catering to the rich, school fees can range from Rs 50,000 to one lakh a month.
- Another category is the **missionary schools, aided schools** that get some government grants, and **private schools** catering to the lower and upper middle classes, where fees vary between Rs 2,000-40,000 per month.
- Notwithstanding the fees, the **quality of teaching** is, by and large, **poor** in all categories.
- According to the **Economic Survey 2022-23**, total education outlay, including both national and state level expenditure, added up to **2.9%** of the country's

2022 **GDP** – a proportion that has remained **constant** for the **last four years**.

- As per the **Education 2030 Framework for Action**, countries are expected to spend at least 6% of their GDP on education.

### Technology vs Education:

- **Technological fundamentalism** driven more by the markets than student needs has resulted in **curriculum revisions without the advice of experts**.
  - Such revisions do **not recognise** that much goes into the **process of learning**, i.e. fostering a hunger for knowledge and imbibing values of hard work and diligence for internalising lessons.
  - This is an **intense process** that requires **guidance**. All this is most vital at younger ages when habits set in and students cannot self-learn.
  - For example, **China banned** the use of **edutech for Classes I-VI**, but it hasn't deviated from approved school curricula to adopt remote teaching.
  - **In** the process of adopting remote teaching, India, on the other hand, has deviated from approved school curricula. Instead, loans and subsidies are being given for "technological innovations."
- The technology and apps have their limitations; **without good teachers**, they cannot guarantee outcomes.

### Commercialisation of Education:

- **The tuition industry** is reportedly valued at over **Rs 58 billion** and is expected to **double by 2028**.
  - Parents have been paying crores to this **parallel education system**.
- Tuition centres have emerged **due to a government policy** that has consistently **devalued** high school **examinations** by making national exams the only gateway to professional careers.
- The industry consists of **two categories** -
  - Focusing on cracking the **UPSC** and entrance exams for **IIT, NEET and IIM** and fees are as high as Rs 1,000 per subject per hour,
  - Providing **instruction to school children** is something that schools ought to have provided in the first place, and fees could range from Rs 10-40,000 per month depending on the teacher's quality and the parents' paying capacity.

### Challenges faced by the present education system:

- The education sector is in a state of crisis — in part due to reckless **commercialisation** and **politicisation**.
  - **Poorly trained** and often **poorly paid teachers** are **responsible** for the poor quality of teaching, resulting in the mushrooming of tuition centres and the use of apps.

- The **divide** between the "**well-educated**" (by and large from the already educated rich aspirational families) and the "**less educated**" (either first-generation learners or from modest backgrounds) is widening.
  - The **second category** of students keeps **growing**—they struggle to cope with a failed system.
- The government focuses on **tinkering** with **teaching** and **learning** materials without **innovative thinking**.
  - According to the **ASER Report 2023**, a **Class V student** can read only a **Class II text** and cannot construct a grammatically correct **sentence** in any language, and **79%** of the students in that class **cannot do a simple division**.
  - There is very **little monitoring**, with the government preoccupied with running its own schools.
- Increasing **tendency** among parents to **prefer tuition centres** to regular schools.
  - Even as reputed schools face **ghost classes** in Grades XI and XII, the unregulated, unsupervised tuition centres function from morning to evening.
- The pressure of **success** and humiliation of **failures** are resulting in stress-induced **suicides** and mental health problems.

### Way Forward:

- The education system must be rebuilt with a **step-by-step strategy** and a **national consensus** that commits to insulate it from narrow political considerations.
  - This requires not falling into the temptation to seek **easy solutions** — for instance, technology as a substitute for solid investments that are required to provide "**decent**" education. For this, governments have to **double the budget** for education and its **expenditure**.
- Making education the **business of society** and not the government alone. This could involve **reducing governmentalism** even as the state focuses on adherence to standards and outcomes.
  - **Social participation** can be widened to include senior citizens' energy and **skill base**, engage **civil society**, and seek out **volunteerism** instead of profiteers.
  - At the root of this change is the understanding that no growth or development is possible without educated people and a skilled workforce.

**PEPPER IT WITH:**  
ASER Report 2023,  
Education 2030 Framework  
for Action, Issues with the  
Coaching industry

## Gender Disparities in Financial Inclusion

### News Excerpt:

Gender disparities in India's financial inclusion emphasise the need for tailored services for women.

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### Financial inclusion:

- The term is broadly used to describe the provision of **banking and financial services to individuals** in an inexpensive and easy-to-use form.

- It aims to include everybody in society by giving them basic financial services regardless of their income or savings.
- Financial inclusion has been identified as an enabler for 7 of the 17 **Sustainable Development Goals (SDG)**.
- India has made great strides in financial inclusion. According to **Global Findex 2021**, bank account ownership in the country has **grown to 78%**.
- The value of the Financial Inclusion (FI) Index, which captures the extent of financial inclusion across India, improved to **60.1** in March 2023 **vis-à-vis 56.4** in March 2022.

### Challenges to financial inclusion for women in India:

#### Digital Disparities:

- Women, despite increased bank account ownership, face a significant gap in digital literacy and usage.
- Limited access to and familiarity with digital technologies hinder their ability to leverage the full spectrum of financial services.

#### Loan Approval Hurdles:

- If a woman applies for a loan to buy a two-wheeler, she is likely to be asked to bring along a male guarantor. This is commonplace in rural settings for banks to exercise caution when extending loans to women without the presence of a guarantor or collateral.

#### Under-representation in Financial Management:

- Women make up a meagre 16 % of management roles in financial services, according to the 2022 '**Mind the Gender Gap**' report by the CFA Institute.
- This leads to traditional socio-cultural norms and personal biases seeping into policy, product and process design.

#### Business Correspondent Gender Disparity:

- The Business Correspondent (BC) model was introduced to extend banking services to unserved areas.
- BCs have become the predominant delivery model for financial services. Unfortunately, less than **10%** of the BCs are women.

#### Credit Invisibility and Denial:

- First-time women borrowers are often denied loans from formal institutions because they do not have a credit history.
- While women tend to save more money than men, only 28 % use savings accounts.
- This credit invisibility keeps them out of the formal credit economy, pushing them towards informal sources with higher risks and interest rates, perpetuating financial exclusion.

#### Educational and Technological Barriers:

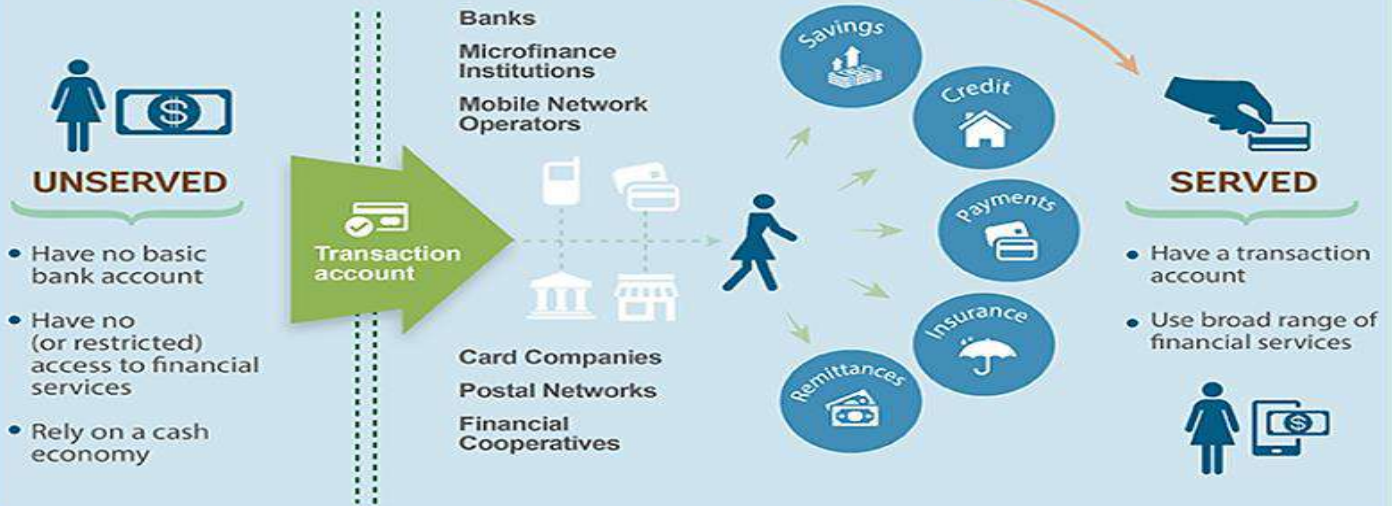
- Women face financial exclusion due to illiteracy, the absence of smartphones, and distant bank branches.
- This leads them to rely on cash, depend on friends/family, or resort to usurious moneylenders, making them susceptible to theft and exploitation and perpetuating the cycle of poverty.

#### Gender-Neutral System Flaws:

- Many financial systems suffer from the '**shrink it and pink it**' approach, lacking genuine understanding of women's needs and challenges.
- A gender-neutral design often fails to address the unique dimensions of financial inclusion for women.

# Gateway to Financial Inclusion

## How to get there?



## What's needed to get there?

- Broader inclusion
- Customer-centered product innovation
- Financial capability
- Strong consumer protection
- Better financial infrastructure
- More & interoperable access points
- Enabling legal & regulatory frameworks
- Public & private sector commitment
- Open & balanced playing field

### Way Forward:

- Women must be **recognized as a distinct sector** where we need to work on the entire fulfilment ecosystem – from hiring and distribution to technology, processes and policies.
- **Women have lower defaults**, tend to save more and make timely repayments compared to men. Designing for the invisible half of the population is not an act of generosity but a pathway to equitable economic prosperity.
- Introduce services that provide banking facilities at the doorstep, making it convenient for women, especially in remote areas.

**PEPPER IT WITH:**  
Financial Inclusion Index, Business Correspondent Model, SDG, Global Findex

### Draft norms look to make Railways more disabled-friendly

#### News Excerpt:

The Union government has **released draft guidelines on the accessibility of railway stations and train facilities for Persons with Disabilities (PwDs).**

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### Key highlights of the guidelines:

- **Website Features Tailored for 'Divyangjans':**
  - These features will follow **universal design principles and World Wide Web Consortium guidelines, integrating technology-enabled accessibility features** such as **text-to-speech and user-friendly pictograms.**
- **Mobile App and One-Click Template for Enhanced Information:**
  - **A dedicated mobile app and a one-click template** have been developed to display all the information and facilities available for PwDs at stations and in trains.
- **Inclusive Announcements and Signage at Train Stations:**
  - Credible announcements regarding facilities for disabled persons will be integrated into public announcement systems at train stations and platforms.
  - This includes **sign language, captioning, digital displays, standardised illuminated signage across all stations, and Braille signage.**
- **Enhancing Accessibility Infrastructure:**
  - **Frontline staff** will be trained in sign language to ensure effective communication.

- The guidelines call for **accessible entry and exit points, ramps and handrails, designated accessible parking areas with clear signage, low-height ticket counters with accessibility signage** and accessible **help booths** manned by **Divyangjan Sahayaks**.
- **Creating Unobstructed Zones and Specialized Facilities:**
  - The guidelines emphasized **creating unobstructed platform zones**, incorporating tactile guiding blocks, and **providing accessible toilets, drinking water booths, and foot-over bridges**.
- **Inclusive Train Coaches and Monitoring Mechanisms:**
  - **Integration of accessible features in new train coaches**, prominent signage, **Braille coach numbers, contrasting colours for exteriors**, and inclusive coach interiors with accessible toilets and seating arrangements are recommended.

#### Current status of Disability:

- **December 3** marks the International Day for Persons with Disabilities (**PwDs**). With around **1.3 billion people** globally living with **disabilities**, the majority residing in **developing countries** and **rural areas**, it underscores the urgent need for inclusive policies and actions that address the disparities they face, such as poverty, limited access to education, and discrimination.

**Challenges in Data Collection and Utilization:** Recent shelving of **socio-economic data** related to **PwDs** during Unique Disability ID (**UDID**) registrations raises concerns. **Quality issues** and **low response rates** led to the decision not to release crucial information, highlighting challenges in collecting comprehensive data for policy-making.

#### Government initiatives for the empowerment of Divyangjans:

- **DISHA (Early Intervention and School Readiness Scheme)**
  - It aims at setting up Disha Centres for early intervention for Persons with Disabilities (PwD) through therapies, training and providing support to family members.
- **VIKAAS (Day Care):**
  - This is a daycare scheme, primarily to expand the range of opportunities available to a person with

a disability for enhancing interpersonal and vocational skills as they transition to higher age groups.

- **SAHYOGI (Caregiver training scheme):**
  - It aims to set up Caregiver Cells (CGCs) to provide training and create a skilled workforce of caregivers to provide adequate and nurturing care for Persons with Disabilities (PWD) and their families who require it.
- **PRERNA (Marketing Assistance):**
  - Prerna is the marketing assistance scheme of the National Trust to create viable and widespread channels for the sale of products and services produced by Persons with disability (PwD) covered under the National Trust Act.
- **BADHTE KADAM (Awareness and Community Interaction):**
  - It aims to create community awareness, sensitisation, social integration and mainstreaming of Persons with Disabilities.

#### Structured Negotiation:

- Structured negotiation is a **method of problem-solving** where parties meet to **discuss and resolve issues** rather than going to court.
- In the case of disability rights, it helps in making things like **websites, machines, or services accessible**. It's a win-win approach as **companies avoid legal troubles**, and people with disabilities get **better access**.

#### Significance of Structured Negotiation:

- Structured negotiation emerges as a **potential solution to challenges** in Indian disability rights by offering an alternative to cumbersome legal processes.
- Facing increasing pendency and red tape in civil courts, the collaborative approach of structured negotiation allows defaulting service providers, like PayTM, to **avoid non-compliance labels and legal fees**.
- It empowers Persons with Disabilities to **directly engage with service providers**, ensuring effective, monitored implementation of accessibility fixes in real-time, addressing the unique challenges faced in the Indian context.

**Way Forward**

**Advancing rehabilitation services:**

- The **WHO's Global Burden of Disease** study indicates that 2.41 billion individuals require rehabilitation.
- Advancements in neuro-rehabilitation techniques aids **recovery** and **maximizes functionality** in post-traumatic brain injury, spinal injury, stroke, and other neurological conditions.
- **Need to broaden** rehabilitation services beyond specialist-led, narrow concepts to encompass diverse neurological and mental health conditions.
- **Community-based, multidisciplinary, and holistic approaches** ensure comprehensive care for individuals with disabilities.
- **Professional growth and training:** Empowering therapists, caregivers, and professionals involved in rehabilitation.

**Leveraging scientific innovations:**

- **Non-invasive** brain stimulation techniques like **rTMS** and **TES** show efficacy in treating conditions ranging from **depression** and **OCD** to **Parkinson's** disease and **schizophrenia**.
- **Evolving Treatments in the Post-COVID Era:** Treatments like transcutaneous auricular vagus nerve stimulation (**tA-VNS**) have emerged to address long-term COVID-19 symptoms and other conditions.
- **Enhance Early Detection and implement timely Intervention,** particularly in developmental conditions like **autism and ADHD (Attention Deficit/Hyperactivity Disorder)**.

**Fostering global collaboration:**

- **Private Sector's Role:** Engaging the private sector, **employer federations, and trade unions** promotes the employment and retention of individuals with disabilities, complementing **legal frameworks** for inclusivity.
- There is a growing need for a fundamental shift in global **commitment, solidarity, financing,** and action to prioritise the voices and needs of persons with disabilities at the centre of the global development agenda.
- The **2030 Agenda for UN Sustainable Development** has thus opened doors for the participation of persons with disabilities and recognition as active contributing members of society.
- Thus, the businesses in India **must prioritize disabled** users and embrace structured negotiation. It is time for a proactive stance, acknowledging the **importance of accessibility and compliance** for long-term success.

**Multidimensional Poverty in India**

**News Excerpt:**

According to a discussion paper released by NITI Aayog, **the share of India's population living in multidimensional poverty is estimated to have fallen.**

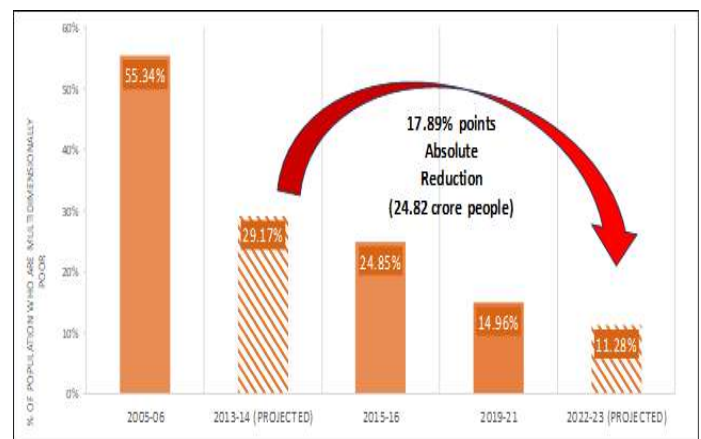
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**National MPI:**

- India's national MPI measure uses the globally accepted and robust methodology developed by the **Oxford Poverty and Human Development Initiative (OPHI)** and the **United Nations Development Programme (UNDP)**.
- **NITI Aayog**, as the nodal agency for MPI, has been responsible for constructing an indigenous index for monitoring the performance of states and Union Territories in addressing multidimensional poverty.
- **India's definition of multidimensional poverty** is measured using **12 indicators**, including nutrition, child and adolescent mortality, maternal care, years of schooling, school attendance, cooking fuel, sanitation, drinking water, electricity, housing, bank accounts and assets.

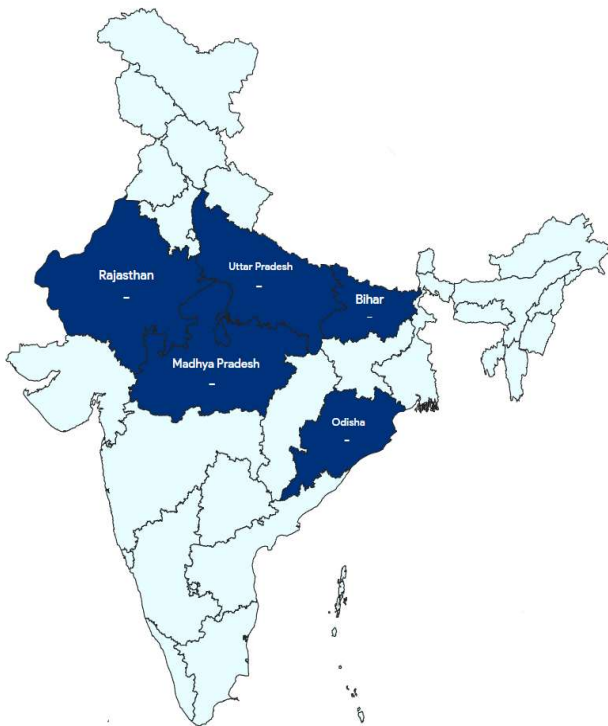
**Highlights of the report:**

- In absolute numbers, NITI Aayog estimates a total of **24.82 crore people** escaped multidimensional poverty in the **last nine years**.
- According to the Discussion Paper, India has registered a significant decline in multidimensional poverty from **29.17% in 2013-14 to 11.28% in 2022-23**, i.e., a reduction of **17.89 % points**.
- **Uttar Pradesh** registered the largest decline in the number of poor, with 5.94 crore people escaping multidimensional poverty during the last nine years, followed by **Bihar** at 3.77 crore, **Madhya Pradesh** at 2.30 crore and Rajasthan at 1.87 crore.





- According to the estimated share of MPI (Multidimensional Poverty Index) poor in 2013-14 and 2022-23, **Bihar recorded a 53 % drop** from 56.3 % share of MPI poor in 2013-14 to 26.59 % in 2022-23.
- In 2005-06, the share of MPI poor in India's total population was 55.34 %. The discussion paper uses previously released MPI data based on **National Family Health Surveys (NFHS)** conducted in 2015-16 and 2019-21, and also uses NFHS-3 data from 2005-06 to understand long-term poverty trends.
- As a result, India is likely to achieve its multiple **SDG targets** of halving multidimensional poverty well before 2030.



UP, Bihar, MP, Odisha and Rajasthan recorded the steepest decline in the number of MPI poor.

**Reasons behind declining multidimensional poverty:**

- Initiatives like **Poshan Abhiyan** and **Anemia Mukht Bharat** have significantly enhanced access to healthcare facilities, substantially decreasing deprivation.
- One of the world's largest food security programs, the **Targeted Public Distribution System** under the **National Food Security Act** covers 81.35 crore beneficiaries, providing food grains to rural and urban populations.

- Free food grain distribution will be extended under **Pradhan Mantri Garib Kalyan Anna Yojana** for another five years.
- Various programs addressing maternal health, clean cooking fuel distribution through **Ujjwala Yojana**, improved electricity coverage via **Saubhagya**, and transformative campaigns like **Swachh Bharat Mission** and **Jal Jeevan Mission** have collectively elevated people's living conditions and overall well-being.
- Flagship programs like **Pradhan Mantri Jan Dhan Yojana** and **PM Awas Yojana** have played pivotal roles in financial inclusion and providing safe housing for the underprivileged.

**Critical analysis of declining multidimensional poverty:**

- Post welfare transfers, deprivation in many dimensions has been considerably reduced.
  - The **moot question** is **how long** welfare support can continue. It is **not a long-term solution**.
- The **depth of poverty** should also be looked upon. It is **not correct** to apply uniform **calorie requirement norms** to all. The government should look **beyond food consumption**.
- Even the **World Bank** and **International Monetary Fund** estimates of Indian poverty differ by a wide **margin of 10 percentage points**.
- The **absence of household consumption data** blindsfolds current research.
  - Consumption data is used to estimate poverty prevalence and gain insights into wages, inflation and other indicators.
- In a **paper** written by economist Partha Dasgupta in the early 1970s. He concluded that if there is **only one thing** we must focus on, it is **life expectancy at age one**.

- It captures the quality of pre- and post-natal care, healthcare status, family income and well-being in general.
- India is slipping on **hunger and nutrition rankings**.
  - It was placed **111th out of 125 nations** in the **Global Hunger Index 2023**, signifying a severe hunger level.
- **COVID-19** interrupted the **education** of over **200 million children** with weak online access, setting them back by two years.
  - The current study of Niti Ayog doesn't take this **into account**.

**Way Forward:**

- The government should look for more stable **long-term strategies** for reducing poverty, such as **creating**

**jobs in the formal sector** and **increasing capital expenditure** and **social sector spending**.

- The **household consumption data** should be **included** in calculating multidimensional poverty. It will give a clear picture of the daily and monthly **wages and inflation**.

**PEPPER IT WITH:**  
National Food Security Act, Targeted PDS, PM Garib Kalyan Anna Yojana

- India's substantial **reduction** in the **poverty headcount ratio** reflects transformative government initiatives. There is a **need** for the **commitment** to **comprehensive development**, which will note improvements in all **12 MPI indicators**, showcasing holistic progress and positioning India to **achieve SDG targets** well before 2030.



## PRE-SHOTS

### Alliance for Global Good- Gender Equity and Equality

**News Excerpt:**

Recently, At the **World Economic Forum’s 54th annual meeting at Davos, Switzerland**, held from 15-19 January 2024, India participated in the spirit of “**Vasudhaiva Kutumbakam**”, aligning with the overarching **WEF theme for the year, 'Rebuilding Trust'**.

**Key Points of the Meeting:**

- One of the key takeaways was the announcement of the launch of a “**Global Good Alliance for Gender Equity and Equality**” with the support and endorsement of WEF and the Government of India.
- This year’s unique initiative at WEF, led by the Union Minister of Women & Child Development, was the first-ever women’s leadership lounge (We Lead lounge) by CII (Confederation of Indian Industry) and BMGF (Bill & Melinda Gates Foundation).
- The lounge hosted various panel discussions and meetings on “**Women-led Development**” themes, increasing women’s participation in the economy, bridging the digital gender gap, engendering women’s health, etc.

**Global Good Alliance for Gender Equity and Equality**

- The idea of this Alliance emerged from the G20 Leaders’ Declaration and India’s abiding commitment to the cause of women-led development.
- This new Alliance’s primary and stated objective is to **bring together global best practices, knowledge sharing and investments in the identified areas of women’s health, education, and enterprise.**
- The Alliance will be taking forward the commitments of the G20 leaders for the benefit of the larger global community as a follow-up to the activities of the Engagement Group and initiatives under the G20 framework, inter alia, the **Business 20, Women 20 and G20 EMPOWER.**
- Supported by the Bill and Melinda Gates Foundation, the Alliance will be housed and anchored by the CII Centre for Women Leadership.

WORLD ECONOMIC FORUM			
The World Economic Forum is the International Organization for Public-Private Cooperation.	It was established in 1971 as a not-for-profit foundation and is headquartered in Geneva, Switzerland.	It is independent, impartial and not tied to any special interests.	The Forum engages the foremost political, business, cultural and other leaders of society to shape global, regional and industry agendas.

- The World Economic Forum has become a ‘**Network Partner**’ and Invest India as an ‘**Institutional Partner**’.

### WHO guidelines for multi-modal Generative AI in Healthcare

**News Excerpt:**

Recently, WHO released comprehensive guidance on the **ethical use and governance of Large Multi-Modal Models (LMM) in healthcare.**

**About LMMs:**

- It is the fast-growing generative Artificial Intelligence (AI) technology, capable of processing diverse data inputs like text, videos and images, and is revolutionising healthcare delivery and medical research.
- LMMs are known for their ability to **mimic human communication and perform tasks without explicit programming** and have been adopted more rapidly than any other consumer technology in history.
  - Platforms like ChatGPT and Bard and Bert have become household names since their introduction last year.
- **Applications of LMMs in healthcare:**
  - **Diagnosis and clinical care**, such as responding to patients’ written queries.
  - Patient-guided use for investigating symptoms and treatments.
  - **Clerical and administrative tasks** in electronic health records.
  - Medical and nursing education with simulated patient encounters.
  - Scientific research and drug development.

**WHO Guidelines:**

- WHO called for a **collaborative approach** involving governments, technology companies, healthcare providers, patients and civil society in all LMM development and deployment stages.
- **Key recommendations for governments include:**
  - Investing in public infrastructure that adheres to ethical principles, like computing power and public datasets.
  - Using laws and regulations ensures LMMs meet ethical obligations and human rights standards.
  - Assigning regulatory agencies to assess and approve LMMs for healthcare use.
  - Introducing mandatory post-release audits and impact assessments.
- **For developers**, the WHO advises engaging a wide range of stakeholders, including potential users and healthcare professionals, from the early stages of AI development.
- It also recommends **designing LMMs for well-defined tasks** with the necessary accuracy and understanding of potential secondary outcomes.
- WHO emphasised the importance of **transparent information and policies** for managing the design, development and use of LMMs to achieve better health outcomes and overcome persisting health inequities.

## More Indians leaving the country

### News Excerpt:

The out-migration of the **poor**, the **professionals** and the **wealthy** has increased exponentially in the past decade.

### Migration as Need:

#### Poor vs Rich:

- The poor Indians are **jumping ship** and **bearing ordeals** in search of decent livelihood. They are becoming **victims of touts** and **middlemen**.
- Meanwhile, an increasing number of countries are **selling citizenship** to **wealthy** Indians.
- The country's wealthy, the so-called "**high net worth individuals**" (HNIs) -
  - buy **golden visas** to settle overseas.
  - Use their marketable talent to secure **work visas**.
  - Buy their overseas citizenship by **investing in the host countries**.

Out Migration of Poor:	Out-migration of High Net-worth Individuals (HNIs):
<ul style="list-style-type: none"> <li>• From November 2022 to September 2023, up to 96,917 Indians were arrested while crossing illegally into the US alone.</li> <li>• This compares with 19,883 Indians caught trying to sneak into the United States in 2019-20 illegally and 63,927 in 2021-22.</li> </ul>	<ul style="list-style-type: none"> <li>• The <b>London-based global citizenship and residence</b> advisory firm <b>Henley &amp; Partners</b> reported in 2022 that 7,500 HNIs had left India to take up residence and citizenship in a foreign country.</li> <li>• The global investment bank <b>Morgan Stanley</b> estimated that between 2014 and 2018, as many as 23,000 Indian millionaires had moved their principal home out of India.</li> </ul>

### Government statistics regarding out-migration:

- In Parliament, India's External Affairs Minister stated that **2,25,260** Indians had "**renounced** their Indian citizenship" in 2022.
  - This compared to 85,256 in 2020.
- Taken together, a **total of 16,63,440** Indians had renounced their citizenship in the period **2011-22**.
- In the first six months of 2023, the figure was already at 87,026.
- With over **20 lakh Indians migrating overseas yearly**, the regionally and professionally diversified Indian diaspora is now **close to 30 million**, and non-resident Indians are now more than non-resident Chinese.

### Reasons for out-migration:

- **Inhospitable conditions** at home encourage poor and middle-class Indians to migrate.
  - Equally, there is a desire for many to migrate to a **better, safer life**.

- The **global shortage** of people has created the demand for **Indian labour** and **professionals**.
- Fear of **harassment** by **government agencies** is driving wealthy Indians to go overseas.
- The rising demand for school education that enables **securing overseas admission** indicates the middle class's desperation to quit India.
- **Attractive citizenship policies** in host countries further add to the out-migration.
- **Liberal outward remittance** of foreign exchange has increased the number of Indians taking up foreign citizenship.

Pros of out-migration	Cons of out-migration
<ul style="list-style-type: none"> <li>• Overseas Indians are an asset, a "<b>brain bank</b>", as claimed by the Prime Minister.</li> <li>• <b>Inward remittances</b> into India have increased steeply to an all-time high of US\$125 billion last year.</li> <li>• A successful, prosperous, and influential <b>diaspora is an advantage</b> for India.</li> <li>• <b>Unemployment</b> is <b>reduced</b>, and young migrants enhance their life prospects.</li> <li>• Returning migrants bring <b>savings, skills</b> and <b>international contacts</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• The <b>money inflows</b> are <b>not matched by "brain inflows"</b> to justify the specious claim of overseas Indians being a "brain bank".                     <ul style="list-style-type: none"> <li>○ Knowledge inflows remain nebulous, if not elusive.</li> </ul> </li> <li>• Economic disadvantage through the <b>loss of young workers</b></li> <li>• <b>Loss of highly trained</b> people, especially health workers.</li> <li>• <b>Social problems</b> for children left behind or growing up without a wider family circle.</li> </ul>

## India's 1st ICU admission norms

### News Excerpt:

The Union **Ministry of Health and Family Welfare** has released the first-ever Intensive Care Unit (**ICU**) admission and discharge **guidelines**.

### Key highlights of the guidelines:

- **Nature of guidelines:**
  - The guidelines are **only advisory** in nature and are **not binding** on hospitals or doctors.
- **Intensivist or Critical Care Specialist:**
  - These have been categorised as specialists with specific **training, certification, and experience** in managing critically ill patients in an ICU.
  - But if doctors do **not** have the requisite **qualifications or training**, those with extensive experience in intensive care in India **after MBBS** —

quantified as **at least three years' experience in ICU** — can also work as an ICU doctor.

● **Monitoring Criteria:**

- Parameters such as **blood pressure, pulse rate, respiratory rate, breathing pattern, heart rate, oxygen saturation, urine output, and neurological status** are highlighted as critical indicators that should be continuously monitored for patients awaiting an ICU bed.

● **Admission Criteria:**

- **Inclusion list:**
  - Patients with an altered level of **consciousness** or with a recent onset **hemodynamic instability** — such as **shock** and irregular heartbeat.
  - Patients with acute illness requiring intensive monitoring or **organ support** should be given ICU care.
  - Patients with **medical conditions** or **diseases** anticipating **deterioration**, those who have experienced any major **intraoperative complication**, and those who have undergone a **major surgery** should be admitted.
- **Exclusion list:**
  - Hospitals cannot admit **critically ill patients** to the intensive care unit if they and their relatives **refuse** to do so.
  - Those with **low-priority criteria** in a **pandemic** or **disaster situation** with **resource limitations** should not be admitted to ICU.
  - Critically ill patients should not be admitted to ICU if any disease has a **treatment limitation plan**.

- Anyone with a **living will**, or **advanced directive** against ICU care and also terminally ill patients with a **medical judgment of futility** should **not** be admitted to the ICU.

● **Discharge Criteria:**

- The return of **physiological aberrations** to near **normal** or **baseline** status, reasonable resolution and **stability** of the acute illness that necessitated ICU admission, and patient/family **agreeing** for ICU discharge for a treatment-limiting decision or **palliative care**.

**Significance of guidelines:**

- India is a **diverse country**, and ICU care facilities are **not uniform** across **Tier 1, 2 and 3 cities** and in **remote places**.
  - Hence, these guidelines may **help define** who can be termed an **intensivist** and their **responsibilities**, apart from the broad criteria for **admission** and **discharge** in the ICU.
- Since ICU beds may be filled with those who are for terminal care, many patients with curable ailments may be **denied life-saving care**.
  - Following the latest advisory will **prevent such a scenario**.
  - These guidelines provide a **direction** as to which critical patient requires **ICU care**.
- The guidelines emphasise the **importance** of **obtaining prior consent** from patients or their relatives before admitting critically ill individuals to the ICU.

CENTREA	FOUNDATION COURSE	ADVANCE FOUNDATION COURSE 2 YEAR PROGRAMS	FOR ENQUIRY...	KSG Online Learning (KOL) Starting From... FOUNDATION COURSE 5 <sup>th</sup> Feb.
DELHI (R.N)	5 <sup>th</sup> February	Admission Open	9811293743	DESTINAIRE 2024 PRELIMS TEST SERIES Starting From... 29 <sup>th</sup> Jan.
DELHI (V.N)	26 <sup>th</sup> February	26 <sup>th</sup> April	9717380832	
JAIPUR	26 <sup>th</sup> February	Admission Open	8290800441	NAVIGATOR PRELIMS TEST SERIES Starting From... 19 <sup>th</sup> Feb.
BHOPAL	12 <sup>th</sup> February	25 <sup>th</sup> February	7509975361	
INDORE	Admission Open	Admission Open	9893772941	NEEV Live Class From... 19 <sup>th</sup> Feb. FOUNDATION COURSE WEEKEND BATCH Starting From... 1 <sup>st</sup> June
PATNA	Admission Open	_____	7463950774	
KOLKATA	Admission Open	_____	9007709895	8826002521 / 9811293743
BENGAKURU	19 <sup>th</sup> February	_____	7619166663	
HYDERABAD	Admission Open	Admission Open	7996066663	
IMPHAL WEST	5 <sup>th</sup> February	Admission Open	9650245599	

## ECONOMY

### Finance Commission & the Fiscal Maze

#### News Excerpt:

As the recently appointed 16th Finance Commission, led by **Arvind Panagariya**, takes charge, it is confronted with a daunting task, amplified by an unnoticed fiscal crisis and the delicate nature of federalism. India, a nation marked by rich diversity, grapples with a challenging fiscal situation that requires careful handling. **The Center's assertive stance, especially in limiting states' fiscal autonomy, emphasizes a growing trust gap between New Delhi and the states.**

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#### Status of fiscal well-being and future aspects:

- Impact on States:** There is the issue of trust deficit in action as states facing severe financial crises, like Kerala, express concern over reduced borrowing limits. The disparity between the Finance Commission's recommendations and practical fiscal manoeuvres is evident. Despite proposals for a fiscal consolidation plan, economic decisions seem increasingly influenced by politics.
- Imbalance and Political Influence:** The Center's hesitancy to align fiscal transfers with economic or social criteria raises doubts about the Finance Commission's intended purpose.
  - Examining tax devolution figures reveals a stark reality. During the pandemic year, states witnessed the lowest levels of tax devolution, forcing them to borrow extensively for healthcare and pandemic-related expenses.
- Unequal Growth Patterns:** Fiscal positions vary widely among states, with Bihar and Uttar Pradesh receiving substantial tax devolution shares based on their needs, while states like Haryana, Punjab, and Kerala see minimal growth despite contributing significantly to central government tax revenue.
  - This data highlights an imbalanced growth pattern, raising concerns about the effectiveness of fiscal policies in promoting equitable development.
- Debt Landscapes:** Exploring debt landscapes, **Mizoram** grapples with the highest debt-to-GDP ratio, followed by Punjab and Nagaland.
  - The 16th Finance Commission faces the challenge of formulating a fiscal consolidation strategy for high-debt states, necessitating a delicate balance between reducing indebtedness and addressing spending priorities.
- Center's Dilemma:** Lack of Foresight in Fiscal Approach is an area of concern. The broader narrative portrays a Center seemingly entangled in a fiscal dilemma.

- The existing approach to tax-based disbursements to states reflects a lack of foresight in supporting their welfare and growth requirements.
- Toward a Sustainable Economic Future:** Aligning Words with Actions will provide fruitful results. The erosion of the Center's fiscal capacity, regardless of the political parties in power, suggests a deeper issue of inefficiency in revenue collection.
  - Balancing devolution and consolidation, the 16th Finance Commission confronts the formidable task of shaping a fiscal trajectory that aligns with the diverse needs of the nation.

#### 16<sup>th</sup> Finance Commission:

The former Vice Chairman of NITI Aayog, **Arvind Pangariya**, has been appointed as the Chairman of the 16th Finance Commission.

- The Finance Commission, set up under Article 280, is a Constitutionally mandated body at the **centre of fiscal and cooperative federalism**.
- This panel will have an **open mandate**, unlike finance commissions in recent years, where the Centre provided a large set of terms of reference.
- The 16th Finance Commission will have less than two years to finalize its recommendations for five years, starting April 2025.
- The commission will submit its report for the **five-year period (2026-27 to 2030-31)** to the President by October 31, 2025.
- This time, the **government has also refrained from providing a base year for the Commission**, which uses population as a key parameter for working out the devolution formula.
- As India navigates its fiscal challenges, the true challenge lies in aligning words with actions, steering away from the spectre of a silent fiscal crisis toward a sustainable economic future.

#### To combat climate challenges, the Finance Commission needs to step up.

#### 16th Finance Commission's future steps to combating climate change issues:

- The Commission needs to metamorphose from a conventional fiscal arbitrator to an orchestrator of India's climate readiness. The country requires a fiscal blueprint that harmonizes economic growth with environmental imperatives.
- First, by making states' climate vulnerability and emission intensity a key parameter of the tax devolution formula**, the Commission can nudge action towards achieving India's NDCs under the Paris Pact. Much will depend on how the panel can

evolve a formula to ensure incentive-based performance.

- **Second, the FC could look at the possibility of performance-based grants for different sectors:** Sector-specific grants for key actions are critical for achieving the objectives of India's NDCs and SDG goals. Emissions reduction requires decarbonising the energy and transport sectors, sustainable land and forest management, and nudging people to make lifestyle changes. Given the severity of the pollution challenge, clean energy should be amongst the FC's priorities.
- **Innovations to tackle the seemingly intractable problem of crop burning will require funds.** So will mangrove restoration, a key necessity given the weather vagary-induced floods in recent times. At the same time, increasing dry spells have led to forest fires in several states. Such incidences are not part of the forest's regenerative cycle but a result of changing climate patterns. The FC has to find ways to become a part of the solution to this ecological challenge.
- **There is no shortage of studies that show the exact climate vulnerability of the different regions in India.** Moreover, policymakers are equipped with pollution inventories at different levels. Remote sensing data helps assess the degradation of ecosystems and understand forest fires.
  - Therefore, the experts at 16th FC can turn to science to ascertain both the vulnerability of states and how they are doing to mitigate them.
  - This can help them design a performance-based system for fund apportioning.

**Way Forward:**

As India navigates its fiscal maze, the real test lies in harmonizing rhetoric with action, steering away from the spectre of a silent fiscal crisis towards a sustainable economic future.

**PEPPER IT WITH:**

Finance Commission, Tax Devolution, Debt to GDP ratio

**Reforming Sovereign Credit Rating Process**

**News Excerpt:**

The Chief Economic Adviser's (CEA) office has published a report titled "Re-examining Narratives - a Collection of Essays", which has raised questions about the methodology of top rating agencies while rating a sovereign.

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**About the news:**

- Comments of the Chief Economic Adviser coincide with India **seeking to upgrade** its sovereign credit ratings as India has seen its economic metrics improve considerably since the pandemic.
- **S&P and Fitch rate India at BBB**, and **Moody's rates it at Baa3**, the lowest investment grade.
- The CEA says that to get a better rating, developing countries have to show progress in areas that might not be important, which is not fair.

**Credit Rating Agencies in India**

- In India, the **Securities and Exchange Board of India (SEBI)** primarily regulates credit rating agencies and their functioning.
- Credit rating agencies in India are **CRISIL, CARE, ICRA, SMREA, Brickwork Rating, India Rating and Research Pvt. Ltd, and Infomercials Valuation and Rating Pvt. Ltd.**

**What is Sovereign credit rating?**

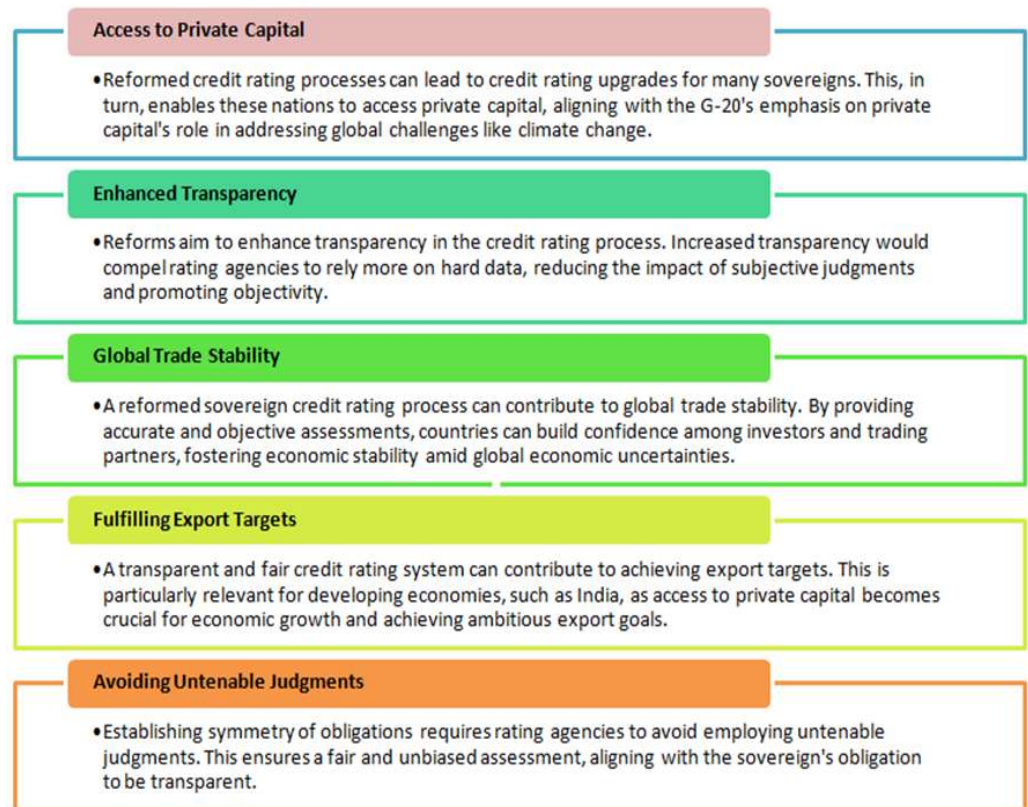
- It **measures a government's ability to repay its debt**, with a low rating indicating high credit risk.
- Typically, rating agencies use various parameters to rate a sovereign. These include **growth rate, inflation, government debt, short-term external debt as a percentage of GDP, and political stability.**
- Sovereign credit ratings, primarily by Fitch, Moody's, and Standard & Poor's (S&P), are important metrics for countries looking to raise financial resources through domestic and international financial markets.

- The **bandwagon effect** is a psychological phenomenon in which people do something primarily because other people are doing it, regardless of their own beliefs, which they may ignore or override.
- **Cognitive biases** are errors in thinking that affect people's decision-making in virtually every situation.

**Issues with the Present Rating System:**

- **Opacity in Methodologies:** The credit rating process suffers from a significant degree of opacity in its methodology. This lack of transparency makes it challenging to assess and quantify the impact of different factors on credit ratings.
- **Effect of Qualitative Factors:** The substantial presence of qualitative factors in credit rating methodologies leads to **bandwagon effects and cognitive biases.**

- Studies reveal concerns about the credibility of credit ratings due to the influence of **subjective elements on the assessment process**. For example, between 2020 and 2022, over 56% of the African countries rated by at least one of the big three agencies were downgraded, compared with 9% of the European nations.
  - **The dominance of Institutional Quality as a Determinant:** Institutional quality, often measured by the World Bank's Worldwide Governance Indicators, emerges as a crucial determinant. It creates a problem as these metrics are non-transparent, perception-based, and derived from a small group of experts, potentially leading to discriminatory outcomes.
  - **Arbitrary Indicators for Rating Upgrades:** Developing economies may need to demonstrate progress along arbitrary indicators to earn a credit rating upgrade. It imposes challenges, as progress may be measured against non-transparent and perception-based metrics.
  - **Non-Trivial Impact of Qualitative Component:** The qualitative component determines over half of the credit ratings. This reliance on qualitative factors complicates the process, making it less objective and potentially hindering accurate assessments.
  - **Increased cost of borrowing:** Negative warning announcements by credit rating agencies are linked to increased borrowing costs for developing countries.
- The Economic Survey 2020-21 on Sovereign Credit Ratings**
- **Call for Transparency and Objectivity:** The Economic Survey has called for sovereign credit ratings methodology to be more transparent, less subjective and better attuned to reflect an economy's fundamentals.
  - **Low Rating for Large Economies:** The Survey noted that never in the history of sovereign credit ratings has one of the largest economies in the world been rated



**FIGURE SIGNIFICANCE OF REFORMING SOVEREIGN CREDIT RATING PROCESS**

at the lowest rung of the investment grade (BBB-/Baa3) except in the case of China and India.

- **Fundamentals Not Reflected:** Further, it points out that India's sovereign credit ratings do not reflect its fundamentals. Within its sovereign credit ratings cohort, India is a clear outlier on several parameters, i.e. it is rated significantly lower than mandated by the effect on the sovereign rating of the parameter.
  - These include GDP growth rate, inflation, general government debt (as a percent of GDP), current account balance (as a percent of GDP), cyclically adjusted primary balance (as a percent of potential GDP), short-term external debt (as a percent of reserves), reserve adequacy ratio political stability, the rule of law, control of corruption, investor protection, ease of doing business, and sovereign default history.
  - This outlier status remains true for the current period and during the last two decades.

#### **Way Forward:**

Thus, the rating mechanism followed by credit rating agencies for developing economies needs serious reform, focusing on well-defined, measurable principles rather than subjective judgments on their ideas of governance.

#### **PEPPER IT WITH:**

Credit Ratings, External Debt to GDP ratio, Coanitive Bias, SEBI



## Default Loss Guarantee guidelines by RBI

### News Excerpt:

RBI issued the **Default Loss Guarantee (DLG)** guidelines.

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### What Is Fintech?

- Fintech refers to the application of software and hardware to financial services and processes, making them faster, easier to use and more secure.
- The fintech industry includes everything from payment processing solutions to mobile banking apps. Examples of fintech companies are Paytm, Lendingkart, Bharat Pe, PhonePe, etc.

### The guidelines are as follows:

- As per the guidelines, any arrangement between Regulated Entities (REs) and Lending Service Providers (LSPs) or between two REs involving DLG or First Loss Default Guarantee (FLDG) will have to adhere to these guidelines. These guidelines apply to **NBFCs, Commercial banks, Urban co-operative banks, State co-operative banks, and central co-operative banks.**
- The overall DLG cover under the upfront guarantee arrangements for any active loan portfolio shall **not exceed 5%** of that loan portfolio's value.
- The DLG provider shall not bear a performance risk of more than the **equivalent amount of 5%** of the underlying loan portfolio for implied guarantee arrangements.
- The RE will accept DLG only in **cash deposits, fixed deposits** maintained with Scheduled Commercial Banks, and lien marked in favour of RE.
- The Timeline for DLG invocation will be a **maximum overdue period of 120 days.**
- Disclosure requirements: The RE with a DLG agreement can publish their details on the website, like the total number of portfolios, number of portfolios, etc.

### First loss default guarantee (FLDG):

- In India, banks and non-banking financial companies ('NBFCs') are permitted to extend loans, whilst Fintechs such as lending service providers ('LSPs') specializes in ancillary functions such as customer acquisition, underwriting and pricing support, servicing, recovery and technological support and infrastructure.
- If banks and NBFCs are hesitant to extend loans in certain instances, the LSPs may guarantee a part of the loss (up to a certain percentage) if the borrower defaults in repayment.
- This concept in the digital lending space is called **First Loss Default Guarantee ('FLDG')** or **Default Loss Guarantee ('DLG')**.

### Way Forward:

- Formalizing this FLDG arrangement is a much-needed reform for the

### PEPPER IT WITH:

NBFC, Commercial & Non- Commercial Banks, Urban, Rural Coop Banks

whole ecosystem. Capping deposits at 5% helps spur the creation of innovative products in the country.

- It will also help the digital lending sector grow and facilitate all players' participation in this space.
- These guidelines specify details on scope, eligibility, structure, form, cap, disclosure requirements, and associated exceptions, as clarity was the most requested by the players in the sector.

## Risk of stagflation receding: RBI officials

### News Excerpt:

The Reserve Bank of India (RBI) has **reduced the risk of stagflation** to 1%, down from 3% in August.

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### About the news:

- The latest estimates, incorporating data up to **Q2: 2023-24**, assign a very **low probability of only 1%** to the risk of stagflation.
- The risk was assessed using **two approaches**:
  - Based on phases of **lower economic growth** and **high inflation.**
  - Using the **"at-risk" frameworks** - **"Inflation at Risk"** and **"Growth at Risk"** using quantile regression.
- Significant **determinants** of stagflation risk in India include **supply-side shocks** such as -
  - Spikes in commodity prices.
  - Tighter financial conditions.
  - Higher domestic currency depreciation.

### Supply shock:

- Stagflation is typically **initiated** by a **supply shock**, such as a disruption in the **oil supply** or a **shortage of essential parts**, as seen during the COVID-19 pandemic.
- This shock can impact **inflation, employment, and economic growth** and can be **triggered** by disruptions in **semiconductor flow**, affecting the production of various products, from **laptops to cars and appliances.**

### Poor Economic Policies:

- The confluence of **stagnation and inflation** results from poorly made economic policy.
- Harsh regulation** of markets, goods, and labour in an otherwise inflationary environment is cited as the possible cause of stagflation.

### Loss of the Gold Standard:

- Other theories point to **monetary factors** that may also influence stagflation.

FIGURE: POTENTIAL CAUSES OF STAGFLATION

**Stagflation as a destabilizing factor:**

- Stagflation, which could destabilize an economy by **creating uncertainty**, is a **major concern** for the Reserve Bank of India (**RBI**) as it maintains price stability and growth.
  - Stagflation **combines three negatives**: slower economic growth, higher unemployment, and higher prices.
  - **Policy solutions** for **slow growth** tend to worsen inflation and vice versa. That makes stagflation hard to fight.
- **Higher commodity prices** and the **appreciation of the U.S. dollar** post-pandemic have raised concerns about stagflation globally.
  - **Delays in monetary normalization** after the pandemic have also raised concerns about costly stagflation.

**PEPPER IT WITH:**  
Types of inflation, RBI, Monetary Normalization Philips Curve

**Way Forward:**

Stagflation has **no sure-shot remedy**. Economists generally agree that **productivity must rise** to the point where doing so will spur **faster growth without raising prices**. As a result, the **monetary policy** might be **tightened** to control the inflation part of stagflation. Since it is easier said than done, economic authorities must take **proactive measures** to avert stagflation.

**India's Textile Sector: ESG Challenges**

**News Excerpt:**

The Indian textile industry faces challenges from the EU's CBAM and ESG norms, prompting sustainability shifts.

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**Carbon Border Adjustment Mechanism (CBAM)**

- Carbon Border Adjustment Mechanism (CBAM) is a European Union (EU) regulation.
- The introduction of the CBAM significantly impacts businesses importing goods into the EU.
- The EU needs the Carbon Border Adjustment Mechanism to achieve its ambitious emission reduction targets and achieve climate neutrality by 2050.

The CBAM will tackle the risk of carbon leakage non-discriminatively and fully comply with WTO rules.

**More about the news:**

- There is a palpable concern in India's textile sector, dominated by small businesses, about the impact of new rules like the EU's **Carbon Border Adjustment Mechanism (CBAM)** and complying with **environmental, social, and governance (ESG)** norms.

- There is also recognition that this might be the moment to attempt a paradigm shift in sourcing, production, pricing and supply processes.

**Sustainable practices in India's textile sector**

Some sustainable practices that India's textile and clothing sector has invested in over the past two decades.

**For example:**

- The textile and apparel sector in Tamil Nadu contributes more than 50% of installed renewable energy capacity in the State; nearly 300 textile processing units in Tirupur are connected to common effluent treatment plants with zero liquid discharge.
- In Panipat, Haryana, open-end spinners use only recycled fibre, and India recycles almost 90% of its used PET bottles into the fibre.

**EU's Environmental, Social, and Governance (ESG) goals**

- The European Union (EU) has introduced the **CBAM** as part of its **ESG goals**.
- CBAM aims to address carbon emissions associated with imported goods by imposing charges on products from countries with lower environmental standards.
- This mechanism encourages adherence to **sustainable practices**, aligning with the EU's commitment to the European Green Deal.
- The CBAM rules impact India's textile sector, particularly **small businesses**, requiring compliance with stringent environmental norms to continue accessing the EU market.
- This underscores a need for a significant shift in the sector's sourcing, production, and supply processes.

**ESG challenges in India's textile sector:**

- **The hurdle for MSME:** The ESG challenges in India's textile sector are multifaceted. Dominated by Micro, Small, and Medium Enterprises (MSMEs), the sector faces significant hurdles in complying with ESG standards, especially those set by the EU.
- **Multifaceted challenges:** These challenges include the need for substantial investments in sustainability, documentation of sustainable practices, and the certification of compliance.
- **Need for paradigm shift:** The sector is urged to embrace a paradigm shift in various aspects, such as sourcing, production, pricing, and supply processes, to align with global sustainability demands. The transition is deemed a **"do or die situation"** by industry experts, emphasizing the urgency for the sector to adapt.
- **Additional costs:** The compliance and documentation processes come with additional costs, impacting MSMEs' already thin profit margins.
- **The reluctance of buyers:** The variation in ESG standards among individual European countries and the reluctance of buyers to support increased product



further paving the way for more textiles, natural and manmade, to hit the domestic market.

● **Inverted Duty Structure:** The **man-made fibre (MMF)** value chain in the textile industry faces an inverted duty structure, where taxes on final products are lower than taxes on inputs. This leads to an accumulation of input tax credits, causing business

prices further complicate the sector's transition to sustainable practices.

- **Balancing sustainability demands:** Despite positive strides and governmental support, the textile sector faces a crucial moment in balancing sustainability demands with economic viability and global competitiveness.

**Other issues facing the textile industry in India:**

- **Rise in price:** The sudden upward trend for man-made fibre or fabrics started in 2022, largely due to last year's **skyrocketing cotton prices**. This pushed many domestic small and medium units to compromise on quality to meet the domestic textile demand at a lower cost.
  - With the cotton crop expected to touch a 15-year low in 2023-2024, a rise in prices is anticipated,

working capital flow issues and a revenue outflow for the government.

- **Limited Market Access for Exports:** India faces a disadvantage in international markets due to duties imposed by importing countries. Unlike countries such as Bangladesh, Sri Lanka, and African nations, India does not enjoy duty-free access, making its textiles less competitive on the global stage.
- **Skill shortage:** The skill shortage in the Indian textile manufacturing landscape also warrants a mention.
- **Overdependence on manual labour:** It causes mistakes, oversights, and random negligence, resulting in suboptimal machine usage (**Utilisation of Machines**), frequent downtimes, and considerable loss of productivity.



**Textile Industry & Market Growth in India:**

- India exports 16% of its cotton textiles to the EU, 40% of its synthetic fabric, and about a third to 28% of its total apparel exports to European countries.

**Various Steps taken by India**

- The Indian government has taken several steps to address the challenges faced by the textile sector. The **Ministry of Textiles has formed an ESG task force** to consider supportive interventions for the industry.
- Industrial associations collaborate with organizations to help exporters implement systems, document measures, and obtain necessary certifications.
- The **Cotton Textiles Export Promotion Council** is promoting the Indian cotton **brand Kasturi** with traceability.
- Additionally, some financial institutions are reaching out to MSMEs to fund green and sustainable projects.

**Way Forward:**

- Collaboration:** To navigate ESG challenges, India's textile sector should intensify collaboration between government, industry, and financial institutions.
- Uniform ESG standards:** Emphasis on MSME support, streamlined certification processes, and uniform ESG standards can mitigate compliance hurdles.
- Education campaigns:** Industry-wide education campaigns can enhance domestic consumer awareness of sustainable practices, fostering a market for recycled materials.
- Diplomatic efforts:** The diplomatic efforts to align with EU exemptions for MSMEs in ESG norms and the creation of specific Harmonized System codes for sustainable exports would further fortify India's position as a global textile supplier.
- Strategic & unified approach:** A unified approach will enable the sector to thrive amid evolving global sustainability expectations.

**PEPPER IT WITH:**  
Inverted Duty structure, MSME, Kasturi Cotton

**India should reverse its tariff barrier uptrend**

**News Excerpt:**

India's trade policy reorientation in late 2019, away from the Regional Comprehensive Economic Partnership (RCEP) and towards the Western Free Trade Agreements (FTAs), faces criticism due to growing trade deficits.

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**Global challenges to free trade:**

- There are currently issues with free trade on a worldwide scale. A number of nations, mostly in the

**West, are raising trade barriers**, indicating a departure from the **ideals of free trade**.

- After three decades, globalization is running low due to geopolitical tensions, and the **World Trade Organisation (WTO) is perceived as largely ineffective**.
- Contentious negotiations have produced a patchwork of bilateral agreements rather than a coherent global market structure.

**Free Trade Agreements (FTA):**

FTAs are treaties between two or more countries designed to reduce or eliminate certain barriers to trade and investment and to facilitate stronger trade and commercial ties between participating countries.

**Regional Comprehensive Economic Partnership (RCEP):**

- Signed in 2020, the RCEP is a free trade agreement (FTA) between the then 10 member states of the Association of Southeast Asian Nations (ASEAN) and its five FTA partners- Australia, China, Japan, New Zealand and South Korea.
- India had also planned to join the deal but pulled out in 2019.

**Concerns about India's trade policy:**

- By walking away from the **RCEP** and focusing on **FTAs** with Western and West Asian economies, India aimed to boost exports.
  - India's rejection of RCEP can be explained partly by **Eastern FTAs having let us down**. They led to swelling imports from FTA partners without an equal upswell in Indian exports to their markets. Entering into RCEP could have risked even **larger imbalances for us**.
  - Critics argue that the asymmetry in tariff reductions, where **India lowered barriers more than its FTA partners**, created a mismatch, resulting in a growing influx of goods and little benefit for Indian exporters.
  - The move led to substantial **merchandise deficits**, especially with **ASEAN, South Korea, and Japan**. The **Global Trade Research Initiative report** reveals significant trade imbalances, with Indian exports unable to match the pace of imports.
    - From the pre-FTA period of 2007-09 to the recent two years of 2020-22 show that India's merchandise deficit grew by over **300% with ASEAN, 160% with South Korea and 138% with Japan** during that span of time, while the overall external gap went up only 81.2%.
  - This has prompted concerns about the **effectiveness and fairness of India's current trade strategy**.
- Other issues:**
- Inadequate industry and stakeholder consultation during negotiations led to a **narrow understanding of potential impacts**.

- **Complex certification requirements** and **rules of origin** hindered streamlined processes for exporters, increasing compliance costs on the Indian side.
- The government's **lack of post-implementation efforts** to popularize FTAs among industry stakeholders led to underutilization.

**Why should India consider a strategic reversal of its tariff barrier policy?**

- **Enhance competitiveness:** India should consider strategically reversing its **tariff barrier uptrend**. The emphasis should be on **reducing import tariffs** to enhance competitiveness and attract global investments, especially in the context of **evolving trade patterns**.
- **Align with India's broader goal:** Lowering barriers aligns with the government's broader goals, including **reducing friction, compressing logistical costs**, and boosting exports through other **enabling measures**.
- **Creating a level playing field:** The focus should be on creating a more level playing field, as indicated by the criticism of asymmetrical **tariff reductions in FTAs**.
- **Low-tariff economies & Global Value Chains:** This move supports the **global trend of low-tariff economies** and facilitates the attraction of **Global Value Chains (GVCs)** by minimizing input costs.

**Way Forward:**

Global trade patterns are in flux, but India should lower **import duties to sharpen domestic competitiveness**. By reconsidering its tariff policy, India can position itself more favourably in the dynamic and competitive global trade landscape, **fostering sustainable economic growth**. Strategic participation in multilateral forums and industry-driven negotiations should be focused upon to optimize all future FTAs.

**PEPPER IT WITH:**  
 Import Duties, FTAs, Global Value Chains, RCEP

**Rise of AI chatbots in India's Banking Sector**

**News Excerpt:**

The **Reserve Bank of India (RBI)** has released a report on **Trends and Progress of Banking in India 2022-23** that studies the use of Artificial Intelligence (AI) in banks and how it has grown over time.

**More details on the report:**

- An analytical study was conducted on banks' annual reports by the RBI staff between 2015-16 and 2021-22 to assess the level of awareness and readiness for adopting AI in Indian banks.
- This study employed a textual analysis method by matching keywords specific to the domain and utilizing named entity recognition techniques.

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- It leveraged widely recognized AI and **Machine Learning (ML)** dictionaries and glossaries from sources such as Google Vertex AI, Google Developers, IBM, NHS AI Lab, and the Council of Europe.
- Insights from Large Language Models such as ChatGPT and Bard were integrated into the analysis.

- **Machine Learning:** It is a branch of artificial intelligence (AI) and computer science that focuses on using data and algorithms to imitate how humans learn, gradually improving its accuracy.
- **Chatbot:** A chatbot is a computer program that simulates a human conversation with an end user. Though not all chatbots are equipped with artificial intelligence (AI), modern chatbots increasingly use conversational AI techniques like natural language processing (NLP) to understand the user's questions and automate responses to them.

**Chatbots take centre stage:**

- In FY17, **only 5 banks** had opted for this facility. This incrementally grew in the following years. Now, **26 banks** have this facility.
- Over **78.8%** of the banks have adopted this facility — i.e., **26 out of the 33** scheduled commercial banks analyzed.
- The share of PVBs with chatbots was significantly higher than the share of PSBs in FY17. However, the situation reversed in the following years, with the trend of large-scale mergers among the PSBs appearing to have influenced the adoption of chatbots, as merged entities often adopt the technology from their acquiring banks.
- According to the RBI study, **non-banking financial corporations** have also started introducing chatbots for customer services.

**AI's multifaceted impact:**

- The analysis using a word cloud indicates a significant emphasis by banks on automation.
- This trend likely stems from the goal of **improving efficiency** and enhancing capabilities in the **detection of fraud** and other forms of predictive analytics, the RBI study suggests.
- Notably, there is an **awareness or potential for adopting emerging technologies** such as Robotic Process Automation, the Internet of Things, and Natural Language Processing.
- A key application of AI in various service sectors is the use of chatbots, which **can engage in conversations** with **human** users in natural languages, either via text or voice.

**Risks and challenges:**

- The study ends with a cautionary note. AI in finance might heighten existing risks and introduce new ones, such as **consumer protection concerns**.

- The **opaque functioning of AI models** complicates compliance with laws, regulations, and internal controls in financial firms.
- The study warns that these models could trigger market shocks and amplify **systemic risks**, particularly in terms of procyclicality.

**Benefits of chatbots in banking:**

- **Automated support:** Customers can use banking chatbots 24\*7 to resolve a wide range of banking customer queries.
- **Personalized customer experience:** Chatbots can provide customers with their bank balances and, check account information and even make personalized product recommendations based on the customer's financial situation.
- **Self-service:** Whether it's checking account details or finding information on a specific branch, chatbots can help customers help themselves and complete a process quickly without needing to speak to a representative.
- **Reduced costs:** When customers can use chatbots to complete routine banking activities, banks can drastically reduce customer support costs.
- **Better understanding of customers:** Over thousands of conversations, chatbots can collect customer data to personalize services and guide future strategy decisions.

**Way Forward:**

Improved client experiences and increased efficiency are anticipated from the banking sector's rapid adoption of AI in India. Although possible risks should be considered carefully, the sector is well-positioned for future development and innovation due to its favourable influence on operations, risk management, and customer service.

**PEPPER IT WITH:**

Artificial Intelligence, Chatbots, Machine Learning, Large Language Models

**Concerns of Global investors regarding the Indian economy**

**News Excerpt:**

In a recent research note, economists at **Morgan Stanley**, which is one of the biggest and most influential investment banks in the world, detailed the three main concerns of the Indian economy.

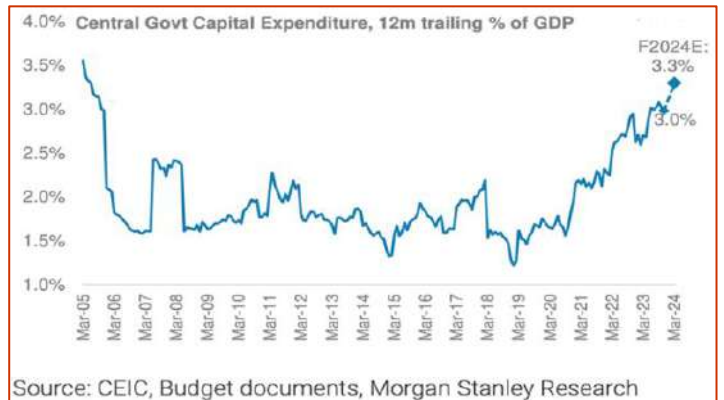
**Pace of India's GDP growth:**

- **Remarkable growth amid global struggles:** The pace of India's GDP growth has been a remarkable standout feature amid the global economic challenges. It surprised both domestic policymakers and international observers by positioning itself to grow by over **7%**, outperforming the expectations.

- **China's economic slowdown:** The year 2023 also saw China, which was until recently the main country receiving the attention of global investors, face an economic slowdown, further enhancing India's appeal.
- **Global investors seeking alternatives:** Since the start of the COVID-19 pandemic, global investors have started looking for ways to diversify into other economies in a bid to find China's substitute. There are several names across different continents, such as Mexico and Vietnam, but none of them come with the unique advantage of sheer size that India has.



- **India's dual attractiveness:** India's attractiveness is not just because it may be a production base that may substitute China but also because India can be a massive domestic market.
- **The engine of global growth:** With a considerable young population and the national ambition to make per capita incomes rise 5-6 times the current levels, India can be the next China, the next engine of global growth.



**Concerns global investors have about the Indian economy**

**1. Weakening private consumption demand:**

- **Concerns about Private Consumption:** Global investors express concerns over the sustained weakness in India's private consumption demand, a crucial driver of economic growth.
- **Weakness predating the pandemic:** The trend, evident since before the COVID-19 pandemic, has persisted, with recovery being sluggish, especially in the low- and medium-income segments.

- **Limited government support to households:** Unlike many European countries or the US, the government did not provide as much direct financial help to households in India. This meant that people either ran down their savings or cut expenditures.
- **Impact of Geopolitical Events:** The Russia-Ukraine war exacerbated the situation, leading to spiking inflation and eroding purchasing power, particularly in rural areas.
- **Uneven recovery across economic strata:** Even though the consumption levels among the rich Indians have recovered, the bulk of India still continues to struggle.

## 2. Government-led investment dominance:

This investment demand makes India's spectacular success in the current financial year. After private consumption demand, this is the second biggest engine of India's GDP, accounting for around **30% of India's GDP**. However, several issues remain:

- **Dominance of government:** However, concern centers around the dominance of government-led investment in driving India's economic growth.
- **Surge in Investment tied to public capital expenditure:** While investment demand, a significant contributor to GDP, has surged in the current financial year, much of it is attributed to robust public capital expenditure (CapEx).
- **Government's unprecedented Capex levels:** The central government's capex to GDP ratio reaching an 18-year high indicates substantial government involvement.
- **Limited private sector participation raises concerns:** Global investors worry about the sustainability of this growth model, as private sector participation remains limited.

### Capital Expenditure (CapEx)

- It is the money spent by the government on the development of **machinery, equipment, buildings, health facilities, education**, etc.
- It also includes the expenditure incurred on acquiring fixed assets like land and investment by the government that gives profits or dividends in the future.
- Capital spending is associated with investment or development spending, where expenditure has benefits extending years into the future.
- Capital expenditure, which leads to the creation of assets, is long-term in nature and allows the economy to generate revenue for many years by adding or improving production facilities and boosting operational efficiency.
- It also increases **labour participation**, takes stock of the economy, and raises its capacity to produce more in the future.

### Gross Fixed Capital Formation:

- The money that businesses and governments spend towards increasing the economy's productive capacity, say a building, a bridge, a factory, or buying new computers for the employees is called the "**investment demand**" (even more technically called **Gross Fixed Capital Formation or GFCF**).

## 3. RBI Policy:

- **Hawkish Stance of RBI:** The latest policy documents from RBI were somewhat hawkish, prompting some investors to ask what if RBI does not cut rates.
- **Disincentive effect of persistently high-interest rates:** When interest rates are low, it incentivizes businesses to borrow money from the banks and create fresh assets.
- By the reverse logic, persistently high-interest rates disincentive borrowing and drag down economic activity in the economy.

### Hawkish and dovish policy stances

- A hawkish policy stance favours **hiking interest rates aggressively**. The RBI may take a hawkish stance to keep inflation in check by raising the policy rate.
- Contrary to hawkish is the dovish stance, the RBI may **lower interest rates** or go slow in raising interest rates. This stance is taken when the country needs to push economic growth and avoid deflation.

### Optimism & risk of Indian economy growth prospect:

Despite the above concerns, Morgan Stanley's team remains optimistic about the Indian economy. It expects a virtuous growth cycle to be sustained – where capex **brings job creation, income, and productivity growth**, which in turn lifts consumption activity. Despite the optimism, the following are the risks to the Indian economy:

- **Electoral Reversals:** The key risk would be the emergence of a weak coalition government in the upcoming general election, which could result in a pivot back towards redistributive policies at the expense of the focus on boosting capex and implementing supply-side reform.
- **Geopolitical Tensions:** Several geopolitical tensions could disrupt global trade and investment flows. A slower world economy will also drag down India's growth, while a fast-growing global economy will work like booster jets.

### Way Forward:

India's growth trajectory is still encouraging despite concerns. It can produce a positive feedback loop of higher productivity, rising income, and job creation. By tackling issues like consumer spending and private sector involvement, India can establish itself as a robust engine of global economic growth.

**PEPPER IT WITH:**  
Stances of RBI, Types of Expenditure, Components of GDP

## PRE-SHOTS

### RBI defines a “Politically Exposed Person”

#### News Excerpt:

The Reserve Bank of India (RBI) has announced an amendment to the Master Direction (MD) on **Know Your Customer (KYC)** guidelines, aiming to redefine and provide clearer parameters for identifying **Politically Exposed Persons (PEPs)**.

#### New definition:

For KYC purposes, politically exposed persons (PEPs) are **individuals who are or have been entrusted with prominent public functions** by a foreign country, including heads of states/governments, senior politicians, senior government or judicial or military officers, senior executives of state-owned corporations and important political party officials.

#### Why did the need arise?

- In 2023, the Government of India amended the **Prevention of Money Laundering Act rules** to **incorporate more disclosures** on non-government organizations and PEPs by reporting entities.
- The open-ended term “PEP” was creating confusion among the banks.
- The parliamentarians and other **legislators had complained about the difficulty in obtaining loans** or opening bank accounts for themselves as well as their close kin.
- The institution must undertake customer due diligence if a bank or any regulated entity does business with a PEP. In such cases, the decision to open the account has to be made at a senior level.
- Screening for a politically exposed person (PEP) is a vital component of the Know Your Customer (KYC) process **due to increased potential risks.**
  - The heightened risks result from several factors associated with their **positions and potential vulnerabilities to financial crimes.**
  - Many PEPs hold positions that can be abused to **launder illicit funds** or other predicate offences such as **corruption or bribery.**

### BIS issues building regulations

#### News Excerpt:

The Bureau of Indian Standards (BIS) has issued ‘**Standardized Development and Building Regulations, 2023**’ to set forth a comprehensive framework to ensure safety, accessibility, and sustainability in construction.

#### More details about the news:

- Aligned with the **National Building Code of India 2016 (NBC 2016)** and drawing inspiration from best **global practices**, the regulations are published in a

special publication and mark a significant stride towards revolutionizing India’s built environment.

- The initiative involved an **exhaustive study of existing rules and regulations** nationwide and a comparative analysis of best practices governing land and building development.

#### National Building Code of India 2016 (NBC 2016)

- It is a comprehensive building Code prepared by BIS and is a national instrument providing guidelines for **regulating building construction activities** across the country.
- It serves as a **Model Code for adoption** by all agencies involved in **building construction** works, both public and private.
- The Code mainly contains **administrative regulations, development control rules, and general building requirements**; fire safety requirements; stipulations regarding materials, structural design, and construction (including safety in construction); building and plumbing services; landscaping and outdoor display structures; approach to sustainability; and asset and facility management.
- The Code gives all the information required by the **architect, engineer, structural engineer, construction engineer, services engineer, and other professionals** from early planning stages to translate the building on the ground.

#### Bureau of Indian Standards (BIS)

- It is the National Standard Body of India established under the **BIS Act 2016.**
- BIS has been providing traceable and tangible benefits to the national economy in several ways through standardization, certification, and testing which are as follows:
  - Providing safe, reliable, quality goods
  - Minimizing health hazards to consumers
  - Promoting export and import substitution
  - Control over the proliferation of varieties.

#### About the Standardized Development and Building Regulations, 2023

- The **document envisions a future** where regulatory bodies operate more transparently and efficiently, facilitating easy access to services provided by registered building professionals.
- The **document proposes ways** in which regulatory bodies can harness common rules and regulations to collect verifiable data, leveraging Information Technology for efficient service delivery.
- The **forward-looking nature of the regulations is evident** in their incorporation of innovative concepts,



including EV charging stations, wind electricity generators, transferable development rights, transit-oriented development, high-security areas, and retirement homes.

### Building Code Regulation in India

- In India, building regulations vary depending on the **state and jurisdiction**, but common building regulations are typically enforced across the country.
- Building codes and regulations in India are designed to ensure that buildings are constructed and maintained to protect the health and safety of occupants and the environment.
- The **National Building Code-2016 is a revised version** that has made significant changes in its guidelines to ensure building and occupants' safety, maintenance, and sustainability.

## SEBI's dilemma: Finfluencing & Free speech

### News Excerpt:

The Securities and Exchange Board of India (SEBI) has stepped in to protect small investors by proposing to bring a class of "unregistered financial influencers," now termed 'fin-fluencers,' under regulation.

### Who are Fin-fluencers?

- Finfluencers are **people with public social media platforms offering advice** and sharing personal experiences **about money and investment in stocks**.
- Their videos cover budgeting, investing, property buying, cryptocurrency advice and financial trend tracking.

### Key Points: Debate of Finfluencing and Free Speech

- A problem arises: **Where does free speech stand in this debate?**
- Even if motivated by money, offering a public opinion cannot be a crime. Audiences have to use their own judgment and cannot expect to be hand-held all the time.
- Also, where does financial inclusion stand, considering that a major effort is underway to give more people deposit and credit facilities and access to other saving instruments.
- Implicit in this is that someone will be guiding vulnerable classes on money matters in ways that may not necessarily be to their advantage; many such advisors may have directly related annual targets to meet.

### Major issues related to the regulation of finfluencers:

- The issue is that **finfluencers may have vested interests in making money by enticing followers to take a particular action**.

- Digitization is another issue, the Reserve Bank of India has a campaign asking people to be careful, but one can still fall into the trap of being duped through online links and calls. Ultimately one is told that caution has to be exercised, **the onus is on the individual to stay alert and away from scamsters**.
- In social media, one knows it is very hard to control what is circulated or consumed. While the SEBI's paper on the phenomenon asks registered entities not to have dealings with such finfluencers, tracking them is a challenge.
- **While protecting investor interest is necessary, a lot of information formally presented by mutual funds and insurance companies can be misleadingly influential.**

**Securities and Exchange Board of India (SEBI) has timely addressed this alarming call and has set out to draft guidelines for finfluencers.** It is pertinent to establish a quality check on finfluencers which ensures that individuals with sufficient educational and professional qualifications in the financial field can provide financial advice.

## Payments Infrastructure Development Fund (PIDF) scheme

### News Excerpt:

The Reserve Bank of India (RBI) has announced extending the Payments Infrastructure Development Fund (PIDF) scheme until December 2025.

### About the news:

- Initially launched in **2021 for three years**, this extension aims to continue fostering **financial inclusion** and supporting the country's payment infrastructure.
- Under this extended scheme, beneficiaries of the **PM Vishwakarma Scheme** nationwide have been incorporated as merchants eligible for deployment under PIDF.
- This move aims to diversify and broaden the range of supported payment acceptance infrastructure.
- Additionally, the **subsidy for specific focus areas**, including the **North Eastern states** and Union Territories of Jammu & Kashmir and Ladakh, has been **standardized at 90% of the device cost**, irrespective of the device type.
  - This uniform subsidy allocation aims to boost infrastructural development in these regions.

### About the PIDF scheme:

- The Payment Infrastructure Development Fund (PIDF) is a fund set up by the **Reserve Bank of India (RBI)** in consultation with major authorized card networks.

- The RBI is responsible for operationalizing the scheme, with the Chairman of the Payments Council of India at the helm.
- PIDF shall be governed by an ex-officio Advisory Council (AC).
- The PIDF scheme is designed to offer financial aid to banks and non-bank financial companies (NBFCs) to deploy point-of-sale terminals and other payment acceptance infrastructure.
- It will **facilitate the development of payment acceptance infrastructure in tier-3 to tier-6 cities and North-Eastern states of India.**
- The **UTs of Ladakh and J&K** will also get special focus under the scheme.
- This scheme is a part of the Government of India's efforts to **promote digital payments and reduce cash transactions.**

#### Objective of the PIDF scheme:

- This government initiative will allow merchants engaged in services such as transport and hospitality, government payments, fuel pumps, public distribution system (PDS) shops, healthcare and kirana shops to accept payments through debit and credit cards.
- The PIDF is generously **funded by the RBI** to the tune of Rs. 250 crores and card networks contributing Rs. 95 crores, bringing the total corpus to Rs. 345 crores.
- To ensure that the fund keeps growing, card networks have agreed to contribute 0.01 paisa per rupee of transaction each year, along with other contributions from card-issuing banks.

### RBI's guidelines on inoperative accounts and unclaimed deposit

#### News Excerpt:

The **Reserve Bank of India (RBI)** has updated guidelines on inoperative accounts and unclaimed deposits, targeting accounts with no customer-induced transactions.

#### More details on the news:

- The RBI has revised guidelines for classifying accounts and deposits as **inoperative accounts** and **unclaimed deposits** by banks.
  - **Inoperative accounts:** A savings or current account is treated as inoperative if there are no **'customer-induced transactions'** in the account for **over two years**.
  - **Unclaimed deposits:** Balances in savings / current accounts which are not operated for **10 years**, or term deposits not claimed within 10 years from date of maturity are classified as **'unclaimed deposits'**.

- **Exemptions** are granted for **zero-balance accounts** linked to government schemes or scholarships. Reactivation is possible through **know-your-customer (KYC)** submission at any branch or via video-customer identification.
- **No charges** can be levied for **reactivating accounts**, and there are no penalties for non-maintenance of minimum balances. The RBI ensures that **interest on savings accounts** will be **credited regularly**, regardless of the account's operational status.

#### Categorization of Direct Benefit Transfer (DBT) under Government Schemes accounts:

- Beneficiaries of State and Central **government programs and scholarship students** can create zero-balance accounts with the banks.
- These accounts are also **categorized as inoperative** since they have not been used for two years.
- To prevent the specification of **"inoperative"** accounts being applied to these accounts since they have not been operated for more than two years, the banks must separate the aforementioned accounts in their **Core Banking System (CBS)** according to the reason for account opening.

#### Why did RBI issue these guidelines?

- This move comes after the RBI launched the **"100 Days 100 Pays" campaign**, under which banks must trace and settle every bank's top 100 unclaimed deposits in every district.
  - The deadline for the scheme, which was to end on 8 September 2023, has now been extended to 1 **April 2024**.
- The move aims to **streamline account classification, enhance customer communication, and facilitate hassle-free reactivation** while safeguarding customers from unnecessary charges.

### REPORTS IN NEWS

#### World Employment and Social Outlook: Trends 2024 Report

#### News Excerpt:

As per the **World Employment and Social Outlook: Trends 2024 report** by the **International Labour Organization (ILO)**, there is a likelihood that **the worldwide unemployment rate** will rise in 2024. **Rising social inequalities and stagnant productivity remain the main causes of concern.**

#### More details on the report:

- The report stated that while joblessness and the jobs gap have decreased below pre-pandemic levels, **global unemployment is expected to rise in 2024**. On a positive note, despite the economic slowdown, global

growth in 2023 was modestly higher than anticipated, and **labour markets showed surprising resilience.**

- Real wage growth in **India and Türkiye was positive** compared to other G20 countries, but the available data refers to 2022 relative to 2021.
- The report warns that **weak productivity and inflation** lead to inequality. The **falling living standards**, weak productivity, and persistent inflation create the conditions for greater inequality and undermine efforts to achieve **social justice.**
- The **global unemployment rate in 2023 was 5.1%**, a modest improvement on 2022.
- Although the imbalances eased somewhat in 2023, concerns are rising that these labour market imbalances are **structural rather than cyclical.**

**Structural:** These changes can last for many years and can be **caused by changes in technology or shifting demographics.** They represent a **long-term shift** in how an economy functions.

**Cyclical:** These changes are caused by **economic downturns** or are related to business condition changes. **It is temporary,** rising and falling, along with contractionary and expansionary periods.

### About the World Employment and Social Outlook Report

- ILO releases **the report.** It examines the impacts of the crisis on **global and regional trends in employment,** unemployment and labour force participation, as well as on job quality, informal employment and working poverty.
- The report pays particular attention to the **impact of the different crises on productivity,** job quality and job opportunities and how these trends risk undermining social justice worldwide.
- It also offers an extensive analysis of trends in temporary employment **both before and during the COVID-19 crisis.**

### International Labour Organization (ILO)

- It was created in 1919, as part of the **Treaty of Versailles** that ended World War I, to reflect the belief that universal and lasting peace can be accomplished only if it's based on social justice.
- In 1946, the ILO became a specialized agency of the **United Nations.** Its unique tripartite structure gives workers, employers and governments an equal voice, providing a unique platform for promoting decent work for all women and men.
- The ILO is devoted to promoting social justice and internationally recognized human and labour rights, pursuing its founding mission that labour peace is essential to prosperity.

## World Economic Situation and Prospects 2024 Report

### News Excerpt:

In 2024, India is projected to grow at 6.2%, supported by robust domestic demand and strong growth in the manufacturing and services sectors, the United Nations report said.

### About the report:

- The World Economic Situation and Prospects 2024 is a report produced by the **United Nations Department of Economic and Social Affairs (UN DESA),** in partnership with the **United Nations Conference on Trade and Development (UNCTAD)** and the five United Nations regional commissions etc.
- The world economy faces multiple crises, jeopardizing progress toward **Sustainable Development Goals (SDGs).**
- In 2024, the world must seize the opportunity to create a more inclusive, resilient global economy that works for everyone, everywhere.

### Highlights of the report:

#### Global Economy:

- Global economic growth is **projected to slow** from an estimated **2.7% in 2023 to 2.4% in 2024,** trending below the pre-pandemic growth rate of 3%.
- The world economy proved more resilient than expected in 2023, however, it masks both **short-term risks and structural vulnerabilities.**
- Growth prospects for many developing countries, especially vulnerable and low-income countries, have **remained weak,** making a full recovery from pandemic losses ever more elusive.
- Global merchandise trade and industrial production remain **exceptionally weak amid cyclical and structural headwinds.** During the third quarter of 2023, the manufacturing Purchasing Managers' Index was in contraction territory in the world's largest economies **except India.**
- **Slowing global demand, unresolved trade tensions between the largest trading partners, and geopolitical conflicts are affecting trade flows in the short term.** The war in Ukraine and the sanctions imposed on Russia have also shaped global trade patterns.
- The report highlighted that climate change-related events continued to hurt the South Asian region in 2023. **Droughts** intensified considerably during July and August, affecting **most of India, Nepal, and Bangladesh,** while Pakistan recorded above-average rainfall.
- The **global labour market** displays divergent trends between developed and developing countries post-pandemic.

- **Global inflation**, a key concern over the past two years, shows signs of easing.
- **Debt sustainability** has emerged as a critical challenge, especially for developing countries, due to rising debt levels and changing global financial conditions

### Indian Economy:

- The UN revised **India's Gross Domestic Product (GDP)** growth forecast for the 2024 calendar year to **6.2% from 6.7%**.
- The report said GDP in the larger South Asian region **grew by an estimated 5.3%** in 2023 and is projected to increase by 5.2% in 2024, driven by a **robust expansion in India**, "which remains the fastest-growing large economy in the world".
- India's GDP is projected to **increase to 6.6% in 2025**. The 5.2% in 2024 would be mainly supported by **resilient private consumption and strong public investment**.
- **High levels of external debt and still-rising interest rates** constrain developing countries' access to financing in the international capital markets such as India and Brazil.
- In India, **labour market** indicators improved over the year, with labour force participation increasing in August to its highest rate since the onset of the pandemic.
- The **unemployment rate** averaged 7.1% in September, the lowest value in a year.
- The report noted that the **consumer price inflation** in India is expected to **decelerate from 5.7% in 2023 to 4.5% in 2024**, staying within the **two to six per cent medium-term inflation** target range set by the Central Bank.

## RBI's Financial Stability Report

### News Excerpt:

The Reserve Bank of India released the 28th issue of the Financial Stability Report (FSR).

**Highlights of the report:** The report reflects the collective assessment of the Sub-Committee of the **Financial Stability and Development Council (FSDC)** on risks to financial stability and the resilience of the Indian financial system.

### Details of the report are as follows:

- **The global economy faces multiple challenges:**
  - Prospects of slowing growth
  - Large public debt

- Increasing economic fragmentation
- Prolonging geopolitical conflicts
- The **Indian economy and the domestic financial system remain resilient**, supported by:
  - Strong macroeconomic fundamentals.
  - Healthy balance sheets of financial institutions.
  - Moderating inflation.
  - Improving external sector position.
  - Continuing fiscal consolidation.
- **CRAR & CET1 ratio**
  - The **capital to risk-weighted assets ratio (CRAR)** and the **common equity tier 1 (CET1) ratio** of scheduled commercial banks (SCBs) stood at 16.8% and 13.7%, respectively, in September 2023.
  - According to the report, the increase in risk weights addresses growth exuberance among lenders. Risk weights for NBFCs' unsecured loans were also increased.
  - Banks and NBFCs will be required to allocate higher capital for unsecured retail loans,
    - Which will improve their loss-absorbing buffers.
    - It will dampen growth exuberance among lenders and improve credit quality.

### Financial Stability Report (FSR)

- It is published by the RBI **twice a year** after the **Financial Stability and Development Council (FSDC)** Sub-Committee approves.
- It takes inputs from financial sector regulators i.e. RBI, SEBI, PFRDA, IRDAI including the Ministry of Finance.
- It is a periodic exercise for reviewing the nature, magnitude and implications of risks that may have a bearing on the macroeconomic environment, financial institutions, markets and infrastructure.

### Financial Stability and Development Council (FSDC):

- The Government set it up as the apex level forum in December **2010**.
- The **Chairman of the Council is the finance minister** and its members include the heads of financial sector Regulators (RBI, SEBI, PFRDA, IRDA & FMC) Finance Secretary and/or Secretary, Department of Economic Affairs, Secretary, Department of Financial Services, and Chief Economic Adviser.

## AGRICULTURE

### India's Great Grain Mystery

#### News Excerpt:

The economists and authors Jean Drèze and Christian Oldiges explore the perplexing factors contributing to the significant discrepancy between India's annual cereal production and consumption numbers.

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#### Production-Consumption Discrepancy:

- According to the official Foodgrains Bulletin, cereal **production** (mainly rice and wheat) crossed **300 million tonnes** for the first time in 2022-23, reaching 304 million tonnes.
- The three-year average of annual **production** in the most recent years for which data are available (2020-21 to 2022-23) comes to 292 million tonnes — close to 300 million.
- Combining the second **India Human Development Survey (IHDS-2)** and **National Sample Survey (NSS)** data, the **consumption** requirements are only about **200 million tonnes**.
- The authors tried to account for the **difference of about 100 million tonnes** between production and consumption.

Indian Human Development Survey-II	National Sample Survey (NSS)
<ul style="list-style-type: none"> <li>The India Human Development Survey-II (IHDS-II), 2011-12 is a <b>nationally representative, multi-topic survey</b> of 42,152 households in 1,503 villages and 971 urban neighbourhoods across India.</li> <li>These data are primarily <b>re-interviews of households</b> interviewed for IHDS-I in 2004-05.</li> <li>Each household's <b>interviews covered health, education, employment, economic status, marriage, fertility, gender relations, social capital, village infrastructure, wage levels, and panchayat composition.</b></li> <li>The goal of IHDS is to document changes in the <b>daily lives of Indian households</b> in an era of <b>rapid transformation.</b></li> </ul>	<ul style="list-style-type: none"> <li>The National Sample Survey Office (NSSO), headed by a Director General, is responsible for conducting <b>large-scale sample surveys in diverse fields on an All-India basis.</b></li> <li>Primarily, data are collected through <b>nationwide household surveys</b> on various socio-economic subjects, etc.</li> <li>NSSO also collects <b>data on rural and urban prices</b> and plays a significant role in improving crop statistics through supervision of the area enumeration and <b>crop estimation surveys</b> of the state agencies.</li> <li>It also maintains a frame of <b>urban area units</b> for use in sample surveys in urban areas.</li> </ul>

### Per Capita Cereal Consumption (PCCC) Trends:

- The PCCC trends in India reveal a perplexing scenario. The latest estimates from 2011-12 indicate figures of 11.6 kg per month (**India Human Development Survey-2**) and 10.7 kg per month (**National Sample Survey**).
- All data indicate a **steady decline in monthly PCCC** from the late 1970s onwards.
- The declining PCCC trend **challenges assumptions of rising poverty as the primary cause.** Instead, urbanization, increasing education levels, diversification of food intake, and potential reductions in activity levels are identified as factors contributing to this decline among **better-off sections of the population.**
- The evolving consumption patterns underscore the complexity of addressing the production-consumption gap in India's cereal economy.

### Economic Survey's Estimates and SFW Allowance:

- The Economic Survey's "**Net Availability**" estimates are inflated by an insufficient **seed, feed, and wastage (SFW)** allowance. The traditional allowance of 12.5% consists of 5% for seed, 5% for feed, and 2.5% for wastage.
- Independent experts have argued for some time that the 5% norm for feed is too low.
- Doubling the feed allowance from 5% to 10% of gross production would reduce the cereal gap by 15 million tonnes or so. **A large gap would still remain.**

### Other Uses of Cereals:

- Cereals are not solely consumed by households; they serve other purposes like **seed, animal feed, and industrial uses.**
- The mystery deepens whether cereal consumption is increasing due to the expansion of the public distribution system or if animal feed and industrial uses have surged, contributing to the gap.

### Way Forward:

Reducing India's cereal gap offers a chance for comprehensive policy reform to promote **strategic agricultural output**

#### PEPPER IT WITH:

Poverty, Diversification of Output, Sustainable practices, Food security

diversification. To ensure sustainable practices and match production with changing consumption patterns, this challenge has the potential to spark creative solutions that will ultimately improve the food security and economic health of the country.

## Can India become self-sufficient in producing dal?

### News Excerpt:

The government has launched a portal to boost pulse production, targeting **self-sufficiency by 2027** through farmer support and trade policies.

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### Launch of the new portal:

- The government launched a new portal where farmers growing pulses can register and sell their produce directly to central agencies at the **minimum support price (MSP)**.
- The promise of assured purchase through the portal addresses farmers' concerns about uncertain market conditions, encouraging increased cultivation.
- Economic benefits through direct sales at MSP may incentivize farmers to prioritize pulse cultivation over other crops. The move follows a spike in consumer prices, which were **18% higher year-on-year in November 2023**.
- Under the initiative, the produce of farmers who get themselves registered even before the production of toor dal will be procured by the **National Agricultural Cooperative Marketing Federation of India Ltd (NAFED)** and **National Cooperative Consumers' Federation of India (NCCF)**.
- A similar facility will also be unveiled for other pulses such as urad (black gram) and masoor (lentil).
- The government's clear goal of becoming a **net exporter of pulses by 2027** demonstrates a commitment to reducing import dependency.

### Pulses as Climate Smart Crop:

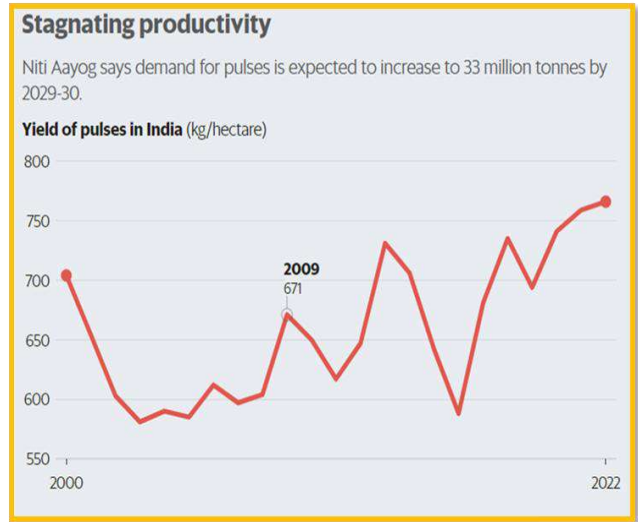
- Pulses are vital in developing sustainable food systems and are key players in food security and nutrition in India.
- The Global Pulse Confederation (GPC) emphasizes their significance in **developing sustainable food systems, addressing food security, and promoting nutrition**.
- Pulses are crucial in **reducing greenhouse gas emissions** and are adaptable to arid conditions, **requiring less water for cultivation**.
- As a superfood, pulses offer a **nutritious and healthy dietary choice**. Their **ability to fix nitrogen in the soil enhances soil fertility**, making them environmentally friendly.

### Challenges in Making India self-sufficient in Pulses

#### Current Supply Gap and Import Dependency:

- Production and Imports:** In the past few years production of pulses was estimated at 27-28 million tonnes. Imports were 2.5 million tonnes in 2022-23.

- Shortfall Impact in some varieties:** The shortfall is mainly in varieties like Arhar (pigeon pea), where lower production led to a surge in prices and imports. Other than pigeon peas, India also imports black gram and lentils.
- Government Intervention and Duty-Free Import:** To increase domestic availability and cool retail prices, the government has allowed the duty-free import of pigeon peas, black gram, and lentils till March 2025.
- Balancing Act:** While a higher supply of imported



pulses can help reduce local prices, it can also dissuade farmers from increasing the area under cultivation.

- Projected Demand Surge:** The Niti Aayog says demand for pulses is expected to increase to 33 million tonnes by 2029-30.
- Global seed giants:** The lack of interest from global seed giants in pulses indicates a potential hurdle, requiring India to invest more in public research for high-yielding varieties.

### Yield Challenges & Farmer Preference for Other Crops:

- MSP Influence on Crop Choice:** Farmers often hesitate to grow pulses due to their preference for crops like rice and wheat, which government agencies procure for the food security scheme at MSP.
- Economic Incentives and Profitability Concerns:** Convincing farmers to shift from traditional crops to pulses may require addressing economic incentives and ensuring profitability.
- Challenges with Specific Pulses:** Some pulses, like Arhar, are low-yield, long-duration crops, posing challenges to meeting the growing demand.

**Related: Global Meet on Pulses:**

- India will host a global meet on pulses in Delhi after 18 years. The 2023 convention was held in Sydney.
- The conference will feature discussions on global best practices of pulse production, processing and trade.
- Jointly organized by the National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) and the Global Pulse Confederation (GPC), the conference will see experts in the field sharing their views and experiences with various stakeholders and policymakers.

**Recommendations of Arvind Subramanian on pulses**

- In his 2016 report on incentivizing pulse production, Chief Economic Advisor **Dr. Arvind Subramanian** emphasized the need to boost domestic production to meet the rising demand.
- The report outlined key recommendations, including **increased procurement efforts for pulses like moong, toor, and urad at Minimum Support Prices (MSPs) and allocating additional funds for procurement agencies.**
- Efficient disposal policies, removal of stock limits and export bans, and revising MSPs for pulses were also proposed. Subramanian called for a review of the **Essential Commodities Act** to enhance market competitiveness.
- Additionally, he suggested establishing a **new institutional arrangement** for pulses, owned by the government and private players, to facilitate trading operations for various crops.

**Way forward:**

- **Promotion of portal:** The newly launched portal for direct procurement at minimum support prices should be widely promoted to encourage more farmers to cultivate pulses.
- **Encourage farmers:** Incentivizing pulse cultivation through subsidies on seeds, fertilizers, and other inputs can further motivate farmers.
- **Better varieties and trade policy:** Some pulses like Arhar are low-yield, long-duration crops. So, the farmers will also need high-yielding, climate-resilient varieties and a favourable trade policy.
- **Investment in R&D:** The government should invest in research and development to create high-yielding and climate-resilient pulse varieties.
- **Farmer's economic security:** Ensuring a stable MSP and establishing direct procurement mechanisms can provide economic security to farmers.

**PEPPER IT WITH:**

Essential Commodities Act, Minimum Support Price, NAFED, NCCF, Global Pulse Confederation

**PRE-SHOTS**
**Litchi Cultivation Expansion**
**News Excerpt:**

According to official data, Litchi cultivation for commercial purposes has expanded to 19 Indian states & UT.


**Litchi Cultivation in India:**

- Litchi is a sweet and juicy fruit of India's hot summers and grows mainly in the foothills of the Himalayas in Uttarakhand, Bihar, West Bengal, and Jharkhand.
- Litchi cultivation is spread across **over 32,000 hectares in Bihar alone.** This accounts for nearly **40% of India's litchi production.**
- Bihar is followed by West Bengal (12% of the total) and Jharkhand (10%).
- Litchi was sporadically cultivated in Odisha, Chhattisgarh, Madhya Pradesh, and Assam. **But this was not for commercial production.**
- Litchi cultivation for commercial production has started in **Andhra Pradesh, Tamil Nadu, Karnataka, Uttar Pradesh, Himachal Pradesh, Madhya Pradesh, Odisha, Manipur, Assam, Punjab, Maharashtra, Jammu and Kashmir, Gujarat, Arunachal Pradesh, Rajasthan and Mizoram.**
  - More than 0.1 million hectares of land are under litchi cultivation in India.
- The litchi cultivation expansion plan was based on a scientific study that found suitable soil and climate for the fruit's cultivation in other states.

**National Research Centre on Litchi (NRCL)**

- The ICAR-National Research Centre on Litchi was established on 6th June **2001 in Muzaffarpur.**
- The NRCL is the premier national institute for conducting **research and developments** on litchi and provides **leadership at the national level.**
- It acts as a **national repository of information** on litchi production, processing, and value addition and provides consultancy services to end users.
- The NRCL is preparing thousands of litchi saplings at its nursery each year. The centre provides saplings of its **famous Shahi litchi, besides popular varieties like China, Gandki Lalima, Gandki Sampada, and Gandki Yogita, to farmers in other states.**
- NRCL scientists pointed out that litchi is considered to be a susceptible fruit as far as **temperature, rainfall, and humidity are concerned.**

## High-Value Aromatic Crops

### News Excerpt:

In Odisha, high-value aromatic crops have become a viable and sustainable alternative for the tribal communities as a means to supplement their livelihood.

### About the news:

- With the help of the **Central Institute of Medicinal and Aromatic Plants (CIMAP)** in Lucknow, two districts in Odisha have recently introduced different aromatic plants such as **menthol mint** (the CIM-Unnati variety), **rosemary** (Hariyali variety), etc.

### Aromatic plants:

- Aromatic plants are those that contain **aromatic compounds** – basically, **essential oils** that are volatile at room temperature. These essential oils are **odorous, volatile, and hydrophobic** and can be obtained from different parts of a plant, such as **flowers, leaves, bark**, etc.
- India has favourable **agro-climate conditions** for cultivating various medicinal and aromatic crops. These have an **immense potential** for providing **livelihood support to marginal and small farmers** in general and to **farm women** in particular.
- Medicinal & Aromatic Plants (MAPs)** will be helpful for the **health security** and the **economic security** of farm families in horticulture.

Benefits	Issues
These substances are used for <b>disease treatment and as therapeutic, fragrance, and flavouring products</b> in the pharmaceutical and cosmetic industries.	<b>Lack of awareness</b> about the utility and value of medicinal & aromatic plants.
They occupy an important position in the <b>socio-cultural, healthcare, and spiritual arenas</b> of the people of India.	<b>Availability of seeds/planting materials</b> is still an issue.
<b>Provides employment and income generation</b> to rural women, leading to their empowerment.	<b>Different types of hazards</b> - Health and Food Security
<b>Minimum Care</b> is required for reaping benefits.	Lack of <b>technological awareness</b> and exposure
<b>It is easy to establish</b> and is a short-duration crop.	Lack of <b>Marketing</b>
These are sources of <b>natural dye, fat, essential oil, bio-pesticide, resin, protein, vitamins, condiments, spices, timber, and fibre.</b>	Associated <b>Environmental Concerns</b>

### The Success Story of the project:

- The CIMAP, a Council of Scientific and Industrial Research (CSIR) laboratory, started an experimental lemongrass plantation in Nabarangpur a couple of years ago.
- At the end of 2023, the CSIR-Aroma Mission touched 26 out of 30 districts of Odisha through 46 clusters.
- Across the state, nearly 850 hectares have been planted with aromatic crops, while 22 distillation units have been installed, producing 25-30 tonnes of aromatic oil.
- Importance of the Project:**
  - Huge Demand:** Aromatic plants do not face the regulatory challenges that medicinal plantations face. The district administration is facilitating the setting up of distillation units to add value to the crop.
  - Repel elephants:** The crop was also an instant hit in Angul district, where farmers were distressed by frequent crop raids by wild elephants. When the animals ate the lemongrass, however, they immediately vomited. The distinct odour of aromatic plant species such as lemongrass, citronella, and vetiver, among others, repels elephants.

## Copra Production- MSP

### News Excerpt:

The **Cabinet Committee on Economic Affairs (CCEA)** has decided to increase Copra's minimum support price (MSP) for 2024.

### Key Points:

- The new MSP for milling Copra will be **₹11,160 a quintal — an increase of ₹300 per quintal**, and the new MSP for ball Copra will be **₹12,000 per quintal — an increase of ₹250 per quintal from the 2023 season**. The rate will be effective from next year.
- According to a government release, the new rates would ensure a margin of 51.84% for milling Copra and 63.26% for ball Copra.

### Production and procurement:

- Kerala and Tamil Nadu** are significant producers of milling copra, whereas ball copra is produced predominantly in **Karnataka**.
- In 2023, the government procured over 1.33 lakh metric tonnes of Copra at a cost of ₹1,493 crore.

### About Copra:

- Copra is the dried section of the meat of the coconut, the kernel of the fruit of the coconut palm (*Cocos nucifera*).
- It is valued for the coconut oil extracted from it and the resulting residue, coconut oil cake, used mainly for livestock feed.



- Naturally, growing coconut palms are a significant source of Copra, but commercial estates and plantations now predominate.

## India's stand before WTO on Food Stocks

### News Excerpt:

The developed nations have claimed that the Indian subsidies—in the form of Minimum Support Prices (MSP) for farmers and free food for people experiencing poverty—breach WTO subsidy thresholds.

### About the news:

- According to government officials, India will not negotiate on any farm issue at the World Trade Organization (WTO) until it finds a permanent solution to the issue of public foodgrain stock.
- Besides public stockholding for food grains, WTO members, particularly developed countries, want India to provide information on export restrictions in advance, which is not possible.
- According to government officials, the **public stockpiling of food grain is the most prolonged pending issue.**
  - The members of the Bali ministerial made the promise and later endorsed it at subsequent conferences.
- India wants the matter settled as it prepares for the **WTO's 13th ministerial meeting in Abu Dhabi from 26-29 February.**

### What is a Core issue?

- Developed countries have red-flagged India's food security programs, such as buying rice and wheat from farmers at an MSP for distribution through the Public Distribution System (PDS). They have been alleging that

procurement of grains at subsidized rates and storage distorts global agriculture trade.

- Under global trade norms, a WTO member country's food subsidy bill **should not breach the limit of 10% of the value of production** based on the External Reference Price (ERP) of 1986-88.

### Peace Clause:

- At the Bali ministerial meeting in 2013, WTO members agreed to put in place a mechanism popularly called a '**Peace Clause**' and committed to negotiating a permanent solution.
- Under the Peace Clause, WTO members agreed to refrain from challenging any breach in the prescribed ceiling by a developing nation at the dispute settlement forum of the WTO. This clause **is in force until a permanent solution is found.**
- India has also suggested changing the formula to calculate food, the subsidy cap, and the inclusion of programs implemented after 2013 under a 'Peace Clause'.

### India's argument at WTO:

- The public stock issue goes to the heart of India's Food Distribution System.
- India has to protect the interest of poor and vulnerable farmers and ensure the food security needs of a large section of the population.
- India has also conveyed that **support measures given to its poor farmers, like input subsidies on electricity, irrigation, fertilizer, and even direct transfers, are non-negotiable.**
  - The government provides 5 kg of food grains every month free of charge to around 800 million poor under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY).



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## INTERNATIONAL RELATIONS

### Maldives Vs Lakshadweep

#### News Excerpt:

The Indian Prime Minister's visit to the Indian archipelago Lakshadweep triggered an unexpected row that has soured ties with the Maldives.

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#### Background:

##### Maldives:

- The Maldives, an archipelago of **1,190 coral islands and sandbanks** clustered in 20-odd atolls sprawls over a patch of the North Central Indian Ocean southwest of Kerala and Sri Lanka.

##### Lakshadweep:

- Lakshadweep, which translates into Sanskrit and Malayalam as “**hundred thousand islands**”, is a group of **36 coral islands with a total area of only 32 sq km — India's smallest Union Territory.**
- The islands, which are at distances between 220 km and 440 km from Kochi, lie to the North of the Maldives.

Both archipelagos are part of the same chain of coralline islands that extend southward beyond the equator to the **Chagos archipelago.**

#### How did the Maldives become such an attractive destination for tourists?

- The Maldives has long invested in tourism. The Maldives tourism master plan 1996-2005 notes that tourism, which started in 1972 with the development of 60 tourist beds on two islands, has been “**the most important economic activity**” in the country since the 1980s.
- In 2009, local island guesthouses started to pop up on the islands and atolls after a change in the rules allowed tourists to stay among the local population rather than only on privately owned resort islands.
  - Often, an entire island in the Maldives is occupied by a single resort, offering great privacy and luxury to wealthy visitors with high standards of hospitality.

- Currently, the Maldives is an international tourism hotspot. Tourism directly contributes to **almost 30% of the country's GDP** and generates more than **60% of its foreign currency earnings.**
- According to the Maldives tourism ministry, **the Maldives offers visa-free arrivals to its major source markets**, which include India, Russia, China, and Kazakhstan.

#### Why is there such a vast gulf between the Maldives and Lakshadweep?

- The Lakshadweep occupies a far smaller area — **only 10 islands are inhabited** — and the scope for tourism is limited.
  - However, India has never invested in its tourism potential, in part **due to concerns over environmental damage and the destruction of local livelihoods.**
- Bangaram, the uninhabited island that the Prime Minister visited, has the largest carrying capacity of 200 cottages. Among the inhabited islands, Kavaratti has a capacity of 243 cottages.



#### Raveendran Committee

- In May 2012, the Supreme Court appointed a panel under **Justice R V Raveendran (retired)** to look into the environmental and developmental challenges on the Lakshadweep islands.
- The committee recommended that all infrastructure development proposals should be in accordance with an Integrated Island Management Plan and should be implemented in consultation with elected local self-government bodies.
- The report noted the “**fragile ecology of the islands and the need for conservation of the corals, lagoons and other ecosystems**” and laid down the carrying capacity of each island.

#### What tourist infrastructure is available on the Lakshadweep islands currently?

- According to the people's representative, Bangaram currently has **just 67 cottages.** Many places in Kavaratti and Minicoy are yet to be renovated after they fell into disuse during the COVID-19 pandemic.
  - In Kavaratti, there could be 14 cottages. As of now, there is no infrastructure to accommodate a rush of tourists.

- The administration says on its website that entry to the islands is restricted - One requires an entry permit issued by the Lakshadweep Administration to visit.
- A small 72-seat aircraft flies between Kochi and Agatti, often only once a day, which caters to both tourists and the resident population.
  - Only five of the seven-passenger ferries that ply between Lakshadweep and Kochi are currently operational.
  - The passage takes 14 to 18 hours, depending on the island chosen for the journey.
- **The Lakshadweep Tourism Policy was published in February 2020.**
  - As per the policy, **private, public, and PPP models** were allowed in tourism development.
    - Applications were invited from local entrepreneurs to develop tourist homes and resorts in Agatti and Kavaratti.

### How is Lakshadweep Island better than Maldives?

- **Natural Beauty and Biodiversity:** Lakshadweep Island boasts untouched and pristine natural beauty, with its clear **turquoise waters, coral reefs, and white sandy beaches**. With its strict regulations on tourism and construction, Lakshadweep Island has managed to preserve its natural environment much better than the Maldives.
- **Authentic Local Experience:** Lakshadweep Island offers a unique opportunity to indulge in an authentic local experience. Its warm and friendly inhabitants make visitors feel welcome and provide insights into the island's rich culture and traditions.
- **Serenity and Privacy:** Compared to the Maldives, which has a higher number of tourists and more commercialized resorts, Lakshadweep Island offers a serene and peaceful atmosphere.
- **Environmental Conservation:** Lakshadweep Island takes its commitment to environmental conservation seriously. It has implemented various eco-friendly initiatives to preserve its fragile ecosystem.
- **Cultural Diversity:** Lakshadweep is home to a diverse mix of cultures influenced by Arab, Indian, and African traditions, resulting in a unique and rich cultural tapestry. From the distinct architecture of its mosques to the vibrant dance forms like Lava and Kolkali, Lakshadweep offers a glimpse into a different world.

### Recent development projects in Lakshadweep:

- **Fiber Optic Connectivity**
  - The PM of India inaugurated the Kochi-Lakshadweep Islands Submarine Optical Fiber Connection (**KLI - SOFC**) project, marking a significant leap in communication infrastructure.

- This initiative ensures internet speed enhancement by over 100 times, from 1.7 Gbps to 200 Gbps.
- The dedicated submarine optic fibre cable transforms Lakshadweep's connectivity landscape, facilitating faster and more reliable services in healthcare, education, e-governance, digital banking, digital currency usage, digital literacy etc.
- **Water Infrastructure**
  - The **Low-Temperature Thermal Desalination (LTTD)** plant at Kadmat will generate 1.5 lakh litres of clean drinking water daily.

### Low-Temperature Thermal Desalination (LTTD)

- **The Ministry of Earth Sciences (MoES)** launched a program to develop LTTD technology for converting seawater into potable water, suitable for installation in the island territories and near the coastal Power Plants.
- The LTTD is a process under which the warm surface seawater is flash evaporated at low pressure, and the vapour is condensed with cold deep seawater.
- The LTTD technology does not require any chemical pre and post-treatment of seawater; thus, the pollution problems are minimal and suitable for island territories.
- This pivotal project addresses Lakshadweep's water scarcity challenges, especially significant given the minimal availability of groundwater due to its coral island nature.
- The **Functional Household Tap Connections (FHTC)** in Agatti and Minicoy islands further strengthen the islands' water resources and support tourism-related opportunities.
- Under the **Swadesh Darshan scheme**, water villa projects are being developed on the **Kadmat and Suheli islands**.
- **Renewable Energy**
  - Lakshadweep also got **its first-ever battery-backed solar power project in Kavaratti**. This solar power plant aims to reduce dependency on traditional Diesel-based Power Generation, aligning with the government's commitment to sustainable and renewable energy solutions.
  - The initiative enhances Lakshadweep's energy infrastructure while contributing to environmental conservation.
- **Healthcare, Education & social initiatives**
  - The foundation stone was laid for the renovation of the Primary Health Care facility in Kalpeni. The construction of five model Anganwadi Centres (Nand Ghars) on the five islands of Androth,

Chetlat, Kadmat, Agatti, and Minicoy was also initiated.

- The government distributed laptops to students and bicycles under **Beti Bachao Beti Padhao**.
- **PM Kisan Credit Cards** were distributed to farmers and fishermen beneficiaries, reinforcing the government's support for agricultural and fishing communities.

### Ecological fragility of Lakshadweep:

- Experts fear the anticipated **tourist influx will impact Lakshadweep's fragile ecosystem**, which is **already threatened by deep-sea fishing, coral mining, and recurring climate change**, heavily harming its beaches and dunes.
- The **fragility of Lakshadweep's ecosystem** arises from the **prevalence of atolls (ring-shaped islands or reefs)**, which struggle to survive in regions influenced by over tourism.
- Since the vast open ocean surrounds them, they are **subjected to storms, cyclones, and heavy rains**.
- **Coastal erosion** is one of the **serious natural problems** Lakshadweep faces.
  - About **200 running km of seashore is stated to be subjected to severe erosion**, according to the Centre for Earth Sciences Studies (CESS), Thiruvananthapuram.
- Lakshadweep is on the **trade route between Africa, Arabia, and the west coast of India (Malabar)**. There has been a drastic increase in passenger and cargo traffic across the seas when **untreated wastes and waste oil are discharged from oil tankers and ships into the sea**.
  - These cause **heavy pollution, resulting in damage to the coral reefs**. According to a study by the **National Geophysical Research Institute (NGRI)**, Hyderabad, around a **25% decrease in the growth rate (calcification rate) of hard corals** was observed between 1993 and 2003, attributed to global warming caused by high levels of carbon dioxide.
- Coral bleaching or loss of colour from corals under stress due to environmental conditions, especially the high water temperature, probably due to global warming, was studied by the **Cochin University of Science and Technology (CUSAT) in Lakshadweep**.

### Solution: A Sustainable Approach

- To address the ecological and economic needs of the archipelago, there is a **necessity for proper sewage treatment, transportation, and accommodation**.
- Big tourism plans should be executed with a **structured action plan**.
  - The **first step** involves **developing a feasibility plan and conducting an environmental impact**

**assessment** to identify ecologically significant islands and those with existing human habitation and trade activities.

- Implementing sustainable measures, including **preferring smaller hotels with a reduced carbon footprint and incorporating renewable energy sources**, is crucial.

### Way Forward:

With its distinct beauty, Lakshadweep has the potential to be a major contributor to India's

development in terms of tourism and local well-being. In this sense, the development projects are essential steps towards the growth of Lakshadweep offers social empowerment, sustainable solutions, and better regional communication connections.

### PEPPER IT WITH:

Chagos Archipelago, LTTD, Raveendran Committee, Swadesh Darshan Scheme

## Trouble at two shipping choke points

### News Excerpt:

The ease of moving goods via the Suez Canal and the Panama Canal is threatened, potentially disrupting over a third of global trade.

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### What do the ongoing Red Sea and Panama Canal crises mean for world trade?

- A disruption in maritime transport is a crucial concern for the world economy, as over 80% of the global goods trade is carried by sea.
  - The share of trade via sea is much higher for developing countries such as India.
- Currently, two important shipping routes are facing blockages. While the Bab-el-Mandeb Strait that leads to the Suez Canal in the Red Sea region connects Asia to Europe, the 100-year-old Panama Canal connects the Atlantic and Pacific Oceans.
  - Both these routes are among the busiest in the world, and a blockage results in forcing global shipping lines to take longer alternate routes, pushing up freight rates.

### What is the impact on Indian Trade flowing through the Red Sea?

- **Longer Route and Increase in Freight's Time and Cost:** After the attacks, almost **90% of western hemisphere cargo**, both inbound or shipped from India, that used to go through the Red Sea is now getting re-routed through the **Cape of Good Hope (Africa)**. This potentially adds one to two weeks to voyages, disrupting shipping schedules and subsequently elevating fuel and insurance costs.



- **The impact of this move varies on the type of buyer-seller contract.**
    - If it is **FOB (free on board)**, the freight burden is on the buyer (they expect the Indian exporter to hold back consignment), and in **CIF (cost, insurance and freight)** or **C&F (cost and freight)** contracts, the freight has to be borne by the exporter.
    - Similarly, exporters who have to bear the freight are requesting their buyers to allow them to hold the consignment given the increase in freight costs, which includes peak season surcharge and contingency surcharge.
    - However, if there is zero inventory, the buyer will insist on the shipment of the goods. According to the **Container Corporation of India**, about **25% of its containers are being held back by Indian exporters.**
  - **Sectors affected:** The European Union is **India's second-largest export destination**. Slowing demand from the region has impacted India's labour-intensive sectors, such as **textiles, gems and jewellery exports**.
    - **Particular sector impacted:** Commodities that are worst affected are **chemicals, plastic, and petrochemicals** due to the unavailability of margins to absorb the hike in freight.
    - Airlifting is possible for high-value, low-volume commodities, but goods that are moved are generally large volumes.
  - **Agricultural Sector:** Disruption in the Red Sea route has turned to increase Indian **agricultural product** prices by **10-20%** as shipments reroute through the Cape of Good Hope.
- How does the Red Sea crisis impact India's Imports?**
- **Costlier Imports:** Recent developments have made imports costlier and called for better inventory management. While the impacts on some critical imports are being assessed, both import and export cycles have elongated.
  - **Final products turning dearer:**
    - **Crude oil and petroleum products:** The Red Sea crisis could come in the way of any plans to reduce petrol and diesel pump prices. Gross imports of crude oil and petroleum products as a share of India's gross imports in value terms were 25.8% in 2022-23 and 22.6% in the first half of the current fiscal year.
    - **India's Higher Dependence:** India's import dependence (based on consumption) in the April-September 2023 period was **87.6%**, according to the **government's Petroleum Planning and Analysis Cell**. Citing the turbulent situation, there was no plan to slash fuel prices.
  - **Freight rates increased:** Additional war risk premiums in the Red Sea have been partially contributing to the freight rate increases for the relevant routes, but this surcharge is significantly lower than the costs linked to re-routing via the Cape of Good Hope.

**Why is trade via the Panama Canal slowing?**

- Shipping via the Panama Canal has dropped by over 50% due to **drought conditions** at the 51-mile stretch.
- Due to the shortage of water, ships moving from Asia to the US are being forced to use the Suez Canal, which takes six more days compared to the Panama Canal.
- Moreover, in decades, Panama is facing its driest rainy season, raising fears of prolonged canal bottlenecks.

**What is being done to address this?**

- To counter the attacks and protect the free flow of commerce in the Red Sea, the U.S. Secretary of Defence announced the establishment of **Operation Prosperity Guardian (OPG)**, which focuses on security in the Red Sea.
- From the Indian side, both the Navy and Coast Guard have increased their presence and surveillance in the region.
- **The Indian Navy's Information Fusion Centre for the Indian Ocean Region (IFC-IOR)** actively monitors the region and coordinates in the back end to facilitate communication where required.

**Way Forward:**

New challenges in the Maritime security domain expect a newer outlook for security. States need to undertake a developmental approach while adopting integrated operations to set domestic regulations with international laws and frameworks parallelly.

**PEPPER IT WITH:**  
IFC-IOR, Op Prosperity Guardian, Red Sea, Panama Canal

**Powerful but paralyzed: UN's action**

**News Excerpt:**

According to the UN General Assembly (UNGA) President, the UN Security Council (UNSC) does not reflect today's realities and is unable to discharge its basic function of maintaining international peace and security.

**Background:**

- **The P-5 (UNSC Permanent Members)** have been guilty of playing out their **inter-political rivalries** inside the UNSC, thereby paralyzing the Council and compromising international peace and security.

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- The P-5 standoff has given space for the countries in conflict, especially developing countries in **Africa and Asia**, to push the P-5 to not treat their **issues uni-dimensionally** through a colonial or Western lens but respect their **sovereignty** and viewpoints.
- However, such geopolitical paralysis inside the Council caused by P-5 affects its decision-making ability and credibility. This is where the UNSC stands.
- For the first time, the West is meeting some serious challenges to a **Western worldview** being imposed on **geopolitical issues of the Global South**.

**The latest manifestation of UNSC paralysis:**

- On 7<sup>th</sup> October 2023, the Hamas terror attack on Israel took place. The **UNGA** voted for a ceasefire, with **153 out of 193 member** states supporting it, but the UNSC did not follow through with it.
- The **loss of credibility of the UN** on recent issues can be attributed to the double-speak and inaction of both **P-5** and the **Arab World**.
- The **UN Secretary-General** and other **UN organs** have pointed out potential violations of international law. Thus, in international conflict situations, the solution is to strengthen the UN.
- However, the Ukraine conflict saw a P-5 country going to war. **Russia** vetoed every resolution **against the UNSC** while the P-5 was split on the **Ukraine conflict**; the abstention of many developing countries on the UN votes conveyed a very different message.

**UN and Global South Scenario:**

- The Global South used **UNSC** and **UNGA** as platforms to send a message to P-5 and the West that while they are on the side of the **UN Charter** and for Ukraine's **sovereignty and territorial integrity**, the fight in Europe has to be resolved politically and not militarily.
- All sides are recklessly fueling the war, and the **unilateral sanctions imposed on Russia are only hurting the Global South** inter alia food, energy, finance, and humanitarian assistance.



**WHAT IS THE PRESENT ISSUE OVER ARTICLE 2(4) OF UN CHARTER?**

- **Article 2 (4) from Chapter I of UN Charter** prohibits the threat or use of force and calls on all Members to respect other States' sovereignty, territorial integrity and political independence.
- A confluence of forces - *resurgent nationalism, protectionism, multilateralism, and the resurgence of interstate wars* challenge the post-World War II order.
- The two wars (*Ukraine and Gaza conflict*) have led many to pronounce the death of international law, especially the rule prohibiting the use of force in international relations as shown below:
  - The international law suffers from **several structural deficiencies**.
  - Unlike municipal law, international law **lacks a global police force to enforce it successfully**, notwithstanding the growth of several international courts and tribunals.

### Way Forward:

- There is a need to push P-5 to make more informed and responsible decisions on developing country-related issues by reflecting the views of the Global South, and thus, countries like India have called for comprehensive UNSC reforms.
- **India** is already the most populous country and the fifth-largest economy in the world and can contribute more towards taking a **stand for the Global South**. For instance, India brought the African Union into the G-20 during its Presidency last year.
- **Robust reforms** are needed to make the UNSC more representative, credible, and reflective of the reality outside the UNSC's chambers.

#### PEPPER IT WITH:

Global South, G-20, African Union, UN charter, P-5 countries

## Israel & the ICJ hearing

### News Excerpt:

South Africa recently filed an **application with the International Court of Justice (ICJ) instituting proceedings against Israel**, alleging that Israel is committing a "Genocide."

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### What is a Genocide?

- The definition of genocide was coined in 1944 by a Jewish lawyer, Raphael Lemkin, who was a key figure in the establishment of the **United Nations Convention on the Prevention and Punishment of the Crime of Genocide** of 1948.
- Often seen as the "crime of crimes", genocide is defined by the **special intent to "destroy, in whole or in part, a national, ethnic, racial or religious group"**.
- According to ICJ, the use of force, even on a significant scale, "cannot in itself constitute an act of genocide".

### About Ratification of the Genocide Convention:

- The **Convention on the Prevention and Punishment of the Crime of Genocide** (Genocide Convention) is an instrument of international law that codified for the first time the crime of genocide.
- The Genocide Convention was the **First Human Rights Treaty** adopted by the **General Assembly of the United Nations (UNGA)** on **December 9, 1948** (effective from **Jan 1951**) and signified the international community's commitment to 'never again' after the atrocities committed during **World War II**.
  - **India** signed with it on 29 Nov 1949 and **ratified** it on **27 Aug 1959**.
  - Its adoption marked a crucial step towards developing **International Human Rights** and **International Criminal Law**.
- **Definition:** According to the Genocide Convention, genocide is a crime that can take place both in times of

war as well as in times of peace. The definition of the crime of genocide, as set out in the Convention, has been widely **adopted at both national and international levels**, including in the 1998 Rome Statute of the **International Criminal Court (ICC)**.

- According to **Art. 94(1) of the UN Charter and Art. 60 of the Statute of the ICJ**, the decisions of the ICJ are **binding and final on the States** Parties to the case and are **not subject to appeal**.
- According to **Art. 94(2) of the UN Charter**, the UNSC has the power, at the request of the injured State, to take special measures to enforce a judgment rendered by the ICJ.

### Background of the recent Israel-Palestine conflict:

- In early October 2023, war broke out between Israel and Hamas (Hamas has controlled Gaza since 2006).
- Hamas fighters fired rockets into Israel and stormed southern Israeli cities and towns across the border of the Gaza Strip on 7 October 2023, killing more than 1,300 Israelis, injuring 3,300, and taking hundreds of hostages.
- One day after the October attack, the **Israeli Cabinet formally declared war against Hamas**.

**Main Israeli-Palestinian Issues:** The Israeli-Palestinian conflict revolves around the following key issues such as:

- **The two-state solution:** It proposes creating a Palestinian state in the West Bank and Gaza alongside Israel, but Hamas rejects it.
- **Settlements:** Settlements built on land occupied by Israel in 1967 are considered illegal by most countries, causing perpetual tension.
- **Jerusalem:** Jerusalem is a contentious point, with Palestinians wanting East Jerusalem as their capital, while Israel insists on its sovereignty over the entire city.
- **The refugee issue:** It involves millions of Palestinians, descendants of those who fled in 1948; Palestinians have long demanded that refugees should be allowed to return, along with millions of their descendants. Israel says any resettlement of Palestinian refugees must occur outside of its borders.

### South Africa's Claim:

- On December 29, 2023, South Africa filed the application with ICJ, basing its case on two claims:
  - The first is the **scale of civilian death and destruction in Gaza**.
    - There is no doubt that the war in Gaza has been devastating for the civilian population, but this does not indicate the occurrence of genocide.
  - The second one is about various **statements issued by Israeli officials or former officials**, which they claim **prove the necessary special intent of committing genocide**.

- But they do not reflect Israel's actions in practice and could be a very selective collection of statements.
- South Africa's filing has been **welcomed by the Organization of Islamic Cooperation**, whose 57 members include many African and Muslim-majority countries such as Turkey and Malaysia, which have also made separate statements of support.
- **Israel's Response:** Israel rejects South Africa's claim, stating that it lacks both a factual and a legal basis and constitutes a despicable and contemptuous exploitation of the court.

#### About ICJ (International Court of Justice):

- The ICJ was established in **June 1945** by the Charter of the UN, following decades of international conflicts.
  - **Location:** Hague (Netherlands).
- ICJ has a total strength of **15 judges** appointed for **9 years** through separate, simultaneous elections at the **UN General Assembly** and the **UN Security Council**.
- **The multilateral forum has dual jurisdictional powers:**
  - **Advisory Jurisdiction:** This relates to the jurisdiction of the court in providing legal opinions on matters referred to it by the organs and specialized agencies of the UN,
  - **Contentious Jurisdiction:** It involves settling disputes between countries and determining "state responsibility" for crimes committed in violation of international law.

#### Significance:

- **An adverse ruling would be detrimental to Israel's reputation and set a legal precedent.**
- Although the decisions of the **International Court of Justice**, which is currently hearing a case instituted by **South Africa** accusing **Israel**, are legally binding and cannot be appealed against, they are often defied in the absence of an enforcement mechanism.

#### Way Forward:

- The key to resolving the conflict lies in both sides' **willingness to accept each other and make compromises for peace** in the region.
- South Africa wants it to implement a provisional measure that would **oblige Israel "not to engage in genocide, and to prevent and to punish genocide"**. Such temporary measures are meant to prevent a situation from worsening while the case is decided.

**PEPPER IT WITH:**  
UNSC, P-5, Genocide Convention, United Nations, OIC

## PRE-SHOTS

### Indo- Sri Lanka agreement on Aadhaar-Like System

#### News Excerpt:

Sri Lanka and India have agreed to start work "on basic level issues" to fund an Aadhaar-like identity verification system for its citizens.

#### About:

- In February 2022, the Indian government offered to provide a grant to implement a "**Unitary Digital Identity Framework**" modelled on India's Aadhaar cards.
- The personal identity verification program is a **digital tool** that can represent individuals' identities in cyberspace and identify individual identities that can be accurately **verified in digital and physical environments** by combining the two devices.
- The **Philippines and Morocco have already implemented an Aadhaar-like system**, and countries such as Kenya, Vietnam, Brazil, Mexico, Singapore, and Egypt have shown interest in the Aadhaar infrastructure.
- The reason for the keenness to learn more about Aadhaar, ties to the **Sustainable Development Goals (SDGs)** of 2016. **SDG 16.9** states that all people should have a **legal entity by 2030**.

#### Aadhaar authentication:

- It is a process by which the Aadhaar number, along with demographic information (such as name, date of birth, gender, etc.) and biometric information (Fingerprint or Iris) of an individual, is submitted to UIDAI's Central Identities Data Repository (CIDR) for its verification. UIDAI verifies the correctness of the details submitted, or the lack thereof, based on available information.
- UIDAI uses face authentication as a process by which an Aadhaar number holder's identity can be verified.
- A successful face authentication confirms that a person's physical face, which is being scanned for verification, matches the one that was captured at the time of enrolment when a person's Aadhaar number was generated.

### Disputed Islands between UAE and Iran

#### News Excerpt:

Tehran has protested against the statement issued in the 6th Arab-Russian Cooperation Forum challenging Iran's claim to the three disputed islands in the Persian Gulf region.



**About the dispute:**

- The dispute involves Iran and the United Arab Emirates (UAE) concerning three islands: **Abu Mousa, Greater Tunb, and Lesser Tunb.**
- Iran has governed the three islands since 1971, when its navy took control of the island after British troops withdrew from the UAE at its independence from Great Britain.
- The three islands dominate the approach to the

Iran's Perspective	UAE's Perspective
<ul style="list-style-type: none"> <li>• Iran claims these three islands have been historically a part of Persian territory and thus considers them "inseparable".</li> <li>• Iran cites an agreement with Sharjah, asserting that this agreement gives Iran the right to administer <b>Abu Mousa</b> and station troops there. However, it's crucial to note that there is <b>no such agreement regarding the other two islands.</b></li> </ul>	<ul style="list-style-type: none"> <li>• The UAE also claims sovereignty over the three islands, has consistently pressed for a negotiated solution to the dispute, and <b>rejects Iran's historical claims.</b></li> <li>• According to the UAE, the islands belonged to the emirate of <b>Ras al-Khaimah</b> until Iran <b>allegedly seized</b> them by force just days before the formation of the Emirati Federation.</li> </ul>

strategic **Strait of Hormuz**, a key waterway through which about **one-fifth of the world's oil supply** passes.

- Iranian armed forces have a presence on the islands, which are crucial to the country's maritime defence from where both warships and oil tankers pass.

**Migration and Mobility Agreement between India and Italy**

**News Excerpt:**

India's Migration and Mobility Agreement with Italy has received ex-post facto approval from the Indian Union Cabinet.

**Key provisions:**

- Indian students wishing to gather initial professional experience after completing **academic/vocational training** in Italy may be granted temporary residence in Italy for up to **12 months.**
- **Non-Seasonal Workers:** The total reserved quota stands at **12000** for non-seasonal workers. The Italian side has reserved an initial quota of **5000 for 2023 and will take increments of 1000 for the next two years, respectively,** under the current Flows Decree.
- **Seasonal Workers:** The total reserved quota stands at **8000** for seasonal workers. Additionally, the Italian side has reserved an initial quota of **3000 and will take increments of 1000 for the next two years, respectively,** under the current Flows Decree.

**About the Flows Decree:**

- It is a system that establishes the **number of visas for non-EU citizens** who can enter Italy for employment, self-employment, or seasonal work.
- It will also help India and Italy **formalize the irregular migration** of workers from India.



- Under the Flows Decree, Italy has offered **incremental reserved quotas** for both seasonal and non-seasonal workers from 2023 -25.

#### Benefits of the agreement:

- The Agreement would enhance **people-to-people contacts and foster the mobility of** students, skilled workers, business people, and young professionals.
- The Agreement locks in the current Italian visa regime, including mechanisms for **post-study opportunities, internships, and professional training**, assuring an advantage for India under the existing labour mobility pathways.
- The Agreement provides a formal mechanism for monitoring through a **Joint Working Group (JWG)**, which would meet periodically, in virtual or physical mode as convenient, and oversee its implementation.
- The agreement is also expected to formalize a pact between the two nations to employ **healthcare and medical services professionals**.

## India and Russia sign deals

#### News Excerpt:

India signed agreements with Russia for future Kudankulam Nuclear Power Project units in the southern state of Tamil Nadu.

#### About the news:

#### Protocol on Consultations:

- India and Russia have signed a **Protocol on Consultations** for the next four years (2024-28).
- The signed protocol aims to progress in **economic cooperation, energy trade, connectivity, military-technical cooperation, and people-to-people exchanges**.

#### Kudankulam Nuclear Power Plant:

- It will be one of India's biggest nuclear power stations, **located 650km south of Chennai** in the Tirunelveli district of Tamil Nadu.
- It is being built **by the Nuclear Power Corporation of India (NPCIL)** with technical assistance from Russia.
- The construction began in March 2002.
- Since February 2016, the first power unit of the Kudankulam NPP has been steadily operating at its design capacity of 1,000 MW. The plant is expected to start operating at full capacity in 2027.
- In 2013, the Indian Supreme Court dismissed the petitions by nuclear activists questioning the safety of the nuclear power plant.
- The Kudankulam nuclear plant uses **imported Pressurised Water Reactor (PWR) technology**.
  - It uses the advanced version of the Russian-developed PWR nuclear technology, **VVER-1000** type reactors, also known as **water-water power reactors** (i.e. water-cooled water-moderated energy reactors).

## Global South

#### News Excerpt:

The term Global South came into light by looking at the current conditions, stages of development, aspirations, and interests in the world order.

#### Evolution of the Global South:

- The word **Global South (GS)** was possibly first used by **Carl Oglesby** in 1969 during the Vietnam War.
- It gained a boost from the **Willy Brandt** (former German Chancellor) **Report, "North-South: A Program for Survival" (1980)**, which highlighted the **massive gap in standards of living between the North and the South**.
  - He even **drew a line on the world map separating the two**.
  - He **argued for a much larger transfer of resources** from the rich North (comprising mostly the United States, Europe and Japan) to the poor South.
  - He also **advocated for reducing protectionism in the North** to help reduce this gap.
- The Global South term has **evolved as a synonym for "developing countries"** over the last 40 years.



FIGURE THE BRANDT LINE

## Maldives, China agree to 'elevate' strategic cooperation

#### News Excerpt:

Maldivian President Mohamed Muizzu and Chinese President Xi Jinping witnessed the signing of 20 bilateral agreements.

#### Key agreements:

- Both countries have agreed to elevate China-Maldives relations to -
  - Comprehensive strategic cooperative partnership,**
  - Better leverage the **political guidance of high-level engagement,**
  - Expand practical cooperation between the two countries in various fields,

- Strengthen **collaboration on international and multilateral affairs**,
- Enhance the **well-being of the two people**,
- Both countries agreed to draw an **“action plan” for building a “China-Maldives Comprehensive Strategic Cooperative Partnership from 2024 to 2028.”**
- Both agreed to **cooperate in several areas**, including the **blue economy, digital economy, infrastructure development projects** linked to the **Belt and Road Initiative**, and **disaster and risk mitigation**.

Among the other initiatives the two countries announced also included Maldives's participation in the **Global Security Initiative (GSI)**. These six commitments are interlinked and mutually reinforcing.

- **It has been proposed by the Chinese government.**
- It aims to create a **new path to security** that features dialogue over confrontation, partnership over alliance and win-win over zero-sum.
- As per the Chinese Government, the core concepts and principles of the GSI can be summarized as the **“Six Commitments”**.
  - Stay committed to the vision of common, comprehensive, cooperative and sustainable security,
  - Stay committed to respecting the sovereignty and territorial integrity of all countries,
  - Stay committed to abiding by the purposes and principles of the UN Charter,
  - Stay committed to taking the legitimate security concerns of all countries seriously,
  - Stay committed to peacefully resolving differences and disputes between countries through dialogue and consultation,
  - Stay committed to maintaining security in both traditional and non-traditional domains.

## India to sign energy MoU with Guyana

### News Excerpt:

The Union Cabinet has approved the signing of a **Memorandum of Understanding (MoU)** between the Ministry of Petroleum & Natural Gas, Government of India, and the Ministry of Natural Resources, Republic of Guyana, on **cooperation in the hydrocarbon sector**.

### About the MoU:

- **Comprehensive Scope:** It covers various aspects of the hydrocarbon sector, encompassing sourcing crude oil from Guyana.

- Involvement of **Indian companies in Guyana's exploration and production (E&P) sector**, cooperation in crude oil refining, capacity building, bolstering bilateral trade, collaboration in the natural gas sector, joint efforts in developing regulatory policies for Guyana's oil and gas industry, and cooperation in clean energy including biofuels and renewables like solar energy.
- **Diversification of Oil Sources:** Guyana has recently emerged as a significant player in the global oil & gas sector, marking itself as the **world's newest oil producer with substantial discoveries**. Considering India's status as the world's third-largest energy consumer and consumer of oil, the partnership with Guyana is strategic.
- **Bilateral Trade and Investment:** The agreement is anticipated to **bolster bilateral trade and encourage investments** between both nations, providing Indian companies with opportunities to participate in Guyana's E&P sector. It is seen as a step towards enhancing energy supply security for India, **aligning with the vision of 'Aatmanirbhar Bharat'** or self-reliant India.



- **Strategic Focus on the Hydrocarbon Sector:** India is actively seeking new partnerships in the hydrocarbon sector to ensure energy access, availability, and affordability for its citizens, underpinned by energy security. **Diversification of crude oil sources and acquiring quality overseas assets** are strategies aimed at reducing dependencies on a single geographical or economic unit and enhancing India's strategic manoeuvrability.

## ENVIRONMENT

### GHG emissions: Antarctic Marine Protected Areas can become acidic by 2100

**News Excerpt:**

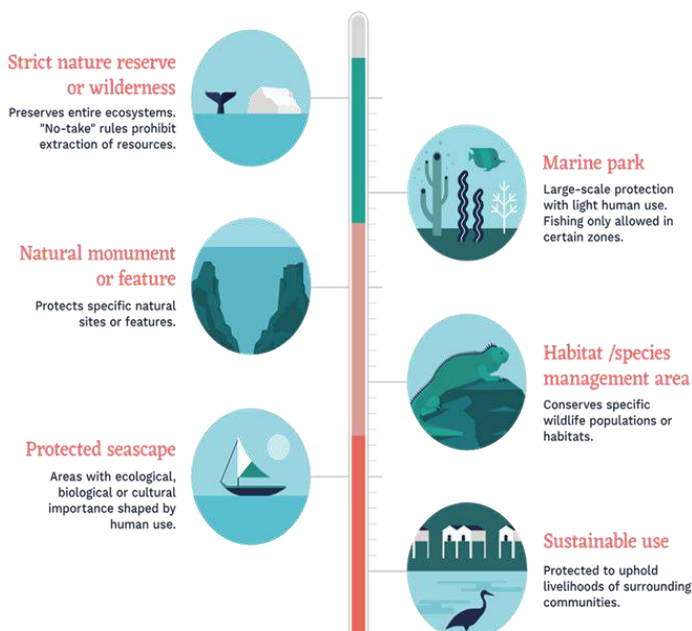
A new study has raised concerns about the **rising acidity levels** of the continental shelves in **Antarctic Marine Protected Areas (MPA)** under high levels of greenhouse gas emissions.

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**Key findings of the study:**

- The study, **Severe 21st-century ocean acidification in Antarctic Marine Protected Areas (MPAs)**, was published in the journal Nature Communications.
- The study suggests that Carbon emissions from human activities may be vertically mixed with ocean waters in coastal regions, resulting in severe acidification at all water levels.
- According to the study, if we continue with moderate to high levels of greenhouse gas emissions, ecosystems in the shallow continental shelf seas in proposed and established MPAs could experience significant ocean acidification by 2100.
  - Under the intermediate and high emission scenarios, the acidification could be severe.

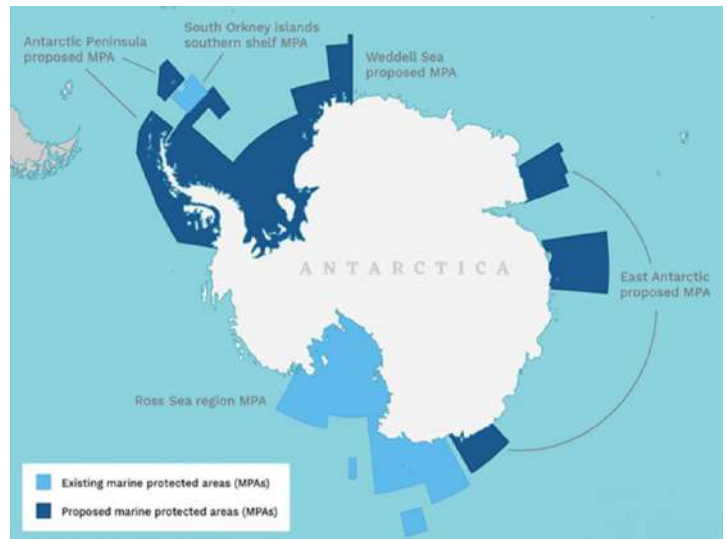
### MPAs have different levels of protection



**Marine Protected Areas:**

- Marine protected areas (MPAs) are scientifically proven to be the most effective way to limit damage caused by human activities and support a vibrant, healthy ocean.
- Like national parks on land, they have designated areas of the ocean where some activities, such as fishing, are limited.

- Marine protected areas are **generally established in areas recognized as biodiversity hotspots or regions vulnerable to changing conditions or increased human pressures.**
- By creating large zones where certain activities are restricted or prevented, MPAs can reduce stress on the ocean and its ecosystems, helping them build resilience to climate change.
- A network of MPAs will restrict human activities, including fisheries, tourism, and scientific research, that impact sensitive Antarctic ecosystems.



**Oceans and Global Warming:**

- The ocean helps mitigate the effects of global warming by absorbing some of the carbon dioxide gas (CO<sub>2</sub>) released into the atmosphere.
- This comes at a cost to ocean health because the **uptake of anthropogenic CO<sub>2</sub> causes changes in ocean chemistry, known as ocean acidification**, which can be harmful to marine ecosystems.

**Protective measures to stop acidification of oceans:**

- Given the cumulative threat to marine ecosystems from environmental change and activities such as fishing, the researchers called for strong emission-mitigation efforts and further management strategies to reduce pressures on ecosystems, such as the **continuation and expansion of Antarctic MPAs.**
- Designed to protect the unique high-latitude Southern Ocean biodiversity, a network of MPAs is being developed by the **Commission for the Conservation of Antarctic Marine Living Resources.**
- MPAs have been established at the **South Orkney Islands Southern Shelf** and in the **Ross Sea region**, with **three additional MPAs proposed in the Weddell Sea, East Antarctica and along the western Antarctic Peninsula.**

- This network of MPAs would protect **around 60 percent of Antarctic shelf waters.**
- **Earlier, India supported itself in setting up two MPAs in Antarctica to protect marine life and its ecosystem services.**

**Way Forward:**

The recent study highlights alarming concerns about escalating acidity levels in Antarctic Marine Protected Areas due to greenhouse gas emissions, threatening marine ecosystems. So, there is an urgent need for aggressive **emission-mitigation efforts and expanded conservation strategies, including establishing Antarctic Marine Protected Areas.**

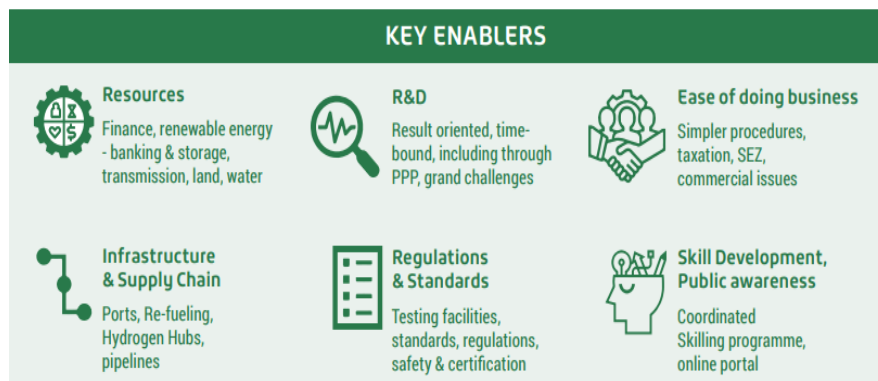
**PEPPER IT WITH:**  
Weddell Sea, Ross Sea, Ocean Acidification, World Biodiversity Hotspots

**Guidelines and Incentives to promote the procurement of Green Hydrogen**

**News Excerpt:**

The Union Ministry of New and Renewable Energy (MNRE) has recently published **guidelines and incentives** to promote the **procurement of green hydrogen** as part of the **National Green Hydrogen Mission.**

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**About the news:**

- The incentives are designed to facilitate **cost reduction and rapid expansion.**
- To **qualify** for incentives under the scheme, bidders must meet the **criteria** outlined in the **'National Green Hydrogen Standard'** as notified by MNRE.

- The scheme offers a **direct incentive** over **three years** from the beginning of production and supply, with rates of **Rs 50 / kilogramme** of green hydrogen in the **first year**, **Rs 40 / kg** in the **second year** and **Rs 30 / kg** during the **third year.**

**Green Hydrogen** refers to the clean hydrogen produced by splitting water into two hydrogen atoms and one oxygen (electrolysis process) atom using clean energy from surplus renewable energy sources such as solar or wind power.

**About National Green Hydrogen Mission:**

- It is approved from **FY 2023 – 24 to FY 2029 – 30** with an outlay of ₹ 19,744 crore.
- **Benefits:**
  - India's Green Hydrogen production capacity is likely to reach at least 5 MMT per annum, with an associated renewable energy capacity addition of about 125 GW.
  - The targets by 2030 are likely to bring in over Rs. 8 lakh crore investments.
  - Nearly 50 MMT per annum of CO2 emissions are expected to be averted by 2030.
- The overarching **objective** of the Mission is to **make India a Global Hub** for the **production, usage and export** of Green Hydrogen and its derivatives.
- The mission has a provision for supporting **pilot projects** for **low-carbon steel, mobility, shipping, and ports.**

- The mission allocates **various sub-components** of the Mission, such as **SIGHT, Pilot projects** in emerging end-use sectors and production pathways, **R&D**, etc. to fund specific selected projects.
- There is **no State-wise allocation** made under the mission. States and regions capable of supporting large-scale production and/or utilization of hydrogen will be identified and developed as Green Hydrogen Hubs.

**About Strategic Interventions for Green Hydrogen Transition (SIGHT) Programme:**

- It is a major **financial measure** with an outlay of ₹ 17,490 crore until 2029-30.
- The programme consists of **two distinct financial incentive mechanisms** to support the
  - Domestic manufacturing of **Electrolysers**
  - Production of **Green Hydrogen**
- The scheme's execution will be entrusted to agencies **nominated by** the Union Ministry of Petroleum and Natural Gas (**MoPNG**), primarily oil and gas companies, guided by the Centre for High Technology (**CHT**).

- The **Solar Energy Corporation of India**, under the Ministry of New and Renewable Energy, is the **implementing agency** for the scheme.

**Global Scenarios:**

- Recently, the luxury automobile company Rolls-Royce and its partner EasyJet have issued a document that states that they will develop **hydrogen combustion engines** capable of powering a range of aircraft, including those in the narrowbody market segment, from the **mid-2030s onwards**.

**Hydrogen as a fuel:**

- It is a clean form of energy with electricity, **heat and water** being the products and by-products.
- Hydrogen can be produced from various domestic resources, such as **natural gas, nuclear power, biomass, and renewable power like solar and wind**.
- These qualities make it an attractive fuel option for transportation and **electricity generation applications**. It can be used in cars, in houses, for portable power, and in many more applications.
- Today, hydrogen fuel can be produced through **several methods like** natural gas reforming (a thermal process), electrolysis, and solar-driven and biological processes.

Challenges before hydrogen combustion engines	Advantages of hydrogen combustion over conventional internal combustion engines
<ul style="list-style-type: none"> <li>• Hydrogen is <b>highly flammable</b>, making it difficult to store and transport safely.</li> <li>• The <b>infrastructure needed</b> to produce, store, and distribute hydrogen is expensive and still under development.</li> <li>• The efficiency of hydrogen production is low.</li> <li>• Most hydrogen is produced from natural gas, which emits large</li> </ul>	<ul style="list-style-type: none"> <li>• Hydrogen combustion engines use <b>Clean Fuel Source</b>, hydrogen as fuel instead of petrol or diesel.</li> <li>• They generate energy through the <b>reaction between atmospheric hydrogen and oxygen</b>, instead of fossil fuels combustion.</li> <li>• Since the only products of combustion are water vapour and energy, these significantly reduce greenhouse gas emissions.</li> <li>• They are <b>highly efficient and can generate more energy</b> than conventional internal combustion engines.</li> <li>• Vehicles with hydrogen combustion engines will</li> </ul>

amounts of <b>carbon dioxide</b> .	have <b>longer range, lower fuel consumption and, therefore, lower operating costs</b> .
<ul style="list-style-type: none"> <li>• Hydrogen will be <b>difficult and expensive</b> to incorporate into airline operations on account of its <b>poor round-trip efficiency</b> and the <b>complexity of storing and loading the fuel</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• These produce water vapour instead of greenhouse gases emitted by conventional internal combustion engines. This benefits companies seeking to <b>reduce their carbon footprints</b>.</li> </ul>

**Way Forward:**

**Green Hydrogen** will likely play a **critical role** in decarbonizing hard-to-abate sectors. The National Green Hydrogen Mission is expected to **facilitate** the deployment of the **Green Hydrogen ecosystem** and create opportunities across the **Green Hydrogen value chain**, translating into **investments, jobs and economic growth**. The government should invest in R&D, infrastructure for hydrogen production, storage and transportation and demand development, and mainstream other uses of hydrogen such as fuel cells, HCNG etc.

**Power Demand - India needs coal, just as the West needs oil and gas**

**News Excerpt:**

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At last month's **COP 28 climate summit** in Dubai, **India and China**, both countries strenuously opposed efforts to include a reference to "**phase-out**" of coal and altered it to "**phase down**".

**About:**

**Coal vis-a-vis Oil & Gas:**

- Coal is the **unglamorous** fossil fuel. Unlike oil and gas, its **prices do not fluctuate** daily.
  - It, therefore, figures **rarely** in business news headlines, unlike the world oil and gas markets.
- It is also **not significant** in the energy mix of **developed countries**, which rely largely on crude oil and natural gas.
  - On the other hand, it is **highly significant** for **emerging economies** such as India and China, which need coal for a large share of their electricity production.
  - As a result, a **stronger lobby** in the **developed world** has ensured that **oil and gas** have been kept out of climate summit declarations.

**PEPPER IT WITH:**  
Clean Fuel, National Green Hydrogen Standard, Solar Energy Corporation of India, Combustion Engine

- Coal contains **more carbon** than oil or gas. When these fuels are burned, the higher amount of carbon in coal reacts to form CO<sub>2</sub>, while a higher proportion of hydrogen in oil and gas causes them to form H<sub>2</sub>O along with CO<sub>2</sub>.

#### Coal "Phase down" initiatives taken by India:

- Permitting foreign direct investment (FDI) up to **100 per cent** under the **automatic route**.
- Waiver of inter-state transmission system (ISTS) **charges** for inter-state sale of **solar and wind power** for projects to be commissioned **by 2025**.
- Setting up **ultra mega renewable energy parks** to provide land and transmission to renewable energy developers to install large-scale renewable energy projects.
- Schemes such as -Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (**PM-KUSUM**)
- Solar Rooftop Phase II**, 12000 MW CPSU Scheme Phase II.
- Production-linked incentive scheme** under the "National Programme on high-efficiency Solar PV Modules.
- Green Energy Corridor Scheme** for Intra-State Transmission System.
- Under the **Solar Parks Scheme**, the government has sanctioned 50 solar parks with an aggregate capacity of 37,490 MW in 12 states nationwide since 2014.
- The **non-fossil electricity capacity** increased from 32.54 percent in 2014 to 43.82 percent in October 2023.

#### Coal and the Climate summits:

- Coal was specifically brought into a summit statement in 2021 by the Conference of Parties 26th meeting (COP26) in **Glasgow**.
- COP28**, closed with an agreement that signals the **"beginning of the end"** of the fossil fuel era by laying the ground for a swift, **just and equitable transition** underpinned by deep emissions cuts and scaled-up finance.
  - The declaration is considered historic, calling for a **'transition away'** from **all fossil fuels**, including coal, oil, and gas, for the first time.
  - This is undoubtedly a **positive step forward** for reducing global emissions, but realistically speaking, it is **not possible for India** to suddenly put an end to its reliance on coal.

#### Coal - Indian Energy Choice:

- Coal is the most important and **abundant** fossil fuel in India. It accounts for **55%** of the country's **energy needs**.
- Commercial primary energy consumption** in India has grown by **about 700%** in the last four decades.
- Driven by the **rising population, expanding economy** and a quest for improved quality of life, energy usage in India is expected to rise.

- According to the **coal and mines minister**, in the **next financial year**, India will become self-sufficient in thermal coal as domestic production is set to top a billion tonnes and will rise further to meet future demand. In other words, coal usage will continue to be part of India's energy scenario shortly.

#### Way Forward:

**India**, the world's **fourth largest carbon emitter**, has **extremely low per capita emissions**, with only 2 tonnes compared to the global average of 4.7 tonnes. This is significantly lower than the US and Russia. Given India's low emissions and the push to improve renewable energy capacity, there should be **no compromises** in the continual **use of coal** in the future.

### Permafrost structures identified in the Jhelum basin

#### News Excerpt:

More than **100 active permafrost structures** in the Jhelum basin holding significant volumes of water have been identified, further underlining the need to explore their hydrological potential.

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#### Key highlights of the report:

- This report was published in the **American Geophysical Union's Earth and Space Science journal**.
  - Scientists from the **Geological Survey of India, Indian Institute of Technology Bombay-Monash Research Academy, Northumbria University**, the United Kingdom, **ISRO Headquarters** and **Indian Institute of Science, Bangalore** **co-authored** it.
- Research was carried out about the rock glaciers of the Himalayas.
  - The **Kashmir Himalayas** are dotted with permafrost structures called 'rock glaciers', with significant ice volumes within.

#### About Jhelum River and Basin:

- It rises from a deep spring at **Verinag**, in the **western Jammu and Kashmir** region.
- It meanders northwestward from the northern slope of the Pir Panjal Range in a deep **gorge** through the valley of Kashmir to **Wular Lake** at Srinagar, which controls its flow.
- The Jhelum (**Vyeth** in Kashmiri, **Vetesta** in Sanskrit and **Hydaspes** in Greek) is the main waterway of the Kashmir valley.
- It is a major tributary out of five major tributaries viz. Satluj, Beas, Ravi, Chenab, and Jhelum, which are

#### PEPPER IT WITH:

PM-KUSUM, Green energy Corridor, CoP 28, Issues related to Coal

ultimately merging with the Indus River in Pakistan, are west-flowing rivers.

- The **total geographical area** of the **Jhelum basin** up to the Indo-Pakistan border is about 34775 sq km, with a total length of 402 km.
- But the length of Jhelum in India up to the existing ceasefire line is about 165 Km.
- **Important Tributaries:** Nallah Lidder, Nalah Sindh, Nallah Vishow, Rambiara Nallah, Dudhganga river, Pohru.

#### Rock Glaciers:

- As the **glacier retreats** or **melts** over time, the ice covered with debris transforms into a rock glacier.
  - The process involves an existing glacier gathering rocks and debris during its movement.
  - They typically develop in mountainous areas where **permafrost, rock debris, and ice converge**.
  - This recent study proved that these rock glaciers occur in **highly elevated regions** with **steep slopes**.
  - The rock glaciers **look like regular ground** to the naked eye, and habitations are often planned on them.
- A **statistical model** based on **topographic** and **climatic variables** like temperature, solar radiation, and slope aspects was used to build a **"Permafrost Zonation Map"**, pin-pointing **around 207 rock glaciers** spread over 50 square kilometres.
  - During researchers' trip to the **Jhelum basin** during the summer months, some **water bodies** were spotted right in the middle of vegetation some kilometres uphill from **Kulgam town**, which suggested that there was **permafrost underground**.
    - These resembled **"thermokarst lakes"** because no stream or glacier could feed them.
      - Thermokarst lakes are **formed** when **permafrost thaws**, creating **surface depressions** that fill with melted water.
      - These are a prominent feature of **Arctic landscapes**.
  - **Rock glaciers** will become a more **common mountain landform** in the future as debris concentrations increase in the melting glaciers with global warming and deglaciation.
    - It is already being **witnessed** in the **Jhelum basin**.

#### Significance of Permafrost structures:

- These permafrost structures hold **large volumes of water**, and at a time when water sources are fast disappearing, these can be **valuable reserves**.

#### Risk associated with Permafrost structures:

- These permafrost structures particularly increase the risk of Glacial Lake Outburst Floods (**GLOFs**), which cause **massive damage** in the lake's surrounding areas.
- In case of a **slope failure** due to the upper debris layer giving away, the underlying permafrost will be **exposed**

to warming and may eventually **melt** and **feed** into the lake.

- It may also make **landslides** more **frequent**, with the land on the melting ice becoming loose.

#### Way Forward:

- The authors called for **more research** to understand permafrost **distribution** across India's mountainous regions, specifically the **western Himalayas**, where the glacial retreat is fast and significant.
- The importance of **remote sensing and modelling techniques** in studying these frozen landforms becomes crucial because the region's complex topography and limited accessibility make field investigations challenging.

**PEPPER IT WITH:**  
Permafrost, GLOFs, thermokarst lakes

## PRE-SHOTS

### MoU between India and the USAID to achieve Net Zero Carbon Emission in Indian Railways

#### News Excerpt:

The Union Cabinet approved the signing of the Memorandum of Understanding (MoU) between India and the United States for International Development/India (USAID/India) for supporting **Indian Railways (IR)** to achieve the **Mission Net Zero Carbon Emission by 2030**.

**The MoU signed by Indian Railways with the USAID/India is for enabling energy self-sufficiency with the following understanding:**

- Firstly, both Participants intend to jointly work broadly on the following key activity areas, with details to be agreed upon separately:
  - Long-term energy planning, including clean energy for Indian Railways.
  - Develop an Energy Efficiency Policy and Action Plan for Indian Railway Buildings.
  - Planning for clean energy procurement to achieve Indian Railway's net-zero vision.
  - Technical support for addressing regulatory and implementation barriers.
  - Bid design and bid management support for system-friendly, large-scale renewable procurement.
  - Supporting Indian Railways in the promotion of e-mobility.
  - Collaboratively host events, conferences, and capacity-building programs in the identified areas.
- Secondly, either participant may request in writing a **revision, modification, or amendment** to all or any part of this MoU.



- Finally, this Memorandum of Understanding is effective as of the date of signing. It is expected to continue for **five years** or until the effective end of the **South Asia Regional Energy Partnership (SAREP)**, whichever period is shorter.

### Significance of this MoU:

- The MoU provides a **platform for Indian Railways to interact and share** the latest developments and knowledge in the railway sector.
- The MoU **facilitates utility modernization**, advanced energy solutions and systems, regional energy, and market integration.
- It also **facilitates private sector participation** and engagement, training, and seminars/workshops focusing on specific technology areas like **Renewable Energy** and energy efficiency.
- Earlier, **USAID/India** had also worked with IR focused on **deploying rooftop solar** across railway platforms.

### Expenditure involved:

- Technical assistance for the services under this MoU is intended to be provided by USAID under the **SAREP (South Asia Regional Energy Partnership)** initiative.
  - SAREP is a flagship program to advance the objectives of the **U.S. Government's Clean Asia Enhancing Development and Growth through Energy (Clean EDGE) initiative**.
  - SAREP improves access to affordable, secure, reliable, and sustainable energy in six countries – Bangladesh, Bhutan, India, Maldives, Nepal, and Sri Lanka.

- This MoU is not an obligation of funds or a commitment of any kind; it is **non-binding**.
- This does not involve any financial commitment from Indian Railways.

### What will be the impact of this action?

- The MoU has been signed to support Indian Railways in achieving Mission Net Zero Carbon Emission (NZCE) by 2030.
- This will help Indian Railways reduce dependence on imported fuel such as diesel, coal, etc. Deploying Renewable Energy (RE) plants will give a fillip to RE technology in the country.
- This will help in the development of the local ecosystem, which subsequently gives a boost to local product development.

## National Birds Day 2024

### News Excerpt:

Over a million birds belonging to 184 species visit Odisha's Chilika Lake

### National Birds Day 2024

The **United States of America** declares **January 5 as National Bird Day** to raise awareness of the significance of birds to our ecosystem.

- The National Birds Day 2024 theme is **'Right to Fight'**. It signifies the flight of a bird that represents freedom.
  - The day is set apart to make all of us understand that birds are not made to be caught or had as showpieces in our homes; rather, they are nature's lovely creatures that deserve to live with complete freedom.

## Indian Railways has a major role in contributing India's NDC towards combating Climate Change through several means:

- To enhance the share of the Railways in the overall land based freight transport from **present 36% to 45% by the year 2030**.
- Railways is setting up **Dedicated Freight Corridors (DFCs)** across the country. The first phase of the project alone is estimated to reduce emissions by about **457 million ton CO2 over a 30 year period**.
- Railways to further improve its energy efficiency for both diesel and electric traction thereby facilitating the reduction of GHG emissions for the country.
- Perform Achieve and Trade (PAT) Scheme** to be implemented in railway sector.
  - It has been set up as one of the initiatives under the **National Mission for Enhanced Energy Efficiency (NMEEE)** under the purview of The **Energy Conservation (EC) Act**.
- Use of 5% blending of biofuels in traction diesel fuel.
- Improve **water use efficiency by 20%** upto 2030.
- Tree plantation to increase Carbon sink.
- Waste Management and Pollution control**.
- Adopting the good practices on **Green Buildings, Industrial Units** and other establishments for the management of resources and infrastructure to achieve Environmental Sustainability in growth of IR.
- Contribution in **"Swachh Bharat Mission"**.
- IR has set a target of becoming a **"Net Zero"** entity by 2030 by completing the **electrification of all railway tracks**.



- **History:** National Birds Day has been celebrated in America since 2002. This date was picked because it is also the day of the yearly Christmas Bird Count.
- The day was first observed by the **Avian Welfare Coalition**, which is involved in the cause of promoting awareness about birds that are caught or end up in captivity for either monetary profit or for human entertainment.

#### About Migratory Birds in Chilika Lake:

- The **Chilika Wildlife Division** conducted the yearly bird census on Asia's largest brackish water lagoon on January 4, 2024.
- Almost 6,000 more birds were spotted than last year, including a **rare Pallas fish eagle** seen after a decade.
- This year, **1,137,759 migratory birds from 184 species** were spotted at Chilika Lake, compared to 1,131,929 birds belonging to 184 species counted in 2023.
- The **Nalabana Island** or **Nalabana Bird Sanctuary** inside the lake continued to be the most popular destination for the winged guests.
  - Among the pintail species of ducks, **the Northern Pintail, Gadwall and Eurasian Wigeon** were spotted.
  - The lake witnesses **birds from as far as Central Asia and Europe** every winter, with tourists and birdwatchers thronging to the waterbody in the season.

#### Reason for migratory birds to Chilika Lake:

The **winged visitors** started arriving in Chilika in November, as the lake presented them with a comparatively **hospitable alternate habitat compared to the extreme freezing conditions** in their natural habitats in Siberia, China, Japan and other countries in the northern hemisphere.

- The wetland also offers the winged visitors an abundant **feeding ground full of fish, prawns, frogs, snakes and molluscs.**

#### About Chilika Lake:

- Chilika Lake is a **brackish water lake and a shallow lagoon** with estuarine character spread across the districts of **Puri, Khurda and Ganjam in the state of Odisha in eastern India** and spreads across the **Daya River's Mouth**.
- Several islands are present in the lagoon, including Krushnaprasad, Nalaban, Kalijai, Somolo and Birds Islands.
- The lake's seagrass meadows are expanding despite anthropogenic pressure, which is a sign of a healthy ecosystem.
- It is the **largest wintering ground of migratory birds** in the Indian sub-continent and supports about 225 species at different parts of their life cycle.

- It is one of the hotspots of biodiversity in the country, and some rare, vulnerable and endangered species listed in the **IUCN Red List of threatened Animals** inhabit the Lake area.
- Chilika Lake was **designated as a "Ramsar Site"**, i.e. a wetland of International Importance.
- The **Nalaban Island** within the lake is notified as a **Bird Sanctuary under the Wildlife (Protection) Act, 1972**. The island disappears during monsoon season due to inundation, only to emerge again post-monsoon.
- It is under the **UNESCO World Heritage site**.

### Pong Dam Eco-sensitive zone

#### News Excerpt:

The construction of the Pong embankment was completed in 1974. Still, those displaced by the construction are yet to be rehabilitated and are protesting the declaration of the Pong Dam eco-sensitive zone (ESZ).

#### PONG DAM:

- This reservoir has been constructed on the river Beas in the wetland of the Shivalik hills of the Kangra district of Himachal Pradesh.
- It is also known as Pong Reservoir or Pong Dam. This dam was built in 1975 and named in honour of Maharana Pratap.
- The reservoir stretches to an area of 24,529 hectares (60,610 acres), and part of the lakes is 15,662 hectares (38,700 acres).
- Pong Reservoir is the most important fish reservoir in the foothills of the Himalayas in Himachal Pradesh.

#### Why are Locals protesting?

- For over five decades, more than 25,000 individuals displaced by the construction of the Pong Dam on the Beas River in Himachal Pradesh have been anticipating relocation.
- These individuals, primarily dependent on farming in the dam's vicinity for their livelihoods, now face a new set of hurdles with the proposal of a draft policy suggesting the categorization of the Pong Dam as an eco-sensitive zone (ESZ).
- The proposed declaration is expected to impact the livelihoods of millions of people, complicating both the relocation process for the displaced residents and causing delays in any development initiatives in the region.

### What is Eco Sensitive Zone?

- The National Environment Policy (2006) defined Eco-Sensitive Zones "as areas/zones with identified environmental resources having incomparable values which require special attention for their conservation" because of its landscape, wildlife, biodiversity, historical and natural values.
- In order to protect the environment and the biological integrity of the area outside the protected areas and other such areas where an ecosystem has been adversely affected due to anthropogenic and climatic factors, the Ministry of Environment, Forest and Climate Change has been declaring such areas as Eco-sensitive zones/ areas.
- In other words, it is a type of designation of an area rich in environmental resources and needs special protection.
- **Purpose:**
  - Protect the environment and avoid its degradation due to anthropogenic activities.
  - Create some kind of barrier/ shock absorber for the specialized ecosystem (PAs).
  - Act as a transition zone from areas of higher protection to less protection areas.

### • Objective:

- To maintain the response level of an ecosystem within the permissible limits w.r.t environmental parameters.
- To notify the area as an Eco-sensitive zone and to regulate the developmental activities sustainably, considering the needs and aspirations of the local people.

### Ecological Importance of the Pong Dam area:

- Pong Dam area is considered to be the resting place of hundreds of thousands of exotic birds every year. It was declared a **Ramsar Wetland Site in 2002** and notified as a **wildlife sanctuary in 2013**.
- Every year more than 100,000 birds migrate here from Central Asia, Mongolia, Siberia and China. Some of the birds that migrate here are bar-headed geese, gray light goose, common teal and cormorants.
- The government should engage in genuine dialogue with displaced people to address their concerns and find solutions that ensure environmental protection and well-being.



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## SCIENCE AND TECHNOLOGY

### Six space missions to be excited for in 2024

**News Excerpt:**

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The year 2023 proved important for space missions, with **NASA's OSIRIS-REx** mission returning a sample from an asteroid and **India's Chandrayaan-3 mission** exploring the lunar south pole region.

**More about the news:**

Several new missions under NASA's Artemis plan and Commercial Lunar Payload Services initiative will target the Moon.

- The latter half of the year will feature several exciting launches, with the **Martian Moon eXploration mission** launch in September, **Europa Clipper** and **Hera** in October and **Artemis II** and **VIPER** to the Moon in November – if everything goes as planned.

Six Space Missions for Moon Exploration in 2024		
Space Missions	Key points	Other Important Points
<b>Europa Clipper</b>	<b>NASA will launch Europa Clipper, exploring one of Jupiter's largest moons, Europa.</b>	<ul style="list-style-type: none"> <li>Europa is slightly smaller than the Earth's Moon, with a <b>surface made of ice</b>.</li> <li>Beneath its icy shell, Europa likely harbours a <b>saltwater ocean</b>, which scientists expect contains over <b>twice as much water as all the oceans here on Earth combined</b>.</li> <li>With Europa Clipper, scientists will investigate whether <b>Europa's Ocean could be a suitable habitat for extraterrestrial life</b>.</li> </ul>
<b>Artemis II launch</b>	<b>Artemis II</b> is the first crewed step in this plan, with four astronauts planned to be on board during the 10-day mission.	<ul style="list-style-type: none"> <li>The mission builds upon Artemis I, which sent an uncrewed capsule into orbit around the Moon in late 2022.</li> <li>The Artemis programme, named after Apollo's twin sister in Greek mythology, is <b>NASA's plan to return to the Moon</b>.</li> <li>Artemis II will put the astronauts into orbit around the Moon before returning them home.</li> </ul>
<b>VIPER</b>	VIPER, which stands for <b>Volatiles Investigating Polar Exploration</b>	<ul style="list-style-type: none"> <li><b>It will look for water on the Moon.</b></li> <li>This robotic mission is designed to search for volatiles, which are molecules that easily</li> </ul>

	<b>Rover</b> , is a robot the size of a golf cart that NASA will use to <b>explore the Moon's south pole in late 2024</b> .	<p><b>vaporize, like water and carbon dioxide</b>, at lunar temperatures. These materials could provide resources for future human exploration on the Moon.</p> <ul style="list-style-type: none"> <li>The VIPER robot will rely on batteries, heat pipes, and radiators throughout its 100-day mission as it navigates everything from the extreme heat of lunar daylight.</li> </ul>
<b>Lunar Trailblazer and PRIME-1 missions</b>	NASA has recently invested in a class of small, low-cost planetary missions called SIMPLEX, which stands for <b>Small, Innovative Missions for Planetary Exploration</b> .	<ul style="list-style-type: none"> <li>These missions save costs by tagging along on other launches as what is called a rideshare or secondary payload.</li> <li>One example is the <b>Lunar Trailblazer</b>. Like VIPER, the Lunar Trailblazer <b>will look for water on the Moon</b>.</li> <li>PRIME-1 will drill into the Moon – it's a test run for the kind of drill that VIPER will use.</li> </ul>
<b>JAXA's Martian Moon eXploration (MMX) mission</b>	The Japanese Aerospace Exploration Agency, or <b>JAXA</b> , has a robotic mission in development called the <b>Martian Moon eXploration, or MMX</b> , planned for launch around September 2024.	<ul style="list-style-type: none"> <li>The JAXA MMX mission concept is to <b>study Phobos and Deimos, Mars' moons</b>.</li> <li>While the Earth's Moon has many visitors – big and small, robotic and crewed – planned for 2024, <b>Mars' moons Phobos and Deimos</b> will soon be getting visitors as well.</li> <li>The mission's main science objective is to determine the origin of Mars' moons.</li> </ul>
<b>ESA's Hera mission</b>	Hera is a mission by the <b>European Space Agency (ESA)</b> to return to the Didymos-Dimorphous asteroid system that <b>NASA's DART mission visited in 2022</b> .	<ul style="list-style-type: none"> <li>Hera will <b>launch in October 2024</b>, making its way in late <b>2026 to Didymos and Dimorphous</b>, where it will study the <b>physical properties of the asteroids</b>.</li> </ul>

**Way Forward:**

Different space missions are going to happen in 2024, which will further strengthen our knowledge of space and more findings that we are unaware of today. It will bring more excitement to the space field and also help us find life in a different universe.

**PEPPER IT WITH:**  
 NASA, ISRO, Chandrayaan mission, NASA's Artemis Mission, Space Exploration

**ISRO's Aditya-L1 was successfully placed in a halo orbit around the L1 point**

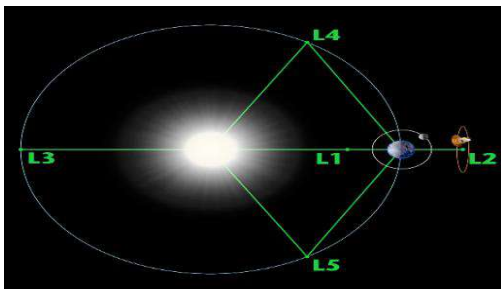
**News Excerpt:**

The Indian Space Research Organisation (ISRO) has placed the Aditya-L1 spacecraft in a halo orbit around the Lagrangian point (L1).

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**Key Points:**

- Aditya-L1, the first Indian space-based observatory to study the Sun, was launched on September 2, 2023, from the Satish Dhawan Space Centre in Sriharikota.
- After a 1.5 million km journey, the spacecraft was placed in a halo orbit around L1.
- The **Polar Satellite Launch Vehicle- C57 (PSLV-C57)** carried the solar probe into space.



**Background:**

- Indian scientists have so far observed the Sun through telescopes on the ground and relied on data from other solar missions.
- Aditya-L1 presents a unique opportunity to address the existing gaps and complement newer data to address the unsolved problems in solar physics.

**Need for studying the Sun from space:**

- Studying the Sun helps us **understand more about other stars.**
- The Sun has various explosive phenomena. These can damage our satellites and communication systems.
  - Studying the Sun and its effects on space weather may help provide early warnings for such events.
- **Earth's atmosphere and the magnetic field** act as **protective shields blocking harmful radiations, such as UV light.**

- This means studying the Sun from the Earth can only provide a partial picture.

**Objectives of Aditya L-1 mission:**

- The mission's main objective is to expand our knowledge of the Sun and how its radiation, heat, flow of particles, and magnetic fields affect us.
- **Below is the list of objectives that the mission will embark upon:**
  - Study of **Solar upper atmospheric (chromosphere and corona) dynamics.**
  - Study of **chromospheric and coronal heating**, partially ionized plasma physics, coronal mass ejections initiation, and flares.
  - Observe the in-situ particle and plasma environment, providing data for studying particle dynamics from the Sun.

Space agencies of different countries exploring the Sun	
NASA (USA)	Parker Solar Probe
JAXA (Japan)	HINOTORI, HINODE
ESA (Europe)	ULYSSES, PROBA-3, SMILE
China	ASO-S
NASA + ESA	The Solar Orbiter

- Physics of solar corona and its heating mechanism.
- Diagnostics of the coronal and coronal loops plasma: Temperature, velocity and density.
- Development, dynamics and origin of **Coronal Mass Ejections (CMEs).**
- Identify the sequence of processes that occur at multiple layers (chromosphere, base and extended corona) that eventually lead to solar eruptive events.
- Magnetic field topology and magnetic field measurements in the solar corona.
- Drivers for space weather (origin, composition and solar wind dynamics).

Payloads: The spacecraft will carry seven payloads to observe solar activities for five years.			
Type	S. No.	Payload	Capability
Remote Sensing Payloads	1.	Visible Emission Line Coronagraph (VELC)	Corona/Imaging & Spectroscopy
	2.	Solar Ultraviolet Imaging Telescope (SUIT)	Photosphere and Chromosphere Imaging- Narrow and Broadband
	3.	Solar Low Energy X-ray	Soft X-ray spectrometer: Sun-

		Spectrometer (SoLEXS)	as-a-star observation
	4.	High Energy L1 Orbiting X-ray Spectrometer (HEL10S)	Hard X-ray spectrometer: Sun-as-a-star observation
<b>In-situ Payloads</b>	5.	Aditya Solar Wind Particle Experiment (ASPEX)	Solar wind/ Particle Analyzer Protons and heavier Ions with directions
	6.	Plasma Analyser Package for Aditya (PAPA)	Solar wind/ Particle Analyzer Electrons and heavier Ions with directions
	7.	Advanced Tri-axial High-Resolution Digital Magnetometers	In-situ magnetic field (Bx, By and Bz)

**Way Forward:**

Landing on the Sun will remain a formidable challenge due to its extreme temperatures. Missions like Aditya-L1 are poised to unlock valuable insights into our star, the Sun, from their vantage point in space.

**PEPPER IT WITH:**

CME, Aditya-L1, PSLV-C57, Halo orbit

**Meet ISRO's new X-ray eye in the sky**

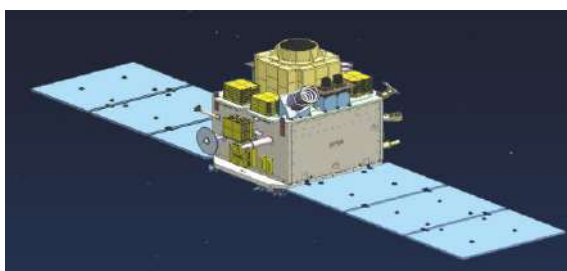
**News Excerpt:**

The successful launch of the **X-ray Polarimeter Satellite (XPoSat)** by the Indian Space Research Organisation (ISRO) ushers in a new era of astronomical exploration. This innovative payload, entirely indigenous in design and fabrication, promises to unlock profound cosmic secrets through its cutting-edge instrument, the **Indian X-ray Polarimeter (POLIX)**.

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**Key points:**

- XPoSat (X-ray Polarimeter Satellite) is India's first dedicated polarimetry mission to study various dynamics of bright astronomical X-ray sources in extreme conditions.
- XPoSat is the world's second satellite-based mission to make X-ray polarimetry measurements.
- Its launch vehicle was ISRO's PSLV-C58.

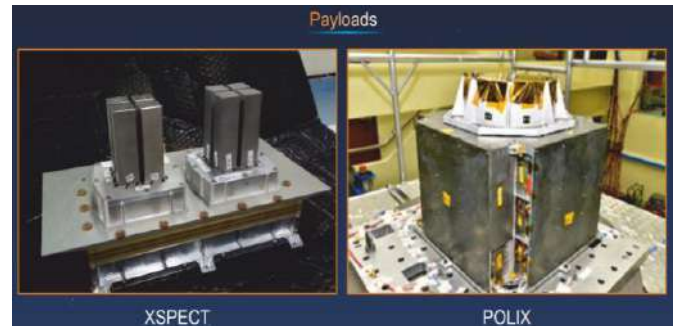


**Mission Objective:**

The primary goal of XPoSat is to study the polarization of X-rays coming from bright celestial sources in the medium frequency band. This is achieved through two scientific payloads: POLIX and XSPECT, developed by institutions in Bengaluru.

**Payloads on XPoSat:**

- **POLIX:** It is the world's first instrument operating in the 8 to 30 keV energy band. It includes a collimator and four X-ray proportional counter detectors to observe astronomical sources, particularly those emitting polarized X-rays.
  - Moreover, there is a scatterer consisting of four X-ray proportional counter detectors (that prevent the trapped light from escaping).
  - It will observe a few tens of astronomical sources.
  - It was conceived, designed, and built at Raman Research Institute (RRI), Bangalore.



- **XSPECT:** It is designed for fast timing and high spectroscopic resolution in the 0.8-15 keV energy band. It observes various sources such as X-ray pulsars, black hole binaries, neutron stars, AGNs, and magnetars.

**Significance of XPoSat:**

- XPoSat will be a game-changer in enabling X-ray polarization measurements from bright sources, specifically in the medium energy band (8-30 keV), which has not been attempted previously.
- Studying polarized X-rays from sources like magnetars, black holes, and neutron stars can provide insights into the nature of radiation and the processes involved in its generation.

**POLIX's Role in Astrophysical Exploration:**

- XPoSat's POLIX is a complementary asset to global efforts in X-ray polarimetry.
- While previous attempts with balloon-borne instruments paved the way, recent endeavours like NASA's Imaging X-ray Polarimetry Explorer (IXPE) highlight the growing interest in this field.
- POLIX's unique capabilities promise to fill crucial gaps in understanding polarized X-rays from cosmic sources, offering a new lens to observe and decode celestial mysteries.

**Way Forward:**

The successful launch of XPoSat marks a significant leap for Indian astronomers, promising unparalleled opportunities to delve into the enigmatic realms of the universe. With its mission set to unravel the mysteries concealed within polarized X-rays from celestial sources, XPoSat is poised to redefine our understanding of cosmic phenomena and unveil new frontiers in astrophysics.

**PEPPER IT WITH:**  
 ISRO, XPoSat, PSLV, POLIX, IXPE, X-ray polarimetry measurements

**SETI & METI**

**News Excerpt:**

Search for Extra-terrestrial Intelligence (SETI) is as fascinating for the casual observer as it is for an engaged specialist.

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**Radio Signals vis-a-vis Neutrino Signals:**

- Researchers use electromagnetic wave signals across the cosmos to identify ourselves and others, ranging from narrow-frequency radio signals to wideband signals.
  - However, differentiating naturally occurring waves (like radio noise from the magnetosphere of Jupiter or the environs of stars) from those transmitted from more interesting sources is challenging.
    - Space waves are distorted during their journey to Earth, and their information may not survive the journey intact.
- Scientists are exploring the possibility of extraterrestrial intelligence communicating with us through neutrinos, the most abundant particles in the universe after photons.
  - Neutrinos are subatomic particles. After photons, light particles are the most abundant particles in the universe.
  - Neutrinos interact weakly with matter and can move relatively untouched through the same media as electromagnetic waves.

**Recent developments and collaborative efforts:**

- Scientists are studying instances of radioactive decay that involve neutrinos. A 2017 experiment at Purdue University found that the decay rate of radioactive manganese declined sharply due to small changes in the ambient flow of neutrinos.
  - The scientists proposed setting up decay experiments at different sites worldwide and analyzing the collected data for signs of a non-uniform neutrino flux, which could be associated





with events in outer space. They called their proposal **NU-SETI**.

- They premised that this is an experimental fact that advanced extraterrestrial civilizations could understand and use to communicate with us.
- Some METI efforts suggest physical structures or artefacts built by aliens, such as light from the star **KIC 8462852**, which exhibited a periodic dimming pattern.
  - One hypothesis is that an alien structure obstructs our view of the star.
- SETI and METI programs have collaborated on scientific initiatives to increase technical understanding and literacy of human longevity and sustenance on multigenerational timescales.

**Search for Extraterrestrial Intelligence (SETI):**

- It is a scientific adventure that aims to discover life on other planets, particularly intelligent beings, with technological advancements equal to our own.

### Messaging Extraterrestrial Intelligence (METI)

-  It is a scheme to communicate with intelligent alien life in outer space. It began in 1960 and has evolved over the years.
-  NASA launched Pioneer 10 and 11 spacecraft in 1972 and 1973 to study the outer Solar System. Each spacecraft carried a plaque depicting human bodies, hydrogen atom properties, cosmic landmarks, and an image of the spacecraft.
-  In 1974, scientists like Frank Drake and Carl Sagan encoded a graphical message into radio waves and broadcasted it to the M13 globular cluster.
-  METI has gained momentum in recent decades with satellites and astronomy programs aiming to find exoplanets orbiting other stars.

**Challenges:**

- Performing SETI or METI activities is challenging due to our limited indirect methods to traverse space, and one has no clear expectations of what one should find.
- SETI and METI practitioners are likely to be intercepted or received in specific parts of space or on specific worlds, requiring attention to language, content, and medium properties.

**Way Forward:**

- SETI and METI practitioners have also had to consider interstellar aspirations, such as Elon Musk's aspiration to colonize Mars and a new space race to establish bases on the Moon.

- These efforts demand scholars working as a global community to understand life, its existence, forms, and identification.
- They need to pay attention to the language and the content while also considering the properties of the transmission medium.
- Efforts should include radio signals, optical telescopes, laser light, and neutrinos. The ultimate goal is to understand the universe and its potential intelligence.

**PEPPER IT WITH:**  
SETI, METI, NU-SETI, KIC 8462852, magnetosphere

### Electronic Soil - "eSoil"

**News Excerpt:**

Linköping University's study introduces an innovative **hydroponics method** using an **electrically conductive substrate** called "**electronic soil**" or "**eSoil**".

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**About e-soil:**

- eSoil is based on the blend of the **conjugated polymer PEDOT: PSS** (poly(3,4-ethylenedioxythiophene): polystyrene sulfonate) and carboxymethylated cellulose nanofibrils.
  - Its **active material** is an **organic mixed ionic electronic conductor**, while its **main structural component** is **cellulose**, the most abundant biopolymer.
- It offers a **low-energy, safe alternative** to previous methods that relied on high voltage and non-biodegradable materials like **mineral wool**.
- It can **stimulate** the plant's **root** system and growth environment in hydroponics settings.

**Barley seedling experiment:**

- Barley seedlings were grown within the eSoil with the **root system integrated** within its porous matrix.
- Simply by **polarising** the eSoil, seedling growth is accelerated, **increasing dry weight** on average by 50% after 15 days of growth.
- The effect is evident in **root and shoot** development and occurs during the growth period after the stimulation.
- The stimulated plants **reduce** and **assimilate** NO<sub>3</sub> more efficiently.
  - This may have implications for **minimizing fertilizer use**.

**Significance:**

- eSoil consumes **little power**, and its main structural component is **cellulose**, the most abundant polymer.

- This work opens the pathway for using physical stimuli to **enhance plant growth** but also provides a platform to understand better plant responses to **electric fields**.
- This discovery expands the **range of crops** suitable for hydroponic cultivation and demonstrates the potential for **more efficient growth** with **fewer resources**.
- eSoil's low energy consumption and safety features, combined with the benefits of hydroponic cultivation, including **space efficiency** through **vertical farming**, present a sustainable solution to the **growing demands for food**.
  - The research is a significant step toward **enhancing urban agriculture**.
- Areas with limited **arable land**, **poor soil quality**, and **harsh environmental conditions** can benefit from hydroponic food production.
- Hydroponics have several advantages over soil cultivation, particularly higher water use efficiency and less use of fertilizers.
  - **Water use efficiency (WUE)**, in terms of the amount of harvested product per unit of water supply, is maximized in hydroponics as the water is reused, which cannot be done in soil cultivation.
  - Regarding **fertilizer use**, hydroponics also has an advantage as, in Soil, the crops take up less than 50% of the nutrients, while in hydroponics, the **nutrient solution** can be **recirculated** in the system.

**Way Forward:**

- eSoil **opens the pathway** for developing active hydroponic scaffolds that may sustainably increase crop yield.
  - However, **more studies are required** to explain mechanistically the physical and biological processes involved.
- E-soil can solve the Soil-related problems that affect the world's food system, but proper research and implementation are needed.

Hydroponics method, Water use efficiency, fertilizer use

### Bubble Baby Syndrome - SCID

**News Excerpt:**

A **two-month-old girl** with bubble baby syndrome has become one of the youngest patients in the country to undergo a **bone marrow transplant (BMT)** from an unrelated donor.

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**About the Bubble Baby Syndrome:**


- Severe combined immunodeficiency (**SCID**) is a group of **rare disorders** caused by mutations in different genes involved in the development and function of infection-fighting immune cells.

**ONLY 1 IN 60K AFFECTED BY DISEASE**

> Severe combined immunodeficiency (SCID) is a rare, genetic disorder, affecting 1 in 60,000 babies

> It is often called 'bubble boy disease', as the child has to stay in a sterile environment or "bubble"

> Children with SCID don't have an immune system



to defend the body from bacteria, viruses, parasites, fungi

> Child with SCID is treated with a stem cell transplant, also known as bone marrow transplant

> With new bone marrow, the child's body can build a whole new, functional immune system

- SCID is often called bubble baby disease.
  - Most often, SCID is inherited in an **autosomal recessive pattern**, in which **both copies** of a **particular gene**—one inherited from the mother and one from the father—contain defects.
- Infants with SCID **appear healthy at birth** but have **no functioning immune system**, meaning that even a normally mild infection can be fatal.

**Types of SCID:**

- The **best-known form** of autosomal recessive SCID is caused by adenosine deaminase (**ADA**) deficiency, in which infants **lack the ADA enzyme** necessary for **T-cell survival**.
- X-linked SCID**, which is caused by **mutations in a gene** on the **X chromosome**, primarily **affects male infants**.
  - Children with this type of SCID have **white blood cells** that grow and develop **abnormally**.
  - Consequently, they have **low numbers of T cells** (white blood cells that identify and attack perceived "invaders"), and their **B cells** (white blood cells that produce antibodies against infection) **do not function**.

**Symptoms and Diagnosis:**

- Symptoms of SCID occur in infancy and include **serious or life-threatening infections**, especially **viral infections**, which may result in **pneumonia** and **chronic diarrhoea**.
- Research supported by the National Institute of Allergy and Infectious Disease (**NIAID**), **USA** and other organizations has shown that **early diagnosis** of SCID through newborn screening leads to **prompt treatment** and **high survival rates**.

- To confirm a SCID diagnosis, a doctor will **evaluate the numbers and types of T and B cells present and their ability to function**.

**Treatment:**

- The condition is fatal, usually within the first year or two of life, unless infants receive immune-restoring treatments, such as transplants of blood-forming **stem cells**, **gene therapy**, or **enzyme therapy**.
  - Stem cell transplantation:** Hematopoietic (blood-forming) stem cell transplantation is the **standard treatment** for infants with SCID.
    - Transplants from **matched siblings** lead to the best restoration of immune function, but if a matched sibling is unavailable, infants may receive stem cells from a **parent or an unrelated donor**.
    - These transplants are life-saving but often only **partially restore immunity**.
  - Enzyme replacement therapy:** Children with SCID with Adenosine deaminase (**ADA**) deficiency have been successfully treated with **PEG-ADA** enzyme replacement therapy.
  - Gene therapy:** Studies also have shown that gene therapy can be an effective treatment for some types of SCID, including **X-linked SCID**.
    - In gene therapy, **stem cells** are obtained from the **patient's bone marrow**, the **normal gene is inserted** into the stem cells using a carrier known as a vector, and the **corrected cells are returned** to the patient.

**Way Forward:**

- Rare diseases are a big issue in our country. There will be a need for proper health practices, ensuring the availability of new health technology and its training.
- There should be a specific budgetary grant in the general budget for rare diseases.

**PEPPER IT WITH:**

SCID, ADA, Gene therapy, NIAID, BMT

**Wastewater Surveillance for Vector-Borne Diseases**

**News Excerpt:**

There is a debate on the feasibility of using wastewater surveillance to track malaria and dengue in India.

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**More details on the news:**

- Wastewater surveillance has proven effective in certain contexts, but its application to tracking vector-borne diseases in India presents unique challenges.
- The debate revolves around the issue of whether India should also use wastewater surveillance to track vector-borne diseases like developed countries.

### Vector-Borne Diseases in India

- Vector-borne diseases (VBDs) have been a public issue in India for decades. VBDs have become a serious threat to the health and well-being of the population.
- In 2021, the leading cause of death due to vector-borne diseases was dengue, with a total of 247 deaths across the country.
- The reasons for the spread of diseases include climate change, lack of sanitation and cleanliness, and stagnant water, which can be a breeding ground for mosquitoes.

#### Purpose of ICD



### Steps taken by the government to control vector-borne disease

- In view of its vector-borne disease burden like malaria, dengue, chikungunya, Japanese encephalitis, lymphatic filariasis and kala-azar, India has set ambitious goals to eliminate and eradicate malaria and lymphatic filariasis by 2030.
- **The National Vector Borne Disease Control Programme (NVBDCP)** is an umbrella programme for preventing and controlling vector-borne diseases.
- The Directorate of **National Vector Borne Disease Control Programme (NVBDCP)** is the central nodal agency for the prevention and control of six vector-borne diseases (VBDs): Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya in India.
- Through the Union Health Ministry, the government has proactively responded to the heightened risk of vector-borne diseases in India.
- The ministry occasionally issues advisories to states and Union Territories, urging collaboration with civic agencies for swift action.

#### Way Forward:

- **Comprehensive surveillance approach:** A comprehensive approach combining wastewater

**PEPPER IT WITH:**  
 DPI, SDG 3, NVBDCP, TIGS, Vector-Borne Diseases

### Vector-Borne Diseases

- Vectors act as a medium for transmitting infectious germs from animals to humans and, in some cases, between humans.
- These organisms first get infected by the disease-causing pathogens, and once infected, they can transmit the pathogen to humans throughout their lives whenever they come in contact with a human host.
- Diseases transmitted through such vectors are called vector-borne diseases.
- Some vector-borne disease examples are **Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya.**

and mosquito surveillance is crucial to address the complexities posed by these diseases.

- **Careful pathogen selection for wastewater surveillance:** The selection of priority pathogens for wastewater surveillance should carefully consider India's specific context, sanitation systems, and host-parasite geography.
- **Integrated surveillance strategy:** While wastewater surveillance holds promise, a balanced strategy integrating multiple surveillance methods is essential for a more effective and accurate disease monitoring system.
- **Digital public infrastructure:** The role of **Digital Public Infrastructure (DPI)** is important in advancing **SDG 3 (Good Health and Well Being)** by leveraging digital technologies for healthcare solutions.
- **Collaborative efforts for SDG 3:** There is a need for active participation and collaboration between the government, private sector, and non-governmental social welfare organizations to collectively contribute to achieving the 2030 target for SDG 3.

### The blood management system needs a fresh infusion

#### News Excerpt:

A recent report by the World Health Organization (WHO) has brought attention to the global disparities in blood collection.

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#### Key findings of the report:

- Despite having **14%** of the **global population**, countries in the **WHO African region** could **only collect 5%** of the global donations.
- **Low-income** and **lower-middle-income** nations received **2%** and **24%** of the worldwide contributions, respectively, even though their populations account for **only 8% and 40%** of the global population.

- According to **WHO's standards** for self-sufficiency, **India** collected around **1.27 crore blood units** and faced a **shortage** of over **six lakh units** in 2019-20.
  - While India has improved its blood management ecosystem, the country still faces a **perennial shortage** of blood units, impacting critical healthcare services.
- Such shortages can have **serious implications** on the functioning of the healthcare system and, if addressed promptly, can significantly contribute to **saving lives**.

#### Significance of blood availability:

- Blood and its various products play a crucial role in several **medical scenarios**, including scheduled **surgeries** and **emergency procedures**, as well as in treating conditions such as **cancer**, **thalassemia**, and **postpartum haemorrhage (PPH)**.
- For example, according to a **Savitribai Phule Pune University study**, an **automobile accident victim** needs up to **50 units of blood**.
  - In 2019-20, the shortage was significant enough to put approximately **12,000 accident victims'** lives at risk.
  - Moreover, this deficit could impact **1,00,000 heart surgeries** and approximately **30,000 bone marrow transplants**.

#### Challenges and concerns:

- According to the data tabled in **Parliament**, from 2014-15 to 2016-17, a surplus of **30 lakh blood units** and related products were **discarded**.
  - The primary reasons were **expiration** from not being used, **degradation** during storage and the presence of **infections** such as human immunodeficiency virus (**HIV**) and **syphilis**.
- Another aspect of the blood management system that perpetuates the **inequities** associated with it is the **propagation of myths** and **misinformation** around voluntary blood donation.
  - Many people still refrain from donating blood voluntarily because of the **fear of infections** damaging their **immunity** or simply because they assume it to be **time-consuming**.

#### Hub and Spoke model of blood management system:

- It is an innovative method with **high-volume blood banks as a hub** for smaller blood centres.
  - This model can be particularly relevant for **resource-constrained settings** in Low- and Middle-Income Countries (**LMIC**) as it can **address critical gaps in blood availability and distribution**, thereby enhancing the accessibility and availability of blood and its products.
- As the shelf life of blood and its products is short, a hub and spoke model would help **optimize their utilization** by the smaller blood centres.

- This approach **streamlines distribution**, ensuring these vital resources reach their maximum potential while reducing losses from expiration.
- Moreover, implementing a hub and spoke model can **improve accessibility** to safe blood and its products in **community health centres** and smaller **sub-district hospitals**, especially in geographically challenging topographies.

#### Way Forward:

- The private sector can collaborate with the government to form robust public-private partnerships (**PPP**) and launch **grassroots campaigns** using **social media** and innovative tools like **multilingual comics**.
  - These creative strategies can engage diverse audiences and promote informed, voluntary blood donation, fostering a **culture of informed donation**.
  - Simultaneously, the **active participation of the citizenry** should also be a pivotal aspect of this concerted effort.

#### PEPPER IT WITH:

WHO, LMIC, postpartum haemorrhage, Hub and Spoke model of blood management system

## PRE-SHOTS

### HEALTH

#### Warm Vaccine against current strains of SARS-CoV-2

##### News Excerpt:

A heat-tolerant vaccine developed by the IISc researchers is said to be effective against all current strains of SARS-CoV-2 and **can be quickly adapted for future variants as well**.

##### Past Development:

- Since the beginning of the COVID-19 pandemic, researchers have been working on developing a heat-tolerant vaccine that can offer protection against different strains of **SARS-CoV-2 – both current and future variants**.
- Researchers have reported the design of a synthetic antigen that can be manufactured as a potential COVID-19 vaccine candidate in **NPJ Vaccine magazine**.

##### The process applied in inventing Vaccine:

- After analyzing various proteins found in the virus, the researchers selected two parts of SARS-CoV-2's spike protein – **the S2 subunit and the Receptor Binding Domain (RBD)** – for designing their vaccine candidate.
- The S2 subunit is **highly conserved and mutates much less** than the S1 subunit, which is the target of most current vaccines.

- Scientists have also known that the **RBD can provoke a strong immune response** in the host. Therefore, the team combined these two components of a hybrid protein called RS2.
- The researchers **used mammalian cell lines** to study the expression of the hybrid protein.

## New drug-making standards after overseas deaths

### News Excerpt:

After several overseas deaths allegedly linked to India-made drugs, the Union Health Ministry has notified its **Good Manufacturing Practices (GMP)** that aim to ensure the quality of drugs made in the country, directing pharmaceutical companies to implement them within a year.

### About the new Good Manufacturing Practices (GMP):

- Large companies with more than Rs 250 crore turnover must **implement** the guidelines **within the next six months**.
  - **Small and medium** manufacturers with a turnover of less than Rs 250 crore will **get a year**.
- The revised GMP guidelines focus on **quality control, proper documentation, and IT backing to maintain the quality of medicines produced**.
  - It also creates a **recall mechanism** for drug manufacturing companies.
- The new guidelines require companies to conduct **regular quality reviews of all their products, verify the quality and processes' consistency**, thoroughly investigate any deviation or suspected defect, and implement preventive actions.
- In addition, the **new schedule M also lists the requirements for additional types of products**, including biological products, agents with radioactive ingredients, or plant-derived products.
- Companies must **market a finished product only after getting "satisfactory results" on tests of the ingredients** and retain a sufficient quantity of the samples of intermediate and final products to allow repeated testing or verification of a batch.

### Challenges regarding drug manufacturing in India:

- A risk-based assessment of 254 manufacturing units and 112 public testing labs by the apex drug regulator **found poor documentation and a wide range of deficiencies** in -
  - **Process and analytical validations,**
  - **Self-assessment,**
  - **Failure investigation,**
  - **Internal quality review,**
  - **Testing of incoming raw materials,**
  - **Infrastructure to avoid cross-contamination,**
  - **Professionally qualified employees,**

- **Faulty design of manufacturing and testing areas.**
- Last year, **Indian syrups and eye drops** were allegedly **found to be contaminated**.
  - The **WHO and other health authorities** have **linked Indian cough syrups** to the deaths of at least 141 children in Gambia, Uzbekistan, and Cameroon.

## A new antibiotic to target a drug-resistant bacterium

### News Excerpt:

Researchers have identified a **new class of antibiotics, Zosurabalpin**, with the potential to **tackle a drug-resistant bacterium, Acinetobacter baumannii**.

### About the bacteria 'Acinetobacter baumannii':

- **Acinetobacter baumannii** is a **Gram-negative bacteria**, meaning it is **protected by inner and outer membranes, making it difficult to treat**.
  - Antibiotic-resistant infections pose an urgent threat to human health, particularly those caused by a large group of **Gram-negative bacteria** protected by an **outer shell containing a substance called lipopolysaccharide (LPS)**.
  - LPS allows bacteria to live in harsh environments, and it also allows them to evade attack by our immune system.
- According to the US Centres for Disease Control and Prevention, it can cause serious **infections in the lungs, urinary tract and blood**.
- It's **resistant to a class of broad-spectrum antibiotics** called **carbapenems**.
- Carbapenem-resistant Acinetobacter baumannii, also known as **CRAB**, was at the top of the World Health Organization's list of antibiotic-resistant "priority pathogens" in 2017.
- CRAB is classified as a **priority 1** critical pathogen by the World Health Organization, alongside two other drug-resistant forms of bacteria: Pseudomonas aeruginosa and Enterobacteriaceae.
- CRAB accounts for about 2% of infections found in US hospitals.
  - It's more common in Asia and the Middle East and causes up to 20% of infections in intensive care units worldwide.

- Drug discovery that targets harmful **Gram-negative bacteria** is a long-standing challenge owing to difficulties in getting molecules to cross the bacterial membranes to reach targets in the cytoplasm.
- **Gram-positive bacteria** are typically **less harmful and less antibiotic-resistant** than Gram-negative bacteria.

## National Essential Diagnostics List

### News Excerpt:

The Indian Council of Medical Research (ICMR) has begun **revising** the current National Essential Diagnostics List (NEDL).

### About National Essential Diagnostics List (NEDL)

- **Essential diagnostic tests** are defined as those "that satisfy the priority healthcare needs of the population and are selected with due regard to disease prevalence and public health relevance, evidence of efficacy and accuracy, and comparative cost-effectiveness".
- In 2018, the World Health Organisation recommended developing and implementing a NEDL to facilitate the availability of in-vitro diagnostics across the various tiers of the healthcare pyramid in facilities with or without an onsite laboratory.
  - **ICMR then released India's first NEDL in 2019** to make the availability of diagnostics an essential component of the healthcare system.
- The NEDL lists the essential and most basic tests that should be available at various levels of healthcare facilities in the country, including at the village level, in sub-health centres, health and wellness centres, and primary health centres.

### National Essential Diagnostics List (NEDL) 2019

- It aimed to bridge the gap of the then regulatory system, which **did not cover all medical devices and in-vitro diagnostic devices (IVD)**.
- With this list, **India became the first country** to compile a list that would guide the government in deciding the kind of diagnostic tests required by different healthcare facilities in villages and remote areas.
- It enabled improved healthcare service delivery through evidence-based care, improved patient outcomes and reduced out-of-pocket expenditure, effective utilization of public health facilities, effective assessment of disease burden, disease trends, surveillance, and outbreak identification, and addressed antimicrobial resistance crisis.

### Recent updates on NEDL

- The ICMR has invited relevant stakeholders to suggest adding or deleting diagnostic tests to the current list by the end of February.
- The suggestions must be based on factors such as how essential a test is, the disease burden, and the alignment with Indian public health standards before proposing any additional tests to the existing list.

## Aminocyanine Molecules

### News Excerpt:

Scientists have identified a novel method to eliminate cancer cells using **aminocyanine molecules**.

### About Aminocyanine molecules:

- These molecules can **break apart cancer cell membranes when stimulated by near-infrared light**.
- It is commonly used as a **synthetic dye in bioimaging**.
- It demonstrates over a million times faster mechanical motion than its predecessors.

### The Indian Council of Medical Research (ICMR)

- Sir Harcourt Butler established the India Research Fund Association (IRFA) on November 15, 1911.
  - In 1949, the IRFA was renamed the Indian Council of Medical Research.
- The Government of India funds the ICMR through the Department of Health Research, Ministry of Health & Family Welfare.
- Its vision is translating research into action to improve the population's health.
- The Indian Council of Medical Research (ICMR), New Delhi, the apex body in India for the formulation, coordination and promotion of biomedical research, is one of the oldest medical research bodies in the world.

- **Near-infrared light** holds significant importance, **facilitating deeper penetration into the body**.
- This breakthrough could potentially revolutionize the **treatment of cancers in bones and organs, eliminating the need for invasive surgeries**.

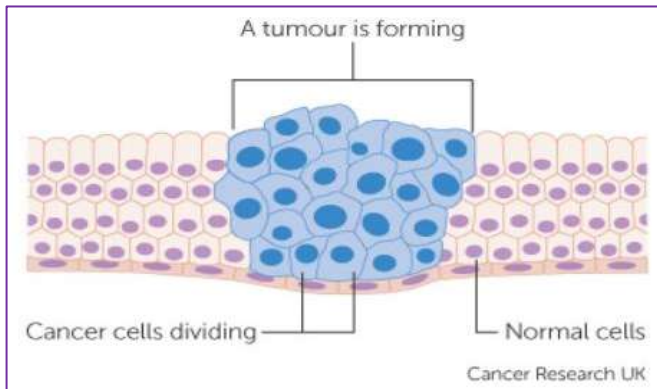
### How does it work on cancer cells?

- As these molecules move, the electrons within them form **plasmons**, collective vibrating entities that induce movement throughout the entire molecule.
- The plasmons, **resembling molecular arms, connect with cancer cell membranes** and, through vibrational movements, dismantle them.

### Difference between Cancer cells and Normal cells:

- **Cancer cells don't stop growing and dividing:**
  - Normal cells follow a typical cycle: They grow, divide and die. Cancer cells, on the other hand, don't follow this cycle. Instead of dying, they multiply out of control and continue to reproduce other abnormal cells.
- **Cancer cells ignore signals from other cells:**
  - Cells send chemical signals to each other all the time. Normal cells obey signals. But something in cancer cells stops the normal signalling system from working.

- **Cancer cells don't stick together:**
  - Cancer cells can lose the molecules on their surface that keep normal cells in the right place. So they can break away from their neighbours.



- **Cancer cells don't specialize:**
  - Unlike healthy cells, cancer cells don't carry on maturing or become so specialized.
  - Cells mature to carry out their function in the body. This maturing process is called **differentiation**.
- **Cancer cells don't repair themselves or die:**
  - Normal cells can repair themselves if their genes become damaged. This is known as DNA repair.
  - The molecules that decide whether a cell should repair itself are faulty in cancer cells.
    - For example, a protein called p53 usually checks if the cell can repair its genes or if it should die.
    - However, many cancers have a faulty version of p53, so they don't repair themselves properly.
- **Cancer cells look different:**
  - Cancer cells are different sizes, and some may be larger than normal while others are smaller, have an abnormal shape, and have a nucleus (control centre) that looks abnormal.

## SPACE

### SKA project

#### News Excerpt:

Recently, India has officially become a part of the **Square Kilometer Array (SKA)** project.

#### SKA project

- The Square Kilometer Array (SKA) project is an international effort to build the world's largest radio telescope, with eventually over a square kilometre (one million square meters) of collecting area.
- The scale of the SKA represents a huge leap forward in both engineering and research & development towards building and delivering a unique instrument, with the detailed design and preparation now well underway.

- As one of the largest scientific endeavours in history, the SKA will bring together a wealth of the world's finest scientists, engineers and policymakers to bring the project to fruition.

#### Significance of INDIA joining the SKA project:

- This **collaborative international effort** aims to construct the largest radio telescope in the world.
- Joining the SKA project brings significant science and tech benefits for India, similar to the **LHC (Large Hadron Collider)** and **ITER (International Thermonuclear Experimental Reactor)** successes.
- As a full member, **India gets preferential access to SKA facilities** that involve advanced electronics, software, materials science, and computing technologies.
- While SKA owns the intellectual properties, **all member countries**, including **India**, can access and learn from them.
- This participation **will expand India's science and tech capabilities**, offering training and capacity-building opportunities.

#### India's involvement in the SKA project:

- India has been actively engaged in the SKA project since its inception in the 1990s, playing a **key role in the telescope's design and development**.
- Additionally, India played a crucial part in negotiating the SKA Observatory Convention, the international treaty establishing the facility as an intergovernmental organization.
- The primary contribution from India involves developing and operating the Telescope Manager, **essentially the 'neural network' or software responsible for running the entire facility**.

#### Future Scope of the Project:

- There are **plans to establish a SKA regional centre in the country**, forming part of the global network responsible for processing, storing, and providing access to data for the scientific community.
- Indian scientists have identified several areas of research for which they want to use the SKA telescopes.
  - These include studies relating to the **evolution of the early universe, the formation and evolution of galaxies, neutron star physics, and solar sciences**.

#### Leif Erikson Lunar Prize awarded to ISRO for Chandrayaan-3

- ISRO has been awarded the 2023 Leif Erikson Lunar Prize by the Exploration Museum in Iceland's Husavik for its successful Chandrayaan-3 mission.
  - The award celebrates the first soft landing of a spacecraft near the lunar south pole.

### About Leif Erikson Lunar Prize:

- The Leif Erikson Award is an annual prize from the Exploration Museum in Husavik, Iceland, since 2015.
- It is named after Leif Erikson - a Norse explorer thought to be the first European to set foot on continental America, almost four centuries before the expedition of Christopher Columbus.
- It reveres trailblazers in the realm of lunar exploration, commemorating their significant contributions to humanity's quest for celestial understanding.

### Chandrayaan-3:

- Chandrayaan-3 marked a historic milestone as the lander module touched down on the Moon's South Pole.
  - This achievement positioned India as the **fourth nation, following the United States, China, and Russia, to achieve a successful lunar landing.**
  - Following the successful landing, the **Vikram lander and the Pragyan rover carried out various tasks on the lunar surface**, including-
    - Detecting elemental presence like sulphur,
    - Recording temperature differentials,
- Monitoring lunar activities.

## FEAST Software

### News Excerpt:

The Vikram Sarabhai Space Centre (VSSC) of the Indian Space Research Organisation (ISRO) has developed an **analysis software** called **FEAST (Finite Element Analysis of Structures)**.

### Vikram Sarabhai Space Centre (VSSC)

- It is the lead Centre of Indian Space Research Organisation (ISRO) under the Department of Space (DOS), Government of India.
- VSSC pioneers in **rocket research and launch vehicle projects of ISRO.**
- Its vision is to harness space technology for national development, while pursuing space science research and planetary exploration.

### About FEAST:

- FEAST (Finite Element Analysis of Structures) is the **structural** and **heat transfer** analysis software based on the **finite element method** realized by Vikram Sarabhai Space Centre.
- It is supported by state-of-the-art pre/post processor - **PreWin**. Its **sub-structured** and **multi-threaded** solver implementation ensures **high performance** by exploiting the multi-core architecture of modern computing platforms.

- The software can be deployed in **Linux** and **Windows** operating systems.

### Finite Element Analysis (FEA):

- It is a **computerized method** to **predict** how a **structure reacts** to real-world forces, such as structural loads and thermal conditions.
- It is **used** during a product's **design and development phase** to evaluate its **safety** and **ability** to withstand various loads without failure.
- It is available in **three versions**. The classification is based on the number of **finite element nodes** viz; **Academic** (for students and educational institutions), **Premium** (for small and medium scale industries) and **Professional** (for general large-scale applications).
- The book **Introduction to Finite Element Analysis** by ISRO covers the basic concepts and applications of FEA in an easy-to-understand manner.

### Significance of FEAST:

- It has **real-life applications** in **structural engineering**, **solid mechanics** and **heat transfer problems** of Aerospace, Automobile, Civil, Mechanical and Marine engineering.
  - It **performs** Finite Element Analysis (**FEA**) of various structures, including rockets, aircraft, satellites, buildings, etc.
- The **cost** of owning the software is a **fraction** of the price compared to similar non-indigenous software packages.
  - So far, users have mainly depended on expensive software versions from foreign firms for this function.
  - With FEAST, ISRO hopes to take this **indigenous FEA software** to the Indian user base.

## How satellites track weather

### News Excerpt:

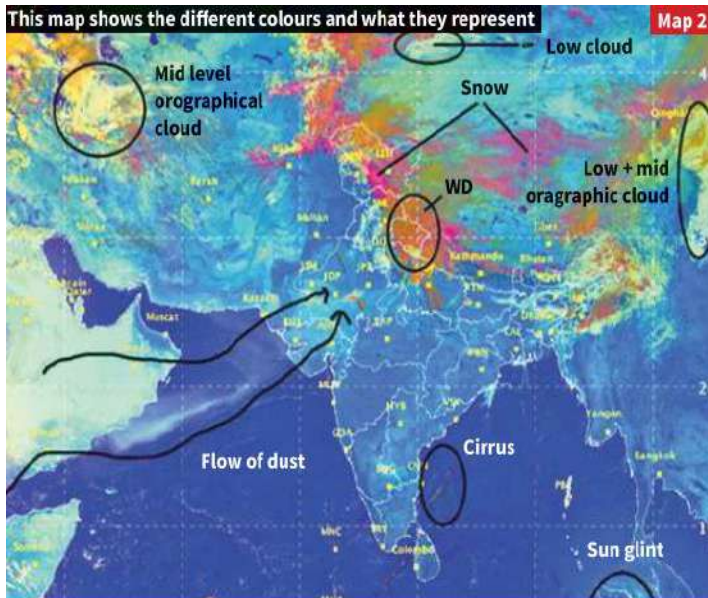
The Kalpana 1 and INSATs 3A, 3D, and 3DR satellites have bolstered India's weather monitoring and warning services.

### How do satellites obtain images of fog from space?

- According to a paper published by IMD scientists, the **INSAT 3D satellite** has a **red-green-blue, or RGB, imager** whose **images' colours** are determined by two factors: **solar reflectance** and **brightness temperature**.
- **Solar reflectance** is the **ratio of the amount of solar energy reflected by a surface and the amount of solar energy incident on it.**
- **Brightness temperature** means the **relationship between an object's temperature and its surface's corresponding brightness.**

- It is different from temperature as we usually understand it – like the temperature we 'feel' when we touch a glass of hot tea – because brightness temperature also has to do with how the tea glass emits thermal radiation at different frequencies in different directions.

### Day Microphysics:



- INSAT 3D's 'day microphysics' data component studies solar reflectance at three wavelengths: **0.5  $\mu\text{m}$  (visible radiation) determines the green colour, 1.6  $\mu\text{m}$  (shortwave infrared radiation) determines the red colour and 10.8  $\mu\text{m}$  (thermal infrared radiation) determines the blue colour.**

### How does the satellite track snow?

- The solar reflectance of snow and that of clouds is similar in the visible part of the spectrum; **snow strongly absorbs radiation of wavelength 1.6  $\mu\text{m}$ , i.e. shortwave infrared.**
- As a result, when the satellite tracks snow, the **red component of the colour scheme becomes very weak.**

### Night Microphysics:

- Here, **two colours are determined not by a single signal but by the strength of the difference between two signals.**
- The computer determines the **amount of red colour according to the difference between two thermal infrared signals: 12  $\mu\text{m}$  and 10  $\mu\text{m}$ .**
- The **amount of green colour varies according to the difference between a thermal infrared and a middle infrared signal: 10.8  $\mu\text{m}$  and 3.9  $\mu\text{m}$ .**

### Combining Day and Night Microphysics:

- By **combining day and night microphysics data**, atmospheric scientists can elucidate the **presence of moisture droplets of different shapes and**

**temperature differences over time and, in turn, track the formation, evolution and depletion of cyclones and other weather events.**

- For example, taking advantage of the fact that INSAT 3D can produce images based on signals of multiple wavelengths.
- **Both INSAT 3D and INSAT 3DR use radiometers to make their spectral measurements.**

### INSAT 3D:

- INSAT-3D is a dedicated **meteorological spacecraft designed for enhanced meteorological observation and monitoring of land and ocean surfaces for weather forecasting and disaster warning.**
- It was **launched on July 26, 2013, with a lift of mass of about 2100 kg by ARIANE-5/GSLV-MK II /Soyuz launcher.**

### INSAT 3DR:

- INSAT-3DR, similar to INSAT-3D, is an **advanced meteorological satellite of India configured with an imaging System and an Atmospheric Sounder.**
- The significant improvements incorporated in INSAT-3DR are:
  - **Imaging in the Middle Infrared band** to provide nighttime pictures of low clouds and fog;
  - **Imaging in two Thermal Infrared bands** for estimation of Sea Surface Temperature (SST) with better accuracy;
  - **Higher Spatial Resolution** in the Visible and Thermal Infrared bands.

### Kalpana 1:

- **METSAT** (renamed as Kalpana - 1 on February 5, 2003, after the Indian-born American Astronaut Dr. Kalpana Chawla, who died on February 1, 2003, in the US Space Shuttle Columbia disaster) is the first in the series of **exclusive meteorological satellites built by ISRO.**
- It provides the first set of transponders for **Swaran Jayanti Vidya Vikas Antariksh Upagraha Yojana (Vidya Vahini)** for interactive training and developmental communication, giving fillip to the training and developmental Communication channel of INSAT.

### INSAT 3DS (Upcoming):

- In February 2024, the Indian Space Research Organisation is expected to launch the **INSAT 3DS meteorological satellite onboard its GSLV Mk II launch vehicle, with a launch mass of two tonnes.**



## Peregrine Lander

### News Excerpt

The Peregrine One mission aims to locate water molecules on the Moon, has now **developed a critical fuel leak.**

### About the program:

- Astrobotic is the first of three US companies to send a lander to the Moon this year under a new private-public partnership with NASA.



- It will be the first American spacecraft to attempt to land on the Moon in more than half a century.
- Peregrine will touch down on a mid-latitude region of the Moon called **Sinus Viscositatis, or Bay of Stickiness.** It lies adjacent to the **Gruithuisen Domes near the Oceanus Procellarum, or Ocean of Storms.**
- Astrobotic is one of 14 vendors eligible to carry NASA payloads to the Moon through the **CLPS initiative.**
- The mission's scientific objectives are to study the lunar exosphere, thermal properties, and hydrogen abundance of **the lunar regolith, magnetic fields, and the radiation environment.**

### Commercial Lunar Payload Services (CLPS)

- NASA is working with several American companies to deliver science and technology to the lunar surface through the CLPS initiative.
- It began in 2018 and is designed to establish a commercial marketplace for science, exploration, and technology development investigations on the Moon's surface and in lunar orbit.
- These companies, ranging in size, bid on delivering payloads for NASA. This includes everything from payload integration and operations to launching from Earth and landing on the surface of the Moon.
- Under **Artemis**, commercial deliveries beginning in 2023 will perform science experiments, test technologies, and demonstrate capabilities to help NASA explore the Moon as it prepares for human missions.

## GENERAL SCIENCE

### Green Menstrual Hygiene

#### News Excerpt:

A team at Stanford University has found the absorption capacity of a **sisal-based material** to be higher than that of commercial menstrual pads.

#### About Sisal Leaves:

- **Sisal has an uncanny ability to store water** and thrive in drought-prone areas. Its leaves grow up to **2 m long.**
- The lifespan of a sisal plant is about **7-10 years**, during which it produces 200-250 usable leaves.
- **Each leaf has about a thousand fibres that can be used to make ropes, paper, and cloth. Now, it could also be used to make a highly absorbed material.**
- The plants grow best in moderately **rich soil** with good drainage and **in warm, moist climates.**
- Sisal is mainly found in **Orissa, Maharashtra, and the southern states of India.**



#### Why is there a need for Sisal Leaves Sanitary pads?

- **Hygienic methods for use:** In 2022, the Centre for Economic Data and Analysis reported that there has been a significant rise in the number of people using hygienic methods – i.e. sanitary napkins, tampons, and menstrual cups – to manage their menstruation in India.
- **Access to hygiene products being limited:** Despite this promising growth, **access to menstrual hygiene products remains limited** for around 500 million people worldwide.
  - **For example**, in rural India, only 42% of adolescent women use exclusively hygienic methods to manage their periods.
- **Rising cost of raw materials:** One key barrier in making menstrual hygiene products, like sanitary napkins, accessible is the rising cost of raw materials and distribution.
  - Even as State and Central governments in India are working to make sanitary napkins widely available at lower prices, experts say their widespread use is environmentally unsustainable.
- **Waste of Sanitary pads:** According to gynaecologists, **"Menstrual sanitation waste adds non-biodegradable waste in the environment [in bulk],"** which constitutes an environmental hazard.

- **For example**, according to estimates from the 2022 United Nations Population Fund report, **Patna alone discards 9.8 billion sanitary napkins annually.**
- Another estimate from a 2022 study placed the monthly quantity of discarded sanitary napkins in Chennai at 27 million a month.
- **Single-use sanitary napkins:** They **contain dioxin**, a persistent environmental pollutant and a carcinogen that puts users of sanitary napkins at risk of cancer.
  - The International Agency for Research on Cancer (IARC) **classifies dioxin as a "known human carcinogen"**.

#### About Sanitary Napkins from Sisal Leaves:

- To make menstrual hygiene products more environmentally sustainable, scientists at Stanford University have reported a method to produce from sisal leaves a **"highly absorbent and retentive material"**.
- As a result, the researchers posit in their Nature Communications Engineering paper that the material can potentially replace cotton, wood pulp, and chemical absorbents in sanitary napkins.
- The **absorption capacity of the material is higher than those found in commercial menstrual pads.**
  - The absorbent material in sanitary napkins is often a combination of wood pulp and synthetic superabsorbent polymers (SAPs).

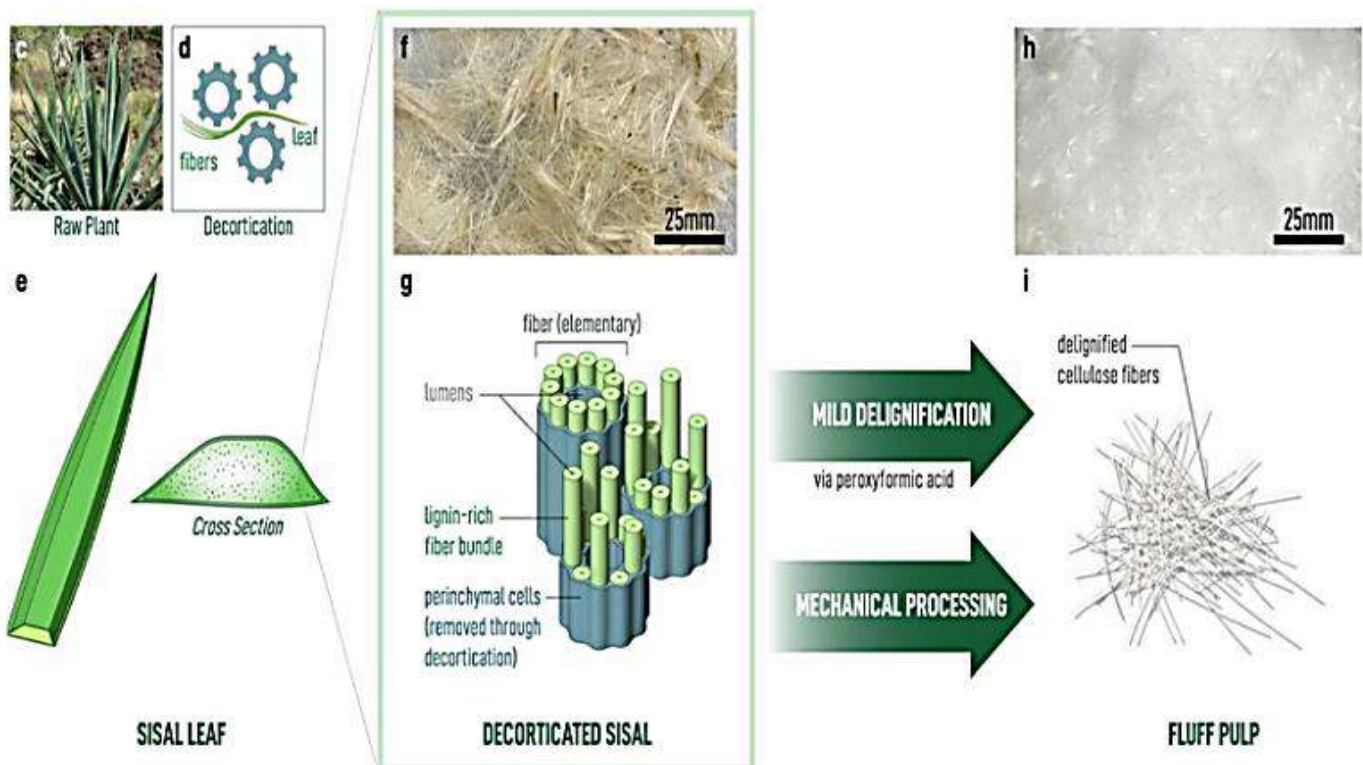
## NSOIM

### News Excerpt:

The India International Science Festival (IISF) hosted the **National Social Organisations and Institutions Meet (NSOIM)**.

### More about NSOIM:

- It was held from January 17 to January 19, 2024, at the DBT-THSTI-RCB (Department of Biotechnology-Translational Health Science and Technology Institute-Regional Centre for Biology) Campus in **Faridabad, Haryana.**
- It has been a national **platform for bringing together all the stakeholders who believe in the transformative power of science, technology, and innovation for societal good.**
- NSOIM is where science meets society, and innovation catalyzes grassroots development.
- The central **theme** for NSOIM-2023 is '**Technological Innovations for Grassroots Development**'. and it will encompass the following **sub-themes**:
  - Grassroot Innovations for Livelihood Generation.
  - Addressing emerging societal challenges.
  - Water and environmental conservation, management and security.
  - Food and Nutrition Solutions for a healthy society.
  - Livelihood-Centric S&T Systems for Multidimensional Poverty Alleviation.



### India International Science Festival (IISF)

- It is a collaborative endeavour between the Ministry of Science and Technology, Ministry of Earth Sciences, Department of Space and Department of Atomic Energy in partnership with Vijnana Bharati - a science movement spearheaded by scientists of the nation with swadeshi spirit.
- Through its creative programs and activities, IISF provides opportunities to people and the scientific fraternity in the country and abroad to come together, work together and experience the joy of doing science for the well-being of India and humanity.

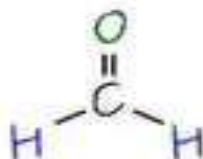
### Formaldehyde sensor to detect adulterated fish

#### News Excerpt:

Nanomaterials and Nanoelectronics Laboratory, Guwahati University, Assam, has developed a **cost-effective formalin sensor using tin oxide-reduced graphene oxide composite** that can effectively detect the presence of formalin in adulterated fishes.

#### INTRODUCTION

##### What Is Formaldehyde?



- Formaldehyde (CH<sub>2</sub>O) is an important compound for the global economy, widely used in construction, wood processing, furniture, textiles and carpeting, and the chemical industry.
- Formaldehyde is naturally present in the environment, some food, and the human body.
- Formaldehyde was first reported in 1859 by the Russian chemist **Aleksandr Butlerov** (1828–86).
- Molecular formaldehyde. A colorless gas with a characteristic pungent, irritating odor. It is stable at about 150 °C, but polymerizes when condensed to a liquid.

#### About the news:

- The sensor has been tested for adulterated fish at lab scale and on fish available in the fish markets of the Guwahati region.

- The research for this, supported by **DST-PURSE (Promotion of University Research and Scientific Excellence)**, was published in the journal **ACS Appl. Nano Mater.**
- It was observed that the sensor could detect the presence of formalin in many fish sample units that are imported from regions outside the state of Assam.
- The crucial importance of this work is the non-invasive detection of formalin.
  - However, using formaldehyde in food is illegal in many countries, as it is a known **carcinogen**.

**Graphene oxide (GO):** The oxidized form of graphene exhibits high solution processability and ease of chemical modification with other materials such as metals, metal oxides, or polymers.

- The low electrical conductivity of GO posed a challenge, and the scientists overcame this by developing the tin oxide-reduced graphene oxide composite (rGO- SnO<sub>2</sub>).

**Food adulteration:** Food adulteration is adding illegal or harmful substances to food to make it appear more appealing or increase its shelf life.

#### About non-invasive formaldehyde sensors:

- A new low-cost sensor made of metal oxide nanoparticles–reduced graphene oxide composite can detect formalin adulteration in fishes at room temperature in a non-invasive way.
  - The sensor shows long-term stability with a low detection limit.
- Commercial formalin sensors** for fish are primarily **electrochemical-based or colorimetric-based**.
  - Electrochemical sensors are extensively used but are expensive.
  - Colorimetric sensors are less expensive. But both methods are invasive in nature.
- Moreover, low-level and selective detection are two major issues with these sensors. The researchers synthesized **graphene oxide (GO)** through the wet chemical approach, and **tin oxide-reduced graphene oxide composite (rGO- SnO<sub>2</sub>)** was synthesized by hydrothermal route followed by calcination of the obtained product.

They found that the sensor made of tin oxide decorated with reduced graphene oxide effectively sensed formaldehyde vapour at room temperature.

## GEOGRAPHY

### Ancient underwater mountain range discovered in the Southern Ocean

#### News Excerpt:

Scientists have discovered an ancient **underwater mountain range** hidden within the world's strongest ocean current, the **Antarctic Circumpolar Current**.

#### About the findings:

- The discovery was made by researchers on board a **research voyage - FOCUS**, in the **Southern Ocean** by Australian government agency the Commonwealth Scientific and Industrial Research Organisation (**CSIRO**).
- The researchers were originally working to study the Antarctic circumpolar current to understand, how it contributes to **rising sea levels better**.
  - In particular, they were looking at how the **current leaks** heat towards the continent.



- A chain of eight **long-dormant volcanoes** with peaks soaring up to 1,500 meters was revealed.
  - **Four** of the eight long-dormant volcanoes are new discoveries.
- The survey area, located 200 nautical miles west of **Macquarie Island**, sits atop the tectonically active **Macquarie Ridge**, where these seamounts were formed by hotspot magmatism within the last 20 million years.

#### About the FOCUS voyage:

- The research voyage - FOCUS was designed to complement the capabilities of the new **Surface Water and Ocean Topography (SWOT) satellite** (developed jointly by **NASA** and the French space agency **CNES**).
- It is a high-resolution **mapping expedition** conducted by an **Australian and international research team**.

- This collaboration allowed for simultaneous mapping from both **space and sea**, providing a comprehensive view of the ocean's fine-scale features.

#### Geological Significance:

- The underwater mountain range provides **key evidence** of **plate tectonics**, the movement of Earth's crust, and the formation of **new landmasses**.
- The discovery raises intriguing questions about the **relationship** between **underwater mountains** and the **surface landscapes** they may be connected to.

#### Implications for Climate and Ecosystems:

- These underwater peaks can act as **barriers**, influencing **ocean currents** and affecting **nutrient distribution**.
  - Understanding the impact of these formations on ocean dynamics is crucial for **predicting climate patterns** and better **managing marine resources**.
- The ridges and valleys provide **sheltered zones** where **marine life** can thrive, with the potential for new species discoveries.
  - Protecting these habitats will be critical in preserving the delicate **balance** of **marine ecosystems**.

#### Antarctic Circumpolar Current (ACC):

- It is the strongest ocean current on our planet.
  - It extends from the **sea surface to the bottom** of the ocean and **encircles Antarctica**.
  - The **combined effects** of strong **westerly winds** across the Southern Ocean and the big change in **surface temperatures** between the Equator and the poles create the ACC.
- The ACC interacts with the seafloor, **creating eddies** that transport heat and carbon deeper into the ocean, thus serving as a **buffer** against **global warming**.
  - Moving northward, away from Antarctica, the water temperatures rise slowly at first and then rapidly across a **sharp gradient**. It is the ACC that maintains this boundary.
  - It is vital for Earth's health because it keeps **Antarctica cool and frozen**.
  - Scientists are studying the current to find out how it might affect the future of Antarctica's ice sheets and the world's sea levels.
- It provides the **main connection** between the **Indian, Pacific and Atlantic Oceans**.

### Way Forward:

Oceans act as “**climate shock absorbers**” by absorbing over 90% of the heat from global warming and about 25% of human CO<sub>2</sub> emissions. The **seafloor's topography** plays an important role in influencing **ocean dynamics**. By studying the composition and structure of these underwater formations, scientists can gain insights into the **geological processes** that have shaped the planet over millions of years.

#### PEPPER IT WITH:

ACC, Southern Ocean, Surface Water and Ocean Topography (SWOT),

## Cloud Seeding and India's growing problem of uneven rains

### News Excerpt:

The Indian Institute of Tropical Meteorology (IITM) reported that the **CAIPEEX experiment** showed rainfall could be enhanced by up to **46±13%** at **certain locations** and an average of **18±2.6%** over a 100 square kilometre area over the rain shadow **region of Solapur**.

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### About Cloud Aerosol Interaction and Rainfall Enhancement Experiment (CAIPEEX):

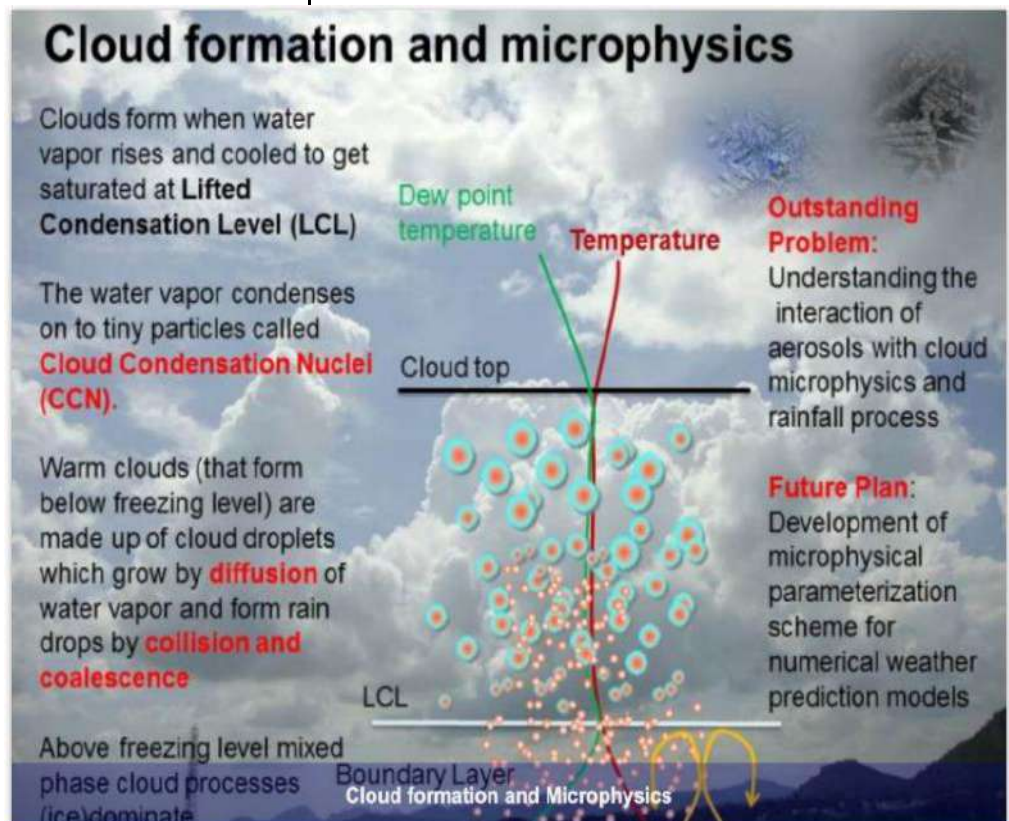
- The **first phase** of CAIPEEX began in **2009**. The **second phase** was in 2010-11, the **third** in 2014-15, and the **fourth phase** in Solapur in 2017-19.
  - CAIPEEX IV** was one of the largest experiments in cloud seeding attempted worldwide.
    - It was conducted **over two years** to test the **feasibility** and **effectiveness** of cloud seeding to **create rain**.
    - IITM evaluated samples of 276 clouds to test the effectiveness of cloud seeding.
- The report concluded that cloud seeding under suitable conditions could **effectively enhance** regional rainfall.
- All measurements were done using a wide network of **state-of-the-art equipment** such as automatic **rain gauges, radars, radiometers, and aircraft**.

### Cloud seeding:

- According to the IITM report, cloud seeding is a **technique** in which **cloud-forming particles** are used to increase rainfall.
- The clouds are **spotted** using radars, and once a cloud is identified, the base of the cloud is pumped with the chemicals, most likely **silver iodide (AgI)**.
- It can be done in two ways: **hygroscopic** and **glaciogenic**.
  - Hygroscopic seeding** is done at the **base of warm clouds**, using seed particles with an affinity for water vapour.
    - During monsoons, hygroscopic seeding is **more advantageous** in enhancing rainfall and ensuring the longevity of the clouds.
  - Glaciogenic seeding** is carried out in cold clouds by seeding **near the top of the cloud**, using silver iodide particles, which may form ice particles in the clouds.

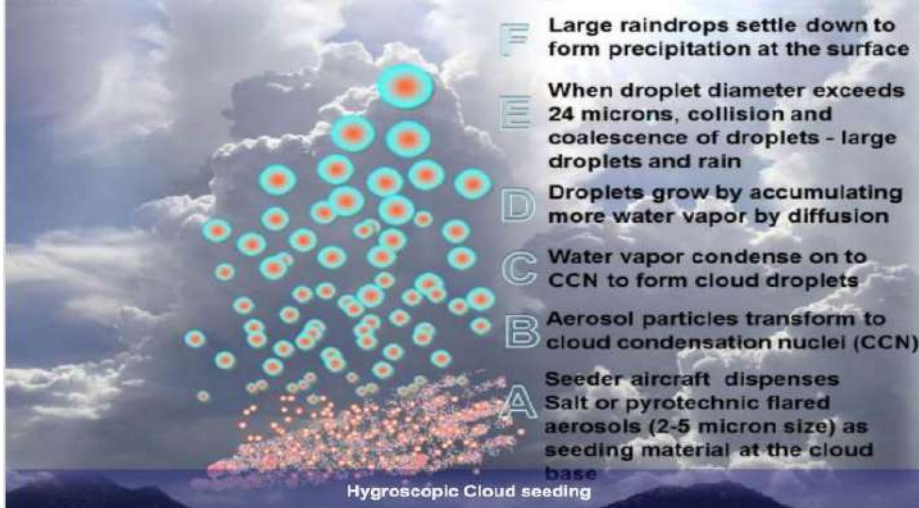
### National and Global Practices:

- IITM tried **hygroscopic seeding** in the 1970s. Subsequently, several states, such as **Maharashtra** and **Karnataka**, attempted to create rains artificially occasionally but with **limited success**.



- More than **56 countries** practise cloud seeding to create rain. Some of them are **Australia, China, Russia, Thailand, the United Arab Emirates, and the United States**.

## Hygroscopic cloud seeding



**water-deficit areas** such as **Telangana** or **Vidarbha**.

○ Meanwhile, the centre at IITM should **facilitate the indigenization of technologies** for cloud seeding aligned with the Make in India vision.

• A much simpler way would be to **conserve rainwater** because India gets around **1,000-1,100 mm** of rainfall in a year, and it doesn't need artificial rain except perhaps in extreme conditions.

### PEPPER IT WITH:

Different types of clouds, Droughts, floods, Groundwater recharge techniques

### Challenges:

- Cloud seeding can only happen in the **monsoon months**, as it needs some moisture in the clouds that can then be enhanced through seeding.
- Cloud seeding **can't** happen in **clear blue skies**.
  - That is one reason why cloud seeding **cannot** be the right solution to bring down **Delhi's pollution in winter**.
- Cloud seeding **cannot** mitigate **large-scale droughts**.

### Cost vs Benefit:

- When one identifies and seeds a cloud with aerosols, it **may or may not rain**. Secondly, it could still rain even if **one doesn't seed a cloud**.
  - Therefore, the **question is how beneficial** it is to make rain by seeding a cloud, which this experiment tries to answer.
- The **IITM analysis** showed that the approximate cost of producing water through cloud seeding was **around 18 paise a litre**.
- A few years back, a study showed that the **Bombay Municipal Corporation spent Rs 19.44 for every 1,000 litres of water** it supplied to its residents or **Rs 0.019 per litre**.
- The process of cloud seeding is **costly**. It costs a lot of money to **hire aircraft**. However, the cost could be worth it when staring at **drought-like conditions**.
  - It just brings rain to a village facing water scarcity.
- The **IITM Report** said that most of the **technology and equipment** required for cloud seeding **are currently imported**.

### Way Forward:

- **The Earth Sciences Minister** has said that cloud seeding will be used **only in extreme circumstances**.
  - Scientists also agree with it and have said it should be attempted in places like **perennially**

- Studies show that of India's annual rainfall, **35-55% is the run-off rate** in different regions.
- The **environmental flow requirement** is a **minimum of 10 to 15%**, while the rest can be used by **creating water infrastructure** or **artificial groundwater recharge**.
- The **priority** should be **groundwater recharge**, as this is where water is extracted from, and groundwater is India's **primary water source**.

## Seasonal and solar activity dependence of TEC over Bharati station, Antarctica

### News Excerpt:

The **study of ionosphere** variability over Bharati station in Antarctica reveals strong **diurnal patterns** even during polar days and nights.

### About Ionosphere:

- It is part of Earth's upper atmosphere, **between 80 and about 600 km**, where Extreme UltraViolet (**EUV**) and **x-ray solar radiation** ionize the atoms and molecules, thus creating a layer of electrons.
- Earth's **upper ionosphere**, particularly in high latitude regions like the polar cap and auroral oval, is **closely linked** to the **magnetosphere**, acting as a **major sink** for solar-terrestrial energy transfer processes and various magnetospheric and space weather events.
- The polar ionosphere is more **variable** and **dynamic**, resulting in unique characteristics such as strong **plasma convection, particle precipitation, and joule heating**.
  - **Solar wind** and **magnetospheric plasma** enter the polar atmosphere along magnetic field lines, forming an important ionization source.
  - The precipitation of these particles also produces **aurorae** and **airglow**.

- Polar ionospheric observations are crucial due to their sensitivity to space weather conditions.
  - **High latitude ionosphere** experiences stronger **irregularities** and **scintillation**, which impact satellite-based communication and navigation systems.
  - Few studies have been conducted using ground-based **GPS receivers** and in-situ measurements from **CHAMP, DMSP satellites, and SuperDARN radar**, with limited focus on short-term analysis or response during space weather events.

#### Total Electron Content (TEC):

- It is a crucial **ionospheric parameter** representing the **electron density** along the path of a radio signal.
- It is highly variable with **time, season, and location** and exhibits significant variations with **geomagnetic activity**.
- TEC fluctuations and gradients affect phase **ambiguity resolution**, increase undetected **cycle slips**, and loss of **signal lock**, causing severe **amplitude fading** and strong **phase scintillations**.
  - These issues affect GPS navigational systems and satellite communication reliability.
- To use TEC as a parameter for diagnosing and forecasting ionospheric delay and navigation errors, the morphology of TEC behaviour must be modelled under **quiet geomagnetic conditions**.
  - Therefore, it is essential to develop a **better understanding** of **TEC** and its impact on scintillation and GPS performance.

#### Key findings of the study:

- The Indian Institute of Geomagnetism (**IIG**) has examined the long-term **seasonal ionospheric observations** at station Bharati between 2010 and 2022, with solar activity following the **Sun's 11-year cycle**.
  - Indian Institute of Geomagnetism (IIG) is an **autonomous body** of the Department of Science and Technology (**DST**).
- The study found a **substantial seasonal variation** with maximum total electron count (**TEC**) in equinoctial months, followed by the summer and winter.
- It was observed that though there was no sunlight incidence throughout the day in winter months (polar nights) at Bharati station, a **diurnal pattern** was observed with **peak** ionospheric density near **local noon**.
- The day-night ionospheric density variations were observed regardless of 24 hours of sunlight in summer and complete darkness in winter.
- The scientists attributed the peak ionization to particle precipitation and transportation of convective plasma from high latitudes.

- Also, the **maximum ionospheric density** in the summer months, where 24 hours of sunlight is present (polar days), was **about twice** that of polar nights in the Bharati region.

#### Significance of the study:

- Such long-term studies can help understand the effects of the ionosphere on **satellite-based navigation and communication systems** and mitigate them.

### Arctic Blast: The concept and its effect in the U.S.

#### News Excerpt:

After months of record-breaking warm temperatures, much of the U.S. is facing a harsh, fast-approaching blast of frigid air from the Arctic that could cause 0° Fahrenheit temperature in the midwest and Great Lakes.

#### The concept of Arctic Blast:

- **The U.S. National Weather Service defines an Arctic blast** as when "very cold air masses that typically originate in the Siberian Region of Asia cross over the North Pole into Canada and push south and east into the lower United States".
- Typically, **very cold air in the Arctic is trapped inside a high-altitude swirl of winds called the "Polar vortex"**, which is surrounded by a lower-altitude band called the polar jet stream.
- If the polar vortex gets disrupted, then the **jet stream can become wavy and carry frigid air much farther south than usual in an Arctic blast**. Sometimes, this frigid air brings snow and ice; other times, the weather is dry but bitterly cold.
- **As this Arctic air is pushed into the warmer, moist air ahead of it, the system can quickly develop into serious weather** — including what's known as a **"bomb cyclone"** – a fast-developing storm in which atmospheric pressure falls quickly over 24 hours.
- **These severe weather events usually form over bodies of water**, which have lots of warmth and moisture to feed the storm.

#### What is Polar vortex and Polar jet stream?

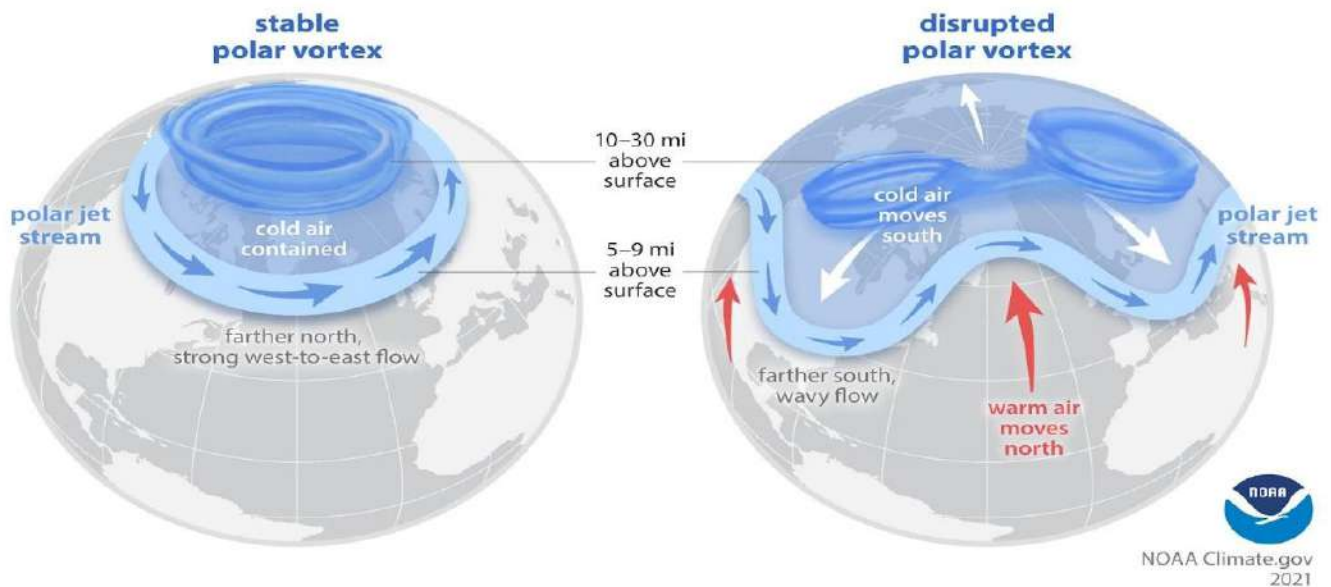
- According to NOAA stratosphere experts, people often confuse the polar vortex with the polar jet stream, but the two are in completely separate layers of the atmosphere.
- The polar jet stream **occurs in the troposphere** at altitudes between 5-9 miles above the surface. It marks the boundary between surface air masses, separating warmer, mid-latitude air and colder, polar air.
- The polar jet stream **plays such a big role in our day-to-day winter weather in the mid-latitudes, not the polar vortex**.

# Understanding the polar vortex

The Arctic polar vortex is a strong band of winds in the stratosphere, surrounding the North Pole 10–30 miles above the surface.

The polar vortex is far above and typically does not interact with the polar jet stream, the flow of winds in the troposphere 5–9 miles above the surface. But when the polar vortex is especially strong and stable, the jet stream stays farther north and has fewer “kinks.” This keeps cold air contained over the Arctic and the mid-latitudes warmer than usual.

Every other year or so, the Arctic polar vortex dramatically weakens. The vortex can be pushed off the pole or split into two. Sometimes the polar jet stream mirrors this stratospheric upheaval, becoming weaker or wavy. At the surface, cold air is pushed southward to the mid-latitudes, and warm air is drawn up into the Arctic.



## National Geoscience Data Repository (NGDR) Portal

### News Excerpt:

The **National Geoscience Data Repository (NGDR) Portal** has been launched as a part of the **National Mineral Exploration Policy, 2016**.

### About National Geoscience Data Repository (NGDR) Portal:

- **Objective:** It aims to host all **baseline** and **exploration**-related **geoscientific data** in a single GIS platform.
- The portal incorporates **35 map services**, including **geological**, **geochemical**, and **geophysical** data layers, enabling users to view, download, and interpret data.
- The **initiative** is led by the Geological Survey of India (**GSI**) and the Bhaskaracharya Institute of Space Applications and Geoinformatics (**BISAG-N**).
  - The **Ministry of Mines** conceptualized the creation of NGDR as part of the **NMEP 2016**.

### Key Features of the National Geoscience Data Repository (NGDR) Portal:

- **Centralized Access:** Provides a centralized repository of diverse geoscience datasets, including geological maps, mineral resources, seismic data, and environmental information.
- **User-Friendly Interface:** An intuitive interface designed to cater to a wide range of users, enabling seamless navigation and exploration of data.
- **MERT template:** The Mineral Exploration Reporting Template facilitates all the geoscientific stakeholders to submit their data in a standard reporting template in the NGDR portal.
- **Analytical Tools:** Equipped with state-of-the-art analytical tools to interpret and extract valuable insights from complex geospatial data.
- **Open Access:** Encourages transparency and knowledge sharing by offering open access to a wealth of geoscience information.



### Significance:

- The platform **democratizes** critical geoscience data, providing unprecedented access to resources for stakeholders across **industries** and **academia**.
- It will further increase the **investment attractiveness** in India's mining sector.
- India is now in the league of other mineral-rich countries where the accessibility of geoscientific data plays a vital role in fostering their **mineral exploration programmes**.
- The NGDR portal represents the culmination of years of dedicated work and is poised to facilitate the **growth and sustainability of India's mineral mining sector**.

### Geological Survey of India (GSI):

- It was set up in **1851** primarily to find coal deposits for the Railways.
- The **main functions** of GSI relate to **creating and updating national geoscientific information and mineral resource assessment**.
- These objectives are achieved through **ground surveys, air-borne and marine surveys, mineral prospecting and investigations, multi-disciplinary geoscientific, geo-technical, geo-environmental and natural hazards studies, glaciology, seismotectonic study**, and fundamental research.
- It is headquartered in **Kolkata** and has **six regional offices** located at Lucknow, Jaipur, Nagpur, Hyderabad, Shillong and Kolkata.
- The Geological Survey of India is an **attached office** to the **Ministry of Mines**.
  - It is expected to be pivotal in promoting mineral exploration, research, and development across the nation, **marking a significant step towards mineral self-sufficiency**.

### Chilla-i-Kalan

#### News Excerpt:

Chilla-i-Kalan is the local name given to the **40 days of severe winter in Kashmir**.

#### About Chilla-i-Kalan:

- It is the harshest winter period when a cold wave grips the region.
  - This period **spans from December 21 to January 31** of the following year.
- The **temperature drops** considerably, leading to the **freezing of water bodies**, including the famous **Dal Lake**, as well as the water supply lines in several parts of the valley.

- The **chances of snowfall are the most frequent and maximum** during this period, and most areas, especially in the higher reaches, receive heavy snowfall.
- After Chilla-i-Kalan, the cold conditions continue even after that in Kashmir with a **20-day-long 'Chillai-Khurd' (small cold)** and a **10-day-long 'Chillai-Bachha'** (baby cold).

#### About Dal Lake:

- It is located in **Srinagar** and is a **freshwater lake**.
- It is integral to tourism and recreation in Kashmir and is named the **"Jewel in the crown of Kashmir"**.
- The **shoreline** of the lake is about **15.5 kilometres**.
- The lake covers an **area of 18 square kilometres** and is part of a natural wetland that covers 21.1 square kilometres, including its floating gardens.
  - The **floating gardens**, known as **"Raad" in Kashmiri**, blossom with lotus flowers.

### Nacreous Clouds (Rainbow Clouds)

#### News Excerpt:

The shimmering **colours of nacreous clouds** were spotted in Scotland recently.

#### About Nacreous Clouds:

- Nacreous clouds **form in the lower stratosphere over polar regions** when the **Sun is below the horizon**.
  - The clouds are illuminated from below and often glow in vivid colours.



- It is one of the **highest clouds in our atmosphere** (around **12-19 miles or 19-31 km high**, far above normal clouds.)
- They are found in the high latitudes of **both hemispheres during the winter**. They are often **lenticular in shape**.
- They are often referred to as **"mother-of-pearl"**.
  - It is formed in the air **around -80 degrees Celsius**, and **tiny ice crystals reflect sunlight**, giving the cloud **pearly colours** - the reason why it is also called mother-of-pearl.
- They are mostly **seen a couple of hours either side of sunset or sunrise**, and, being so high, they are still lit

by sunlight, which makes them appear even brighter in our evening sky.

- o Because of the **height and temperature needed**, this cloud is also known as **Polar Stratospheric Cloud**.
- Nacreous clouds are **classified into three types, Ia, Ib, and II**, according to their **chemical composition, height, and ambient temperature**.

**How do Nacreous clouds form?**

- The **ice particles** that form nacreous clouds are **much smaller** than those that form more common clouds.
- These **smaller particles scatter light differently**, creating a distinctive luminescent appearance.
- **Due to their high altitude and the curvature of the Earth's surface**, these clouds are **lit up by sunlight from below the horizon** and reflect it to the ground, shining brightly well before dawn and after dusk.
- They are most likely to be viewed when the Sun is between 1° and 6° below the horizon and in places with higher latitudes, such as **Scandinavia and northern Canada**.
- They **only form below -78 °C**, so they are most likely to occur during the polar winter.

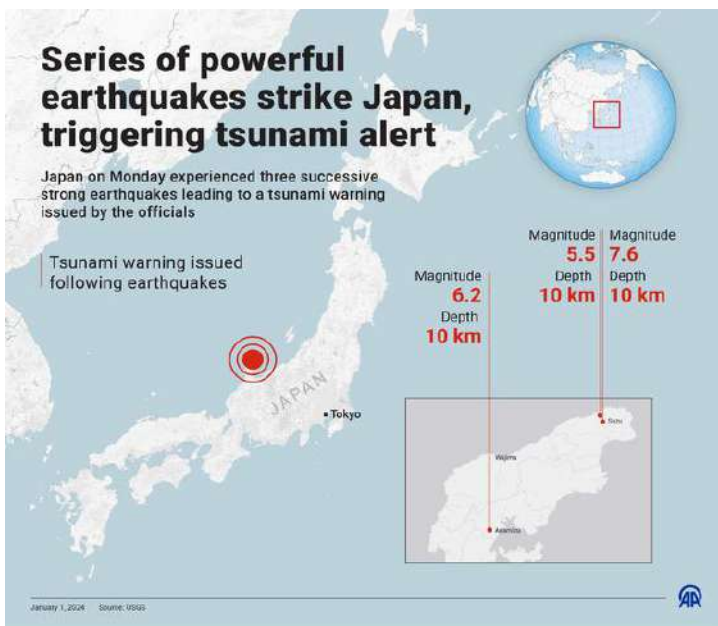
**DISASTER MANAGEMENT**

**Japan's Stoic Resilience Amid Major Earthquakes**

**News Excerpt:**

Japan, a **seismically accustomed nation**, faced the aftermath of a **7.6 magnitude earthquake** on New Year's Day.

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**About:**

- Japan's **death toll** has risen to **55** despite strong tremors.
- Taking a global perspective -
  - o The 7.8 magnitude earthquake in **Turkey** last year claimed over **50,000** lives.
  - o The 2015 **Nepal** earthquake of 7.8 magnitude resulted in **9,000** casualties.
  - o The 6.3 magnitude earthquake in **Afghanistan** in October claimed over **2,000** deaths.

**What is a tsunami?**

- **Tsunami (a Japanese word that means "harbour wave")** is a series of giant ocean waves caused by **earthquakes or volcanic eruptions under the ocean**.
- **Reasons For Tsunami:**
  - o When an **earthquake** occurs under the ocean, a large chunk of the ocean floor can suddenly move upward or downward, leading to a sudden displacement of a large volume of water, thereby causing tsunami waves.
  - o A similar thing can happen when a **volcano erupts in the ocean**. The lava flowing out of the volcano displaces the water around it, and that water can become a large wave.
- Big tsunamis usually begin in the deep ocean, where a large volume of water can be displaced.
  - o As the wave moves closer to the shore, it grows taller as the ocean becomes shallower.
  - o Tsunami waves can be hundreds of feet tall and travel as fast as jet planes over deep waters while slowing down when reaching shallow waters.
- However, not all earthquakes or volcanic eruptions lead to tsunamis.
  - o The formation of a tsunami can depend on a host of factors, including the shape of the ocean floor and the earthquake's distance and direction.

**Previous Incident of Tsunami in Japan**

- **In 2011**, Japan was hit by a 9.0 magnitude earthquake and a resulting tsunami that devastated its northeastern coastal communities, **killing around 18,000 people** and displacing tens of thousands.
  - o Those tsunami waves led to a nuclear meltdown at the Fukushima power plant, causing the most severe nuclear accident since the 1986 Chernobyl disaster in the Soviet Union.

**Japan's Earthquake and Tsunami -prone reality:**

- It is located in the '**Pacific Ring of Fire**' and experiences **20%** of the world's earthquakes of **magnitude six or greater annually**.
  - o **The 'ring'** refers to an imaginary horseshoe-shaped zone that follows the rim of the Pacific Ocean, where many of the world's earthquakes and volcanic eruptions occur.

- There is the subduction (sinking) of the Pacific Plate (in the north) and the Philippine Plate (in the south) beneath the Eurasian Plate, upon which Japan lies.
- The movements of these plates have formed six mountain arcs off the northeastern coast of Asia.
- Within the Ring of Fire, there are different tectonic belts, including **the Pacific Plate, Eurasian Plate, and Indo-Australian Plate**, which keep meshing and colliding with each other, causing earthquakes, volcanic eruptions and tsunamis.
- The country experiences **2,000 quakes annually**, highlighting its seismic vulnerability, though not all result in casualties.

#### Japan's approach to minimize impact:

- **Building codes and retrofitting:**
  - Japan's resilience is based on strict building codes, with homes designed to withstand seismic activity.
  - The **first level** focuses on smaller earthquakes, aiming for undamaged structures.
  - The **second level** focuses on rare, extreme earthquakes.
- **Early warning system:**
  - Japan has a sophisticated early warning system **for earthquakes and tsunamis**, giving citizens and authorities crucial seconds to minutes of advance notice before strong shaking.
  - Each **mobile phone** in Japan is **equipped** with an **emergency alert system**, activated five to ten seconds before the disaster, allowing users to take immediate protective actions.
  - The system vocalizes "**Jishin desu!**" (translated as "There is an earthquake") until the earthquake subsides.
- **Education and drills:**
  - Japanese citizens receive **comprehensive education** on emergency procedures through regular drills from childhood, ensuring efficient response during seismic events.
- **Earthquake survival kits and measures:**
  - Households in Japan have prepared for earthquakes by storing **earthquake survival kits**, which include **first aid supplies, bottled water, food, gloves, face masks, insulation sheets, flashlights, and radios**.
    - These kits can be obtained from **drugstores** or **lifestyle stores**.
- **Tsunami preparedness:**
  - Japan, acutely aware of the tsunami risk associated with earthquakes, has implemented robust **coastal barriers, seawalls, and early warning systems**.
  - These measures work in tandem to protect coastal areas, reducing the potential impact of devastating waves.

#### Way Forward:

Japan's seismic resilience, resulting from **years of planning and adaptation**, is being tested following a recent

earthquake. Despite ongoing challenges, Japan's commitment to earthquake readiness is a **global benchmark**, offering lessons on mitigating seismic event impacts and fostering a resilient society. This journey is characterized by **geological understanding, meticulous planning, and continuous adaptation**.

#### PEPPER IT WITH:

Tsunami, Earthquake, Volcano, Pacific Ring of Fire, Major and Minor tectonic plates

## Railway officers to be trained in disaster management

### News Excerpt:

The **Ministry of Railways** has made training in **disaster management mandatory** for railway officers.

### More about the news:

- Disaster management has now been **incorporated as an integral component of the training module for railway officers** at the induction/foundation course level.
    - It is also included in **refresher or mid-career training programmes**.
  - The move comes after an investigation into the devastating **Odisha train tragedy**, which left about 290 passengers dead and scores injured, revealed that the disaster response could have been faster.
  - The **National Academy of Indian Railways (NAIR), Vadodara**, and the **Indian Railway Institute of Disaster Management (IRIDM), Bengaluru**, would work together to impart **the comprehensive training programme**.
- ### Government's steps:
- The Indian Railways have a **safety organization and an officer of a higher administrative grade designated as the principal chief safety officer in all zonal railways to ensure compliance with safety guidelines and coordinate with different agencies in an emergency**.
  - The **KAVACH** is an indigenously developed **Automatic Train Protection (ATP)** system by the Research Design and Standards Organisation (RDSO) in collaboration with the Indian industry.

### Way Forward:

- Though the Railways have accident relief trains stationed at major junctions across the railway network with adequate manpower and equipment to reach accident sites or any scene of disturbance, the focus would be more on restoring rail traffic.
- The Railway Board should review Zonal Railways' disaster response system.
- Since disaster management is a priority area, there needs to be clarity on the venue and schedule of training.

## INTERNAL SECURITY

### Triumph in ULFA Peace Accord marks a national security milestone

**News Excerpt:**

The Union Ministry of Home Affairs and the Assam government have signed a memorandum of settlement with the pro-talks faction of the United Liberation Front of Asom (ULFA).

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**Background:**

**Historical:**

- Assamese people have a unique culture, language, and a strong sense of identity.
- The region's growing tea, coal, and oil economy attracted migrants from all over in the 19th century, and the exodus of refugees from erstwhile East Pakistan in the 1970s made the indigenous population insecure.
- Eventually, the Assam Accord, seeking to "find a satisfactory solution to the problem of foreigners in Assam", was signed in 1985.

**Assam Accord, 1985**

The Assam Accord was signed on 15<sup>th</sup> August 1985 amongst the Union of India, the Govt. of Assam, All Assam Students of the Union, and All Assam Gana Sangram Parishad.

**Emergence of ULFA:**

- Amidst all this, a group of more radical thinkers led by Bhimakanta Buragohain formed ULFA on April 7, 1979.
- The founders of ULFA wanted to establish a sovereign Assamese nation through an armed struggle against the Indian state.
- For over 44 years, this 'struggle' has been chequered with kidnappings and extortion, executions, and bomb blasts, leading to tragic loss of life in Assam and beyond.
- International linkages of ULFA:**
  - It had bases in five neighbouring countries - Bangladesh, Bhutan, China, Nepal, and Myanmar - allowing for a strategic Northeast

**Other peace agreements signed with insurgent groups in North-East:**

- NLFT agreement in 2019
- Bru and Bodo pacts in 2020
- Karbi in 2021
- Adivasi agreement in 2022
- Assam-Meghalaya border agreement
- Assam-Arunachal border agreement
- Agreement with UNLF in 2023

encirclement.

- ULFA has links to other insurgent outfits in the Northeast and Myanmar, as well as Islamic terror

### The following major militant groups have been active in the Northeast

**Arunachal Pradesh**

- United Liberation volunteers of Arunachal Pradesh (ULVA)
- United People's Volunteers of Arunachal Pradesh (UPVA)
- United Liberation Movement of Arunachal Pradesh (ULMA)

**Assam**

- United Liberation Front of Assam (ULFA)
- Bodo Security Force (BSF)

**Nagaland**

- National Socialist Council of Nagaland ( Isak / Muviah ) (NSCN I/M)
- National Socialist Council of Nagaland ( Khaplang ) NSCN(K)
- Naga National Council ( Adinno ) / Naga Federal Govt (NFG)
- Naga National Council ( Khodao )-NNC(K)

**Meghalaya**

- Achick Liberation Matgrik Army (ALMA)

**Manipur**

- National Socialist Council of Nagaland (NSCN I/M)
- People's Liberation Army (PLA / Revolutionary People's Front (RPF)
- United National Liberation Front (UNLF)
- Peoples Revolutionary Party of Kangleipak (PREPAK)

**Tripura**

- All Tripura Tribal Force (ATTF)
- Tripura National Volunteer Force (TNVF)

**Mizoram**

- Hmar People's Convention (HPC)

outfits like Harkat-ul-Jihad-e-Islami and Al-Qaeda.

**Government of India's response:**

- The **Indian state's response has been unsparing.**
  - In 1990, the Centre launched **Operation Bajrang, leading to the arrest of 1,221 ULFA insurgents.**
  - Assam was declared a **'disturbed area'**, and **President's rule** was imposed. Eventually, the **Armed Forces Special Powers Act (AFSPA)** was invoked.
- Yet, the ULFA has survived, in some part due to help from outside India.

**Key achievements of the newly signed Peace Accord:**

- It is a **tripartite agreement** between the Central Government, the Assam government, and ULFA.
- The peace accord ensures that **97 out of 126 Assembly seats in Assam will be reserved for indigenous people**, and the future delimitation exercise will follow this principle.
- **₹1.5 lakh crore investment had been pledged in the peace accord**, and constitutional safeguards would be ensured by protecting land rights and restricting migration from one constituency to another.
- **ULFA agreed to shun violence, disband the organization**, and join the democratic process.
- The **ULFA has also agreed to vacate all camps occupied by its armed cadres**, engage in the peaceful democratic process established by law, and maintain the country's integrity.
- In return, the Central Government has agreed to provide a huge package and several big projects for the all-round development of Assam.

**Way Forward:**

- **Rehabilitation of the surrendered insurgents** can pave the way for long-term stability and peace, allowing the region to focus on development initiatives.
- An **inclusive growth model, enhancing trust and transparency**, and reaching the grass-roots level is essential to improve regional governance further.
- **Promoting trade-induced industrialization** can create new employment opportunities, stimulate growth, and strengthen regional integration.
- There is a **need to focus on excellent education levels**, taking more people in the national mainstream.
- There is a **need to ensure greater transparency in AFSPA.**

**PEPPER IT WITH:**  
AFSPA, ULFA, Peace agreements with NE insurgent groups

**Resurgence of Pirates**

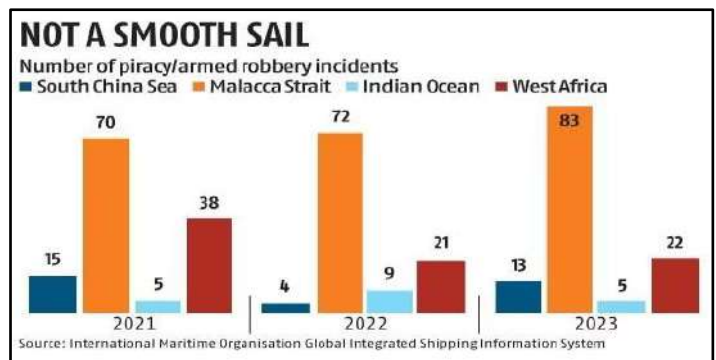
**News Excerpt:**

Two separate incidents of piracy have sparked fears of the return of Somali pirates in international waters amid troubling geopolitical uncertainty.

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**About the news:**

- INS Visakhapatnam, a mission deployed in the Gulf of Aden for anti-piracy operations, swiftly responded to a distress call by Marshall Island flagged **MV Genco Picardy** following a drone attack.
- **In a separate incident, MV Ruen, a Malta-flagged merchant ship**, was hijacked by unknown raiders in the Arabian Sea.
- India's shipping regulator, Director General of Shipping (DGS), has advised seafarers to take extra caution as incidents of piracy have seen an uptick after several years of relative normalcy, making international waters riskier for merchant ships.



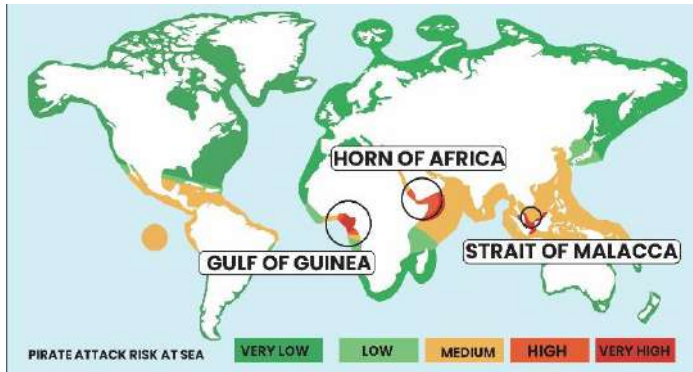
**Challenges in the maritime domain:**

- Piracy and armed robbery
- Human and contraband trafficking
- Irregular Human Migration (IHM)
- Illegal, Unreported and Unregulated (IUU) fishing
- Gun running, poaching, maritime terrorism

**Three major hotspots identified in IOR:**

- **South East Asia**
  - A larger pattern of maritime security concerns in the **Straits of Malacca and Singapore** has exhibited a sharp increase in incidents from **45 in 2019 to a peak of 83 in 2023**, as per the International Maritime Organisation's **Global Integrated Shipping Information System (GISIS)**. GISIS is developed, maintained, and headed by the **International Maritime Organisation (IMO)**.
- **Gulf of Guinea:** There is a rise in the intensity of piracy incidents in the Gulf of Guinea
- **Horn of Africa:** The rise in conflict-related incidents in the **Gulf of Aden and the Red Sea** involving attacks

using drones and missiles is a growing concern and poses serious risks.



**Reasons for the recent maritime threats:**

- Connections and intentions of attacks on ships in the Red Sea and Indian Ocean Region remain uncertain, given that vessels owned by multiple countries are being attacked.
- According to the DGS advisory, **Global political instability** continues to escalate, posing significant threats to maritime activities, especially shipping, commerce, and supply chains.
  - This heightened risk stems from various factors, including **conflicts, territorial disagreements, cyber-attacks, the imposition of sanctions, piracy, and potential acts of sabotage.**
- Concurrently, the rising number of sea-borne migrants, drug smuggling using merchant vessels, and a surge in stowaway incidents are creating severe security challenges worldwide.

**India's steps for maritime security:**

- The Indian Navy is a part of the **Combined Maritime Forces (CMF)**, a 39-nation group of naval forces looking at maritime security.
- Indian Naval ships and aircraft are regularly deployed on **'Mission Based Deployments'** in the Indian Ocean Region to enhance maritime security.
  - It also undertakes surveillance to enhance **Maritime Domain Awareness** and address contingencies that may arise.
- These are consistent with the Government of India's vision of **Security and Growth for All in the Region (SAGAR) and the Maritime Security Strategy**, which aims to position India as the **"Preferred Security Partner"** in our extended maritime neighbourhood.
- India works proactively with regional Navies to strengthen friendship/cooperation and promote marine security in the Indian Ocean Region (IOR).
- Operational interactions with friendly foreign countries include activities like **Joint Exclusive Economic Zone (EEZ) Surveillance, Coordinated Patrols** on an annual/bi-annual basis along the **International Maritime Boundary Line (IMBL), Maritime Exercises,** etc.

- India participates in regional frameworks such as the **Association of Southeast Asian Nations Regional Forum (ARF), East Asia Summit (EAS), and the ASEAN Defence Ministers Meeting Plus (ADMM Plus)** to expand its cooperation and exchanges with the Indo-Pacific region.

**PEPPER IT WITH:**  
EEZ, IMBL, ADMM Plus, EAS, IMO, Marine security issues

**Way Forward:**

The unfettered use of the **"Indian Ocean Region - a global commons"** for human prosperity cannot be achieved without addressing maritime security challenges. **Information sharing, cooperation, and expertise development** are prerequisites to responding to such challenges effectively.

**The shift of the terrorist activity from Kashmir to Jammu**

**News Excerpt:**

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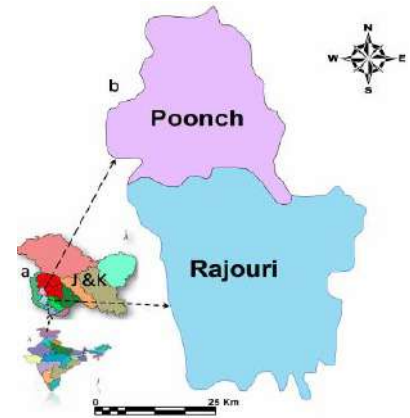
- The recent shift of terrorist activities from the Kashmir Valley to the Jammu sector is making Poonch-Rajouri a terror hotspot.

**About:**

- The recent run of encounters in the depth areas of the **Poonch-Rajouri sector** has resulted in more losses for the Army than the terrorists.
- In addition, while the Kashmir zone — the traditionally more volatile area — is relatively quiet, it's the **Pir Panjal (South) in the Jammu sector**, which has, in recent months, witnessed more operational activity and the presence of terrorists.
- The areas of Rajouri and Poonch have seen multiple high-visibility militant attacks this year.

**Reasons:**

- **Least resistance:** Kashmir's strong, layered **counter-infiltration (CI) and counter-terrorism (CT) grid** makes planning proxy operations difficult. The abrogation of **Article 370** has also made Kashmir less conducive to separatist trends. Thus, Jammu offers less resistance than Kashmir.
- **Reduction in deployment:** From May 2020 onwards, when the Ladakh sector was activated, some troops were lifted from the Jammu sector and redeployed



there. There may have been some dilution, but HQ Northern Command has always been watchful and has followed the basic principle of redeploying and creating other reserves.

- **Easier Route:** Rajouri is a transit route to Kashmir. When security forces corner terrorists, terrorists will always have the option to cross the LoC to return to Pakistan.
- **Local Support:** The Poonch-Rajouri sector has had a chequered history of local support, which enabled Pakistan to establish a strong proxy presence in the forested and **rocky tracts of the Pir Panjal (South)**.
- **Change of weather:** The Line of Control (LoC) is easier to infiltrate than the Kashmir region because the area gets covered by snow during the winter. Due to dense forest areas, it becomes easier for the terrorists to camouflage and dodge the security forces.

**What steps should be taken?**

- **Brigade-sized operations** should be conducted with drone support in the lower reaches of the Pir Panjal, as the foliage cover is lowest at this time. This needs to be reinforced by a strong public outreach.
- Political and civil society leaders must be balanced in their utterances, and the media should also not speculate.
- If there are any casualties, then **the transparency of an inquiry and suitable disciplinary action** is expected from the Army.
- An immediate drive to address the **emotions prevailing among the local communities** must be undertaken by direct contact and interaction.

**Way Forward:**

- The Indian Army is further strengthening its preparedness on the Line of Control and the International Border from where these terrorists have been trying to infiltrate into the Indian side from across.
- Over the last 33 years, such moments have often come and gone. The nation needs to remain reassured of the ability of the Government and Army to see it through.

**PEPPER IT WITH:**  
 Pir Panjal, LoC, counter-infiltration (CI) and counter-terrorism (CT), Article 370

**Indians travelling to Nicaragua**

**News Excerpt:**

The case of a chartered flight with Indian passengers from the UAE flying to **Nicaragua** has raised questions about illegal immigration. This brings back the focus on illegal immigration and the concept of **'donkey flights'**.

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**About the news:**

- In recent months, there has been a notable increase in interest among Indians to travel to **Nicaragua**, a **Central American** nation not traditionally popular among Indian travellers.
- While some may genuinely be interested in **tourism or business**, sources suggest that Nicaragua is becoming a gateway for illegal immigration to the **United States and Canada**.
- The recent case involved passengers from **Punjab and Gujarat**, and the process involved obtaining visas on arrival or travel authorization, posing challenges due to language barriers and unfamiliarity with Indian travellers.

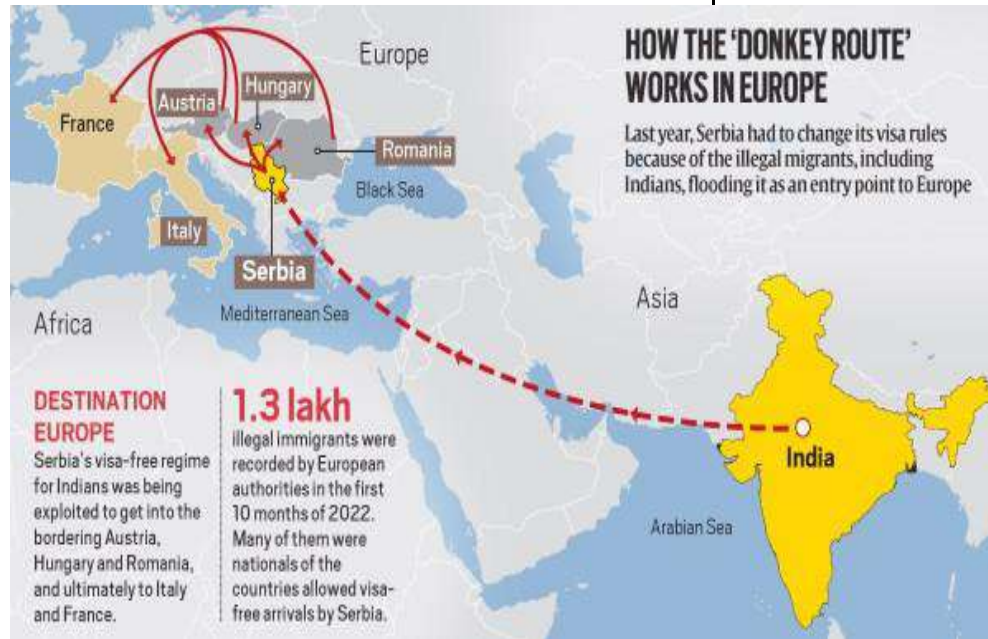
**Illegal migration:**

- Post-independence, many families that migrated to more developed nations **found better social, economic, and sometimes even political conditions** than their Indian counterparts. This may have built the desire to migrate to the West, hoping for a better life.
- As migration increases, illegal and irregular migration has also grown significantly.
- The cases of illegal migration often come to light when a prospective migrant falls prey to fraudsters and is cheated by unscrupulous agents or is apprehended in a foreign country.
- According to a recent report presented during India's winter parliamentary session, which cited US homeland security data, US authorities encountered **over 200,000 illegal Indian immigrants in the past five years**, with the highest number, 96,917 cases, reported in 2022-23.

**What are 'donkey flights'?**

- It refers to an illegal method in which people cross a country's borders through a back-door route with multiple stops in other countries.
- The use of donkey flights by **undocumented immigrants** can be traced back to an era when people relied on donkeys for travel, a practice considered unconventional in today's world.
- While the conventional legal route involves obtaining visas for education and work in countries like the US and UK, the **'donkey flight' method is chosen by those who cannot do so through legal or financial means**.
- Central American countries such as **Mexico and Nicaragua are commonly perceived as the easy nations** from where one can land in the US without much hassle.
- The term "donkey flight" finds its roots in the **native language of Punjabi** where it means the act of hopping from place to place.

- This process involves **illegal border crossings, hiding in ships and containers**, and also poses the risk of being caught and being deported.



- The Ministry had constituted a **committee headed by Rina Mitra** to examine various methods to curb the misuse of free movement along the Myanmar border.

**Background:**

- India and Myanmar share an **unfenced border**, and people on either side have familial and ethnic ties, which prompted the arrangement in the 1970s.
  - The migrants belonging to the **Kuki-Chin-Zo ethnic group** share ethnic ties with communities in Mizoram and Manipur.
- **Under the FMR**, every member of the hill tribes, either a citizen of India or a citizen of Myanmar, who resides within **16 km on either side of the border**, can cross the border on the production of a border pass.

**Related data:**

According to data from the US Customs and Border Protection (CBP), the number of Indians attempting to enter the US land borders illegally increased by 51.61 per cent in the 2023 American fiscal year (1 October 2022-30 September 2023), compared to the 2022 fiscal year.

The CBP had encountered a total of 96,917 Indians at the Canadian and Mexican borders, of which 41,770 had tried to enter the US via the Mexican border (the Southwest Land Border) and 30,010 via the Canadian border (the Northern Land Border). Some Indians also overstayed tourist visas after landing directly in the US or travelled through other means apart from the two land borders.

**Way Forward:**

- Address the **root causes of illegal migration** from the country, especially Punjab, by enhancing economic opportunities, raising awareness about legal channels, and cracking down on fraudulent agents.
- **Strengthening diplomatic ties** with other countries to ensure transparent visa processes and cooperation in curbing illegal immigration while fostering international collaboration on border control measures.

**PEPPER IT WITH:**  
 Illegal Immigrant issue with different countries, Mexico & Nicaragua Maps

**Free Movement Regime (FMR)**

**News Excerpt:**

The Union government is all set to **scrap the Free Movement Regime (FMR) along the Myanmar border.**

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- The border pass **remains valid for a year**, and they can **stay for up to two weeks per visit**.
- The **FMR was implemented in 2018** as part of the Indian Government's Act East policy when diplomatic relations between India and Myanmar were on the upswing.
- Under the **upcoming regulation**, around **300 km of the border will be fenced**.
- The **Manipur government has suspended the FMR since 2020** following the COVID-19 pandemic.

**Significance of FMR:**

- The **British demarcated the border** between India and



Myanmar in 1826 without seeking the people's opinion in the region.

- The border effectively divided people of the same ethnicity and culture into two nations without their consent.
- People in the region have **strong ethnic and familial ties across the border**.
- Apart from facilitating people-to-people contact, the FMR provide impetus to **local trade and business**.
  - The region has a long history of **trans-border commerce through customs and border haats**.
  - Given the low-income economy, such exchanges are vital for **sustaining local livelihoods**.
- For border people in Myanmar, too, **Indian towns are closer to business, education, and healthcare** than those in their own country.

#### Need to scrap FMR:

- The move comes in the wake of the **large-scale displacement of Rohingya people from the Rakhine State in Myanmar to India**.
- The free movement regime is **misused by militants and trans-border criminals who smuggle weapons, contraband goods and fake Indian currency notes**.
- Taking advantage of the free-movement regime, they enter India, **commit crimes and escape to their relatively safer hideouts**.
- After a **military coup in Myanmar in February 2021**, there has been an **influx of undocumented migrants**; over 40,000 refugees have taken shelter in Mizoram, and around 4,000 refugees have entered Manipur.
- The **illegal migration of tribal Kuki-Chin peoples into India from Myanmar** is one of the key issues in the ongoing **ethnic conflict between Meiteis and Kukis in Manipur**.
  - It was reported that in 2023, armed Kuki militants comprising the Kuki National Army (KNA) and People's Defence Force (PDF) of Myanmar and security personnel arrived in India, paving the way for a major clash between Kukis and Meiteis in the border town of Moreh in Manipur's Tengnoupal district.

#### Way Forward:

- The regime has been reviewed from time to time, and most experts agree that the **FMR needs better regulation**.
- Given the interests of the local population, however, **neither the complete removal of the FMR nor full border fencing may be desirable**.
- Livelihoods will be impacted, and essential travel for health care and education may be hit.

- **Oinam's paper** argued that "it is **imperative for India to tackle the issue by pursuing the 'killing the snake without breaking the stick' approach.**"

#### PEPPER IT WITH:

Kuki-Chin-Zo ethnic communities, Meiteis, Refugee Crisis, Act East Policy

- FMR or no FMR is not an easy task. And all borders, even the fenced ones, are struggling to deal with drug trafficking.

## PRE-SHOTS

### Defence Upgrade Roadmap: Vijay Raghavan Committee

#### News Excerpt:

The nine-member Vijay Raghavan panel was set up by the Government last year to review the functioning of the Defence Research and Development Organization (DRDO) and is learned to have submitted its report this month.

#### Major recommendations of the committee:

- A top body **chaired by the Prime Minister, with the Defence Minister and the National Security Advisor as its Vice Presidents**, should determine the country's defence technology roadmap and decide on major projects and their execution.
  - **This top body called the Defence Technology Council (DTC)**, is proposed to have an executive committee chaired by the Chief of Defence Staff. The Principal Scientific Advisor, along with the three service chiefs and their vice chiefs, will also be its members.
  - The DTC, headed by the Prime Minister, would play a pivotal role in identifying the right players for specific defence technologies.
  - Furthermore, it will include representation from academia and industry, with two members from each sector.
- The panel has also suggested the creation of a separate **Department of Defence Science, Technology, and Innovation** under the Defence Ministry.
  - This department, proposed to be **headed by a technocrat**, will not only promote defence research and development in the academic and start-up ecosystem but also serve as the **secretariat for the DTC**.
  - As the DTC secretariat, this department will draw scientists from DRDO and academia, building a repository of knowledge on production expertise and conducting background research for the DTC, hence aiding its decisions on technology production. Moreover, the department will operate labs for testing and certification.

- **DRDO should focus on its original goal of research and development for defence and refrain from involving itself in productization, production cycles, and product management, tasks that are more suitable for the private sector.**
  - At present, DRDO remains engaged in all aspects of its projects, from research to development to production.

The Defence Technology Council and the Department of Defence Science, Technology, and Innovation should be operationalized swiftly to ensure effective collaboration between academia and industry for **optimizing defence research and development, addressing project delays, and thus enhancing national security capabilities.**

## Cyber Kidnapping

### News Excerpt:

A Chinese student who was a victim of 'cyber kidnapping' has been found in rural Utah, USA, unharmed. Experts believe that with the rise of Artificial Intelligence (AI), such crimes can rise.

### What is cyber kidnapping, and how does it work?

Cyber kidnapping refers to a crime where the 'kidnappers' convince their victims to hide and then contact their loved ones for ransom.

- **Through pictures:**
  - The victim is made to send pictures that **make it look like they are being held captive** — showing them bound or gagged. These are then shared with the family. Both parties believe their loved ones will be harmed if they don't do as the kidnappers ask.
  - The 'kidnappers', though not physically present, monitor the victim online through video-call platforms.
  - According to the **FBI's website**, although virtual kidnapping takes on many forms, it is always an extortion scheme. Unlike traditional abductions, virtual kidnappers have not actually kidnapped anyone. Instead, through deceptions and threats, they coerce victims to pay a quick ransom before the scheme falls apart.
- **Through Voice:**
  - Experts believe that with the **rise of Artificial Intelligence (AI)**, such crimes can rise, as scammers can send people **voice notes that sound exactly like a loved one in distress.**
  - While there is no clear data yet on how many such crimes occur each year, law enforcement experts say they are on the rise.
  - This can also evolve into a much larger crisis as they can **specifically target a racial class in a foreign land, leading to more hate crimes.**

### Recommended Protection Measures:

- According to experts, people should be extra careful with **calls from unknown numbers**, even though

cybercriminals can make it appear like they are calling from a loved one's number.

- Experts also recommend **checking up on your loved ones** before making payments and to approach the police.

Scammers can also use **shared data on social media** to make their calls more convincing, so people need to be careful of what data they share, especially names, specific locations, pictures, neighbourhoods, or children's schools on social media.

## Exercise Desert Cyclone

### News Excerpt:

The UAE Land Forces contingent arrived in India to participate in the **1st edition** of the **India - UAE Joint Military Exercise.**

### About the exercise:

- The Exercise was conducted in the **deserts of Bikaner in the Mahajan range, Rajasthan.**
- The Exercise aimed to **enhance cooperation and interoperability in Sub-conventional Operations, such as in desert/semi-desert terrain, under the United Nations Charter on Peacekeeping Operations.**
- **Drills** planned to be rehearsed include establishing a **Joint Surveillance Centre, Cordon and Search Operation, Domination of Built-Up Areas and Heliborne Operations.**

### Other exercises between India and UAE:

- **Exercise DESERT EAGLE:**
  - Desert Eagle is a bilateral exercise between the Indian Air Force and United Arab Emirates Air Force.
- **Exercise Zayed Talwar**
  - It is a bilateral exercise between the Indian and UAE navies.

## Project SAMBHAV

### News Excerpt:

Army initiates Project SAMBHAV (**Secure Army Mobile Bharat Version**) – an **end-to-end encrypted mobile ecosystem**, representing a major leap forward in India's defence capabilities.

### Features of SAMBHAV:

- **End-to-end Encryption:** SAMBHAV is designed to provide end-to-end encryption for secure communication. This means that the data transmitted between devices within the SAMBHAV ecosystem is encrypted, and only authorized parties with the corresponding decryption keys can access the information. The mobile ecosystem also employs multi-tier encryption for added security.

- **5G Technology:** It operates on contemporary 5G technology, allowing for high-speed and reliable communication, making it suitable for dynamic and mobile military operations.
- **Network Agnosticism:** It is described as a network-agnostic system. This means that it can seamlessly operate across different types of networks, including various cellular networks. This adaptability ensures that secure communication is maintained regardless of the specific network infrastructure available.
- **Indigenous Operating System:** It is designed to meet the security and operational requirements of the Indian Army, reducing reliance on commercial or foreign systems.
- **Dual-Use Infrastructure:** It may leverage both civilian and military infrastructure for enhanced functionality, thus being of 'Dual-Use'. This approach could contribute to interoperability and resource optimization for the forces.
- **Scalability:** It is designed to be scalable, aiming to configure a significant number of sets. This scalability is essential for widespread adoption within the Indian Army, providing secure communication capabilities across a large user base.

## Operation Sarvashakti

### News Excerpt:

The Indian Army launched **Operation Sarvashakti** on the lines of **Operation Sarp Vinash**.

### About Operation Sarvashakti:

- The Indian Army launched Operation Sarvashakti, involving security forces from both sides of the **Pir Panjal range** in Jammu and Kashmir to flush out terrorists who have been involved in a series of ambushes on Indian troops carried out in areas of **Rajouri and Poonch**.
- **Pakistani proxy terrorist groups** have tried to revive terrorism in the **South of Pir Panjal ranges in recent times**, and it is suspected that they are hiding in the dense jungles, mountains and caves dotting the area.
- The Jammu and Kashmir Police, CRPF, Special Operations Group, and the intelligence agencies would be **closely coordinating the operation**.

### About Operation Sarp Vinash

- Operation 'Sarp Vinash' was undertaken by the Army to flush out terrorists who had made bases in the Hilkaka Poonch-Surankot area of the Pir Panjal range during April-May 2003.

## Sadbhavana Scheme: Army Adopts Topa Pir as a model village

### News Excerpt:

The Indian Army has rolled out fresh measures to reach out to the locals and started its initiative by adopting Topa Pir village in Poonch district.

### More about the news:

- Recent incidents in Topa Pir have evoked widespread criticism and dented the goodwill of the forces among the **Gujjars and Bakarwals, who mainly inhabit areas close to the region's Line of Control (LoC)**.

### What is Operation Sadbhavana?

- Launched by the Indian Army in **1998**, it is a unique humane initiative undertaken in J&K and Ladakh to address the aspirations of people affected by scrooge of terrorism.
- It focuses on improving the core social indices of **Education, Women & Youth Empowerment, and Health care** with a simultaneous thrust on capacity building by implementing community/infrastructure development projects.
- Operation Sadbhavana is aimed at helping the people to help themselves. Under it, the **Army acts as a facilitator and catalyst for development projects** that are identified jointly with the state administration and the people.
- **The Army actively assists in planning, provides technical assistance**, makes specialized equipment available, and conducts supervision.
- **Maximum use is made of local labour, craftsmen and materials** so that the money spent on the projects is pumped into the local economy.
- Women and children have been the worst sufferers of terrorist activities. So, they have been the natural focus of Operation Sadbhavana, which aims to improve their lot and ameliorate their suffering.
- **Major Programs under the Sadbhavana scheme:**
  - **Running Army Goodwill Schools in Kashmir** that provide quality education at an affordable cost to children in remote areas where schooling facilities are either non-existent or primitive.
  - Operating centres for **community development, skilling, women empowerment and youth guidance**.
  - Conducting tours outside Kashmir **to enhance awareness amongst locals**.
  - **Regularly conduct medical and veterinary camps** in remote areas.
  - Launching **employment-generating initiatives**.
  - **Inculcating interest in extracurricular activities** and pursuing talent and hobbies by organizing events where the youth can demonstrate their talent and proficiency in music, art and sports.
  - **Conduct coaching for all-India competitive exams** and establish Youth Employment Guidance Nodes.

## Ugram Rifle

### News Excerpt:

The Defence Research Development Organisation (DRDO) has unveiled an indigenously developed rifle named 'Ugram' in less than 100 days.

### About the Rifle:

- The rifle will be able to deploy rounds of **7.62 mm calibre**, which will make it more ferocious compared to rifles that use 5.62 mm calibre rounds.
- The rifle weighs **4 kg and will have an effective range of 500 metres**, which is nearly five football fields.
- **The rifle has 20 rounds and fires both single and automatic modes.**
- The rifle has been developed in accordance with the **Army's General Staff Qualitative Requirements (GSQR).**
- Choosing between the Ugram and AK-47 depends on specific needs. Ugram offers a larger caliber, longer effective range, and is lighter with modern features. AK-47 is known for simplicity, reliability, and global familiarity. The choice depends on priorities like stopping power, manoeuvrability, and cultural factors.



### About GSQR:

- Formulating the GSQR is one of the initial processes of any new capital procurement.
- It broadly lays down the reason **why the equipment is required, its physical and operational details, as well as the maintainability and quality requirements.**
- The onus of formulating the GSQR rests with the parent directorate that wants the equipment or a nominated directorate in case the equipment is required by more than one arm/service.

## New Android 'Chameleon' Trojan Malware

### News Excerpt:

A potent variant of the Chameleon Trojan malware is **threatening Android users by turning off biometric defences and exposing PINs.**

### About 'Chameleon Trojan' malware:

- It poses a substantial risk as it can disable even **fingerprint and face lock features** to access sensitive information sneakily.
- The malware strategically **attaches itself to legitimate Android applications**, such as the widely used **Google Chrome**, effectively **avoiding immediate detection.**
- Chameleon Trojan's modus operandi **varies depending on the Android version, i.e. it is highly adaptable.**
- The malware actively **pilfers on-screen content**, elevates its permissions, and utilizes gestures to navigate the device.
- By capturing entered PINs and passwords, the Trojan gains unauthorized access, paving the way for the **theft of sensitive information such as credit card details and login credentials.**
- The malware **collects data on users' app usage habits**, determining optimal periods for launching **attacks when users are least likely to be actively engaged with their devices.**

To mitigate the risk posed by Chameleon Trojan, cybersecurity experts advocate that users should not install Android apps from unofficial sources as well as must refrain from enabling the 'Accessibility service' for unfamiliar applications.



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## ART AND CULTURE

### Kalaram temple, Nashik

#### News Excerpt:

The PM of India recently visited the Kalaram Mandir on the banks of the Godavari in the Panchavati area of Nashik city in Maharashtra.

#### About the Historical background of the Temple:

Several important events described in the epic story of Lord Ram took place here.

- Ram, along with Sita and Lakshman, **spent the first few years of their 14-year exile in Dandakaranya**, the dense forest in central India of which Panchavati was a part.
- The temple is the site of a landmark agitation led by **Babasaheb Ambedkar** demanding temple **entry rights for Dalits more than 90 years ago**.

In 1930, **B R Ambedkar** and the Marathi teacher and social activist **Pandurang Sadashiv Sane**, known as Sane Guruji, led an agitation to demand access for **Dalits to Hindu temples** at the **Vitthal Temple in Pandharpur**.



#### Temple's Uniqueness and Architecture:

- The Kalaram temple derives its name from a **black statue of the Lord** — Kala Ram translates literally to "**Black Ram**".
- The sanctum sanctorum has **statues of Ram, Sita, and Lakshman**, and a black idol of **Hanuman at the main entrance**.
- The temple, which is visited by thousands of devotees every day, was **built in 1792 with the efforts of one Sardar Rangarao Odhekar**.

### Guruvayur Temple in Guruvayur, Kerala

#### News Excerpt:

India's Prime Minister recently performed darshan and puja at Guruvayur Temple in Guruvayur, Kerala.

#### Guruvayur Temple Entry Satyagraha:

- **The Guruvayur Temple Entry Satyagraha was initiated by the Indian National Congress in 1931 in Kerala's Thrissur district.**

- It was aimed to champion social reforms, eradicate social discrimination, and eliminate untouchability.
- During the Satyagraha, batches of upper-caste and harijan volunteers attempted to enter the temple while performing sankirtana which was denied by temple authorities.
- On September 18, 1932, the Satyagraha took a significant turn when **K. Kelappan**, the movement's leader, commenced an indefinite fast in protest against denying Harijans entry to the temple.
- Kelappan's hunger strike garnered nationwide sympathy, with leaders like G.D. Birla, Pandit Madan Mohan Malviya, and Purushottamdas Thakurdas urging the Zamorin of Calicut to open the temple to all communities.
- Lasting twelve days, the strike generated substantial pressure in favour of temple entry.
- Following Mahatma Gandhi's repeated appeals, Kelappan broke his fast on October 2, 1932.
- A subsequent referendum in the region revealed that over 77% of respondents favoured temple entry.



#### About the temple:

- Guruvayur Temple, also known as the **Dwarka (birthplace of Lord Krishna) of the South**, is **dedicated to Lord Vishnu**.
- The temple, dedicated to Lord Vishnu and the young form of Lord Krishna, is also known as Guruvayur Sree Krishna Temple.
- It is said that Krishna set his charioteer, Udhava, to save Vishnu's idol from being worshipped by him in Dwaraka.
  - Udhava sought the help of Lord Vayu (Lord of Winds), took the statue away from Kerala and installed it at Guruvayur. Since then, the place is known as 'Guru-Vayu-ur'.
- The **temple is also known** for its **elephant festival**. Devotees from all over the world gather here to witness magnificently dressed elephants.

## Sri Ranganathaswamy Temple:

### News Excerpt:

The PM of India will visit various significant temples in Tamil Nadu.

### Sri Ranganathaswamy Temple:

- Sri Ranganathaswamy Temple in Srirangam has won the **UNESCO Asia Pacific Award of Merit 2017 for cultural heritage conservation**.
- Sri Ranganathaswamy Temple (Located in Srirangam, Trichy) is part of the **Tentative list of India (nominated in 2014) in order to qualify for inclusion in the World Heritage List**.
- It is famous for its architectural grandeur and its numerous iconic gopurams. The main deity worshipped here is Sri Ranganatha Swamy, a reclining form of Bhagwaan Vishnu.



- Sri Ramanujacharya, the great philosopher and saint, is also deeply associated with this temple's history.

## Sri Arulmigu Ramanathaswamy Temple, Rameshwaram

- The main deity worshipped in this temple is Sri Ramanathaswamy, which is a form of Bhagwan Shiva.
- It is a widely held belief that the main lingam in this temple was installed and worshipped by Sri Rama and Mata Sita.
- The temple contains one of the longest temple corridors, which is also famous for its beautiful architecture.

It is one among the Char Dhams – Badrinath, Dwarka, Puri and Rameshwaram. It is also one among the 12 Jyotirlingas.



## Kothandaramaswamy Temple, Dhanushkodi

- This temple is dedicated to Sri Kothandarama Swamy.
- The name Kothandarama, means Rama with the bow. It is located in a place called Dhanushkodi.



## Veerabhadra Temple

### News Excerpt:

The PM performed darshan and puja at Veerabhadra temple in Lepakshi, Puttaparthi, in Andhra Pradesh.

- PM also heard the verses from the **Ranganatha Ramayan** in Telugu and witnessed the **tale of Jatayu** visually presented through the **traditional shadow puppetry art form from Andhra Pradesh known as Tholu Bommalata**.

### About Veerbhadra Temple:

- The Sri Veerabhadra Swamy temple, also known as the Lepakshi temple is **dedicated to Veerabhadra (the fiery incarnation of Lord Shiva)**.
- Lepakshi literal meaning is **Lepa + Akshi, an embalmed eye or a painted eye**.
- The temple is also known as '**Hanging Pillar Temple**'. There are a total of 70 pillars in this temple, out of which one pillar is not connected to the ground.
- The temple built on the hills of Kurmaseelam in the shape of a tortoise. It is said that this temple was built in the 16th century.

The Sri Veerabhadra Swamy temple and the Monolithic Bull (Nandi) at Lepakshi in Anantapur district known for the Vijayanagara sculpture and painting art tradition, had found **a place on the tentative list of the World Heritage Committee in 2022**.



### Tholu Bommalata

- Tholu bommalata is a popular shadow theater tradition practiced in Andhra Pradesh and certain regions of Karnataka. The expression Tholu bommalata literally means dance (atta) involving leather (tholu) and puppets (bommalu).
- Among several other traditions, the leather puppets which are the most important part of Tholu bommalata are unique for their large size.
- The concept of this folk-dance performance is based on epic stories, mostly based on Ramayana and Mahabharata to a small extent and few Vaishnava texts.

### Srimukhalingam Temple

#### News Excerpt:

ASI assures that a note will be sent to **UNESCO** about including the **Srimukhalingam temple** in Andhra Pradesh in the **World Heritage Structures list**.

#### About Srimukhalingam temple:

- It was constructed in the **9th century CE** by kings of the **Eastern Ganga Dynasty**, it contains exquisite sculptures from that period.
- It is built in the **Kalinga architectural style**. Similar to **Lingaraja temple**.
- It is located by the **Vamsadhara River** and is dedicated to **Lord Srimukha Lingeswara** (a form of Shiva).

#### Kalinga Architectural style:

- The **Nagara style** of northern India and the **Dravidian style** of south India were **combined** to create the Kalinga architecture.
  - The style is known for its **ornate, decorative and rich** architectural design.
- The **Parasurameswara Temple**, **Vaital Deula**, **Mukteswara Temple**, **Brahmeswara Temple**, **Lingaraj Temple**, **Rajarani Temple** in Bhubaneswar, **Jagannath Temple** in Puri and the **Sun temple** in Konark are famous examples of Kalinga Architectural style.



#### Eastern Ganga Dynasty:

- Also known as **Purba Gangas**, **Rudhi Gangas** or **Prachya Gangas**.
- According to **Chodaganga copper-plate grants**, the Eastern Gangas of Kalinga were a **branch** of Mysore's ruling Western Ganga family.

- They **constructed** the **Jagannath Temple** of Puri and **Konark Sun Temple** situated in Odisha, among others.

#### Vamsadhara River:

- The **origin** of the river lies on the **border** of Kalyansinghpur in the **Rayagada district** and Thuamul Rampur in the **Kalahandi district** of Odisha.
- Vamsadhara River rises in the **Eastern Ghats** of Orissa State, enters Srikakulam District in Bhamini Mandal, and finally falls into the Bay of Bengal near **Kalingapatnam** in Andhra Pradesh.

### Maharishi Valmiki Airport

#### News Excerpt:

Recently, Prime Minister **inaugurated** the newly built **Maharishi Valmiki Airport** in **Ayodhya, U.P**

#### About Maharishi Valmiki:

- He is referred to as **Adi Kavi**, or the **"first/original poet"** in **Sanskrit**.
  - This is because he is **credited** to having **composed** the **Ramayana**, believed to be the **first epic poem** in the Sanskrit literary tradition.
  - Valmiki's Ramayana is divided into **7 cantos or kandas**, each telling a different part of Lord Ram's story.
  - Valmiki himself makes an appearance in the **Bala and Uttara Kandas**, the first and last chapters of the epic.
- Prior to becoming a sage, Valmiki was known as **Ratnakar**, and was a feared **dacoit and hunter**.
  - While some versions of the story claim that he was actually born to a Brahmin before getting lost in the forest and **adopted by a hunter couple**, more subaltern versions of the story claim that he was born to a Bhil king.
- **Valmiki Jayanti** celebrated **every year** is also known as **Pargat Diwas**.
  - According to the **Hindu calendar**, it falls on the **full moon day** of the month of **Ashwin**, which corresponds to **September-October** in the **Gregorian calendar**.

#### About Maharishi Valmiki International Airport:

- The airport recently got a licence for the operation of flights from the **Director General Civil Aviation (DGCA)**.
- **Structure of Airport:**
  - The state-of-the-art airport, built at a cost of ₹1462.97 crore, **depicts the journey of Lord Ram's life** and has unique architecture that follows the **'Nagara Style'**, outlined with scriptures, presenting a culturally rich welcome to passengers.
  - Outside the airport, a **mural featuring a bow and arrow** has been installed, serving as a symbolic representation of the enduring efforts of Lord Ram.

- The **landscaping** of the airport is inspired by the use of **colours** representing the **five elements (Panch Tatva)**.
- The airport also features two distinct types of mural plaques, namely '**Daivik and Khandika**'.
  - In addition to this, a **wall mural dedicated to Lord Hanuman** has also been installed depicting his entire journey.

## Bengaluru airport wins award at UNESCO

### News Excerpt:

Bengaluru airport's Terminal 2 is recognized as one of the most beautiful airport terminals in the world.

### About the news:

- Prix Versailles, a Paris-based architectural awards jury, has recognised the new terminal of **Kempegowda International Airport** as one of the most beautiful airport terminals in the world.
  - It has been given the prestigious "**Special Prize for an Interior**".
- The airport is built on a **theme** representing the ethos of Bengaluru, known as the **Garden City of India**.
  - The **vertical gardens** and **bamboo roofs** across the large spread of the terminal give a unique experience to the passengers.

### About the Prix Versailles:

- It is an **annual architectural competition** held by **UNESCO** since 2015.
- The members of the Prix Versailles World Jury awards **24 World Titles** from **96 projects**, named -
  - **Selected Sites** (in the categories of Airports, Campuses, Passenger Stations and Sports) or
  - **Continental Laureates** (in the categories of Shops & Stores, Shopping Malls, Hotels and Restaurants).
- The competition **aligns** with the **principles of intelligent sustainability**, considering the projects' **ecological, social, and cultural impacts**.

### United Nations Educational, Scientific and Cultural Organization (UNESCO):

- The United Nations Educational, Scientific and Cultural Organization (UNESCO) was born on 16 November 1945.
- It is headquartered in **Paris** and contributes to **peace and security** by promoting international cooperation in **education, sciences, culture, communication and information**.
- UNESCO promotes **knowledge sharing** and the free flow of ideas to accelerate **mutual understanding** and a more perfect knowledge of each other's lives.
- UNESCO's programmes **contribute** to the achievement of the **Sustainable Development Goals** defined in the **2030 Agenda**.

- The Organization has **194 Members** and **12 Associate Members**.
- Membership of the United Nations carries with it the **right** to membership of UNESCO.
- States that are **not members** of United Nations may be admitted to UNESCO, upon **recommendation** of the **Executive Board**, by a **two-thirds majority vote** of the General Conference.
- Territories or groups of territories that are not responsible for the conduct of their international relations may be admitted as **Associate Members**.
- UNESCO's **global priorities** are **Africa** and **Gender Equality**.
- UNESCO's programmes **contribute** to the achievement of the **Sustainable Development Goals** defined in the **UN 2030 Agenda**.
- To be included on the **World Heritage List**, sites must be of outstanding universal value and meet at least one out of ten selection criteria explained in the **Operational Guidelines for the Implementation of the World Heritage Convention** which is the main working tool on World Heritage.

## The Kharsawan massacre of 1948

### News Excerpt:

Adivasis from Jharkhand's **Kolhan region** observe **January 1** as a day of **mourning** and **remembrance**.

### Historical background:

- In **1912**, the **Bengal Presidency** was **partitioned** to create **Bihar and Orissa Province**.
  - However, this new province had a large Adivasi population with its distinct culture and many grievances with both the British and non-tribal populations.
- Thus, in 1912 itself, the **demand** for a **separate tribal state** was articulated for the **first time** at **St Columba's College, Hazaribagh**.
- The **Simon Commission**, mandated to report on constitutional reforms in India, gave it **official credence** in 1930.
  - It deemed **Bihar and Orissa** the **most artificial Indian province**, as it **unified three distinct areas** with varying physical, social, linguistic, and cultural characteristics under a **single administration**.
- While **Orissa** was **carved out in 1936**, Adivasis' demands remained unheard.
- In **1938**, the **Adivasi Mahasabha** was **formed** to continue the struggle, with **Jaipal Singh Munda** (1903-70), former captain of the Indian hockey team, emerging as its tallest leader.

### Issue of Kharsawan's merger with Orissa:

- Kharsawan was a **small princely state** (less than 400 sq km) lying to the west of **Jamshedpur**.



- At the time of Independence, **Kharsawan**, alongside 24 other princely states in eastern India, decided to **accede to the Union of India** and **join** the state of **Orissa**.
  - After all, Kharsawan and neighbouring Saraikela (which today form the Saraikela Kharsawan district in Jharkhand) had **more Odia speakers** than Hindi speakers.
- However, most **Adivasis did not support this merger**. They also did not want to join Bihar — the alternative option.
  - They wanted a **separate Adivasi state**.

#### Action in Kharsawan:

- A huge **meeting** was called at Kharsawan on **January 1, 1948**, the day when the merger was to take place.
  - The **50,000-strong crowd** gathered and raised their demands in Kharsawan. However, due to some reason, **Munda could not show up**.
  - This was also the day of the **weekly haat** in the town. Moreover, many more were shopping at the nearby haat.
- Orissa military police** had taken charge of law and order in the town.
  - It **opened fire** at the crowd gathered for a protest and the weekly haat (market), **killing hundreds**.

#### Aftermath and conclusion:

- To date, there is **no consensus** regarding just how many lives were lost in the massacre.
  - The then-**Orissa government** confirmed **only 35 dead**.
- There is also **no clarity** regarding who was **responsible** for ordering the massacre.
  - Several committees** were made, and **investigations** were carried out, but **no report** came out.
- Today, a **memorial** stands at the marketplace in **Kharsawan**.
  - It has been a **“political pilgrimage” site** in the state, with several state leaders visiting the memorial on New Year’s Day through the years.

## Chavittu Natakam

### News Excerpt:

More than 500 women from Kudumbashree units across Kerala staged a Chavittu Natakam performance at Durbar Hall Grounds in Kochi.

### About Chavittu Natakam:

- Chavittu Natakam is a vibrant theatrical form, believed to have originated in Kerala after the arrival of the Portuguese. Emerging in the 16th Century AD in the Ernakulam District, Gothuruth is recognized as the birthplace of Chavittu Natakam, earning the island the

name 'Island of Festivals' due to numerous cultural events.

- Influenced by art forms like Kathakali and Kalaripayattu, Chavittu Natakam incorporates angika, vachika, and aharya abhinaya, lacking satvika elements, with trainers known as Annavi.
- The costumes in Chavittu Natakam bear a distinct Portuguese influence (Colourful roman attires), featuring brocade dresses, headgear, and crowns. Unlike other performing arts, this drama is presented on a raised platform constructed with planks on a wooden skeleton structure portraying stories from the



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## Makar Sankranti, Pongal, Lohri and more

### News Excerpt:

Cultural celebrations are held across many states of India under different names – Makar Sankranti, Pongal, Magh Bihu, etc. on the same day of 14th January.

### Why is Makar Sankranti or Pongal celebrated?

- This day (14th Jan) is a marker for a change of season**, warmer months are close and we are moving

Regional Variations in States			
Tamil Nadu:	Karnataka	Northern India	Eastern India (Assam)
<ul style="list-style-type: none"> <li>• <b>The four-day Pongal festival in Tamil Nadu</b> begins with bhogi, the day marked for cleaning the house and decorating its entrances with rice powder kolam or rangoli made with dried and coloured vegetables and grains.</li> <li>• The main festival is celebrated on the second day.</li> <li>• <b>The third day is celebrated as Mattu Pongal.</b></li> <li>• With mattu meaning bull in Tamil and ponga meaning the abundance of rice, the <b>festival honours the toil of bulls in ensuring a good harvest.</b></li> <li>• Every year, farmers assemble at the temple to offer prayers and seek blessings from Goddess Parvati, Lord Shiva, Lord Ganesha and Lord Krishna.</li> <li>• <b>Pongal, a dish of rice mixed with boiled milk and sugar</b> is prepared by all during this festival.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Here</b> the saying “Ellu bella thindu olle mathaadi” is heard, which translates to “eat the mixture of sesame seeds and jaggery and speak good words”.</li> <li>• A similar saying is popular in Marathi: “Tilgul ghya aani god god bola” (Here, have til-gud and speak sweetly).</li> <li>• Women and children go door-to-door exchanging plates containing a piece of sugarcane, a mixture of sesame seeds and jaggery and candy made out of caramelised sugar. <b>This tradition symbolises the virtues of sharing and spreading happiness.</b></li> <li>• <b>Farming communities also dress their cattle in vibrant costumes</b> and jewels and make them jump across a big fire pit. This showcase of cattle is locally known as ‘<b>Kicchu Haisodu</b>’.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Here</b> sesame and jaggery ladoos or chikkis are distributed.</li> <li>• <b>In Bihar, the festival is called ‘Khichdi’</b> and a dish of the same name (rice and lentils) is prepared.</li> <li>• <b>Bonfires are organised in Punjab</b> and elsewhere, with people walking around the fire and throwing groundnuts, even popcorn in the present-day, into the blaze.</li> <li>• <b>Kite-flying takes place in parts of Rajasthan and Gujarat</b>, along with the International Kite Festival held annually in Ahmedabad. In the evening, sky lanterns are also flown.</li> </ul>	<ul style="list-style-type: none"> <li>• Here the <b>Magh Bihu</b> is also called <b>Bhogali Bihu</b>, which is quintessentially the festival of food. The Magh Bihu marks the end of the harvesting season.</li> <li>• The eve of the Magh Bihu is called the <b>Uruka</b>. It is the most gastronomical night of the year in Assam when family and friends get together and feast around a bonfire.</li> <li>• The next day is the main Magh Bihu. In the early morning, people take a bath and burn the main ‘Meji’ built with bamboo and wood. Varieties of Pitha or rice cakes which are parts of the Assamese delicacy add richness to the feast.</li> </ul>

- away from winter, which is seen as a period of inactivity in many ways.
  - **The northward journey of the sun (Uttarayan) begins on this day.**
  - In the Hindu belief system, the end of January heralds the beginning of longer days.
  - **It marks the Sun changing directions and shifting its trajectory towards the north**, therefore, entering the Makara or Capricorn zodiac sign.
- **Scientifically, for the Northern Hemisphere, the axis points move toward the sun in June (specifically around June 21), and away from the sun around December 21.**
  - This corresponds to the Winter and Summer Solstice.
  - For the Southern Hemisphere, the above process is reversed.

**Why on 14th January:**

- Most festivals follow the lunar cycle but **Makar Sankranti follows the solar cycle** and thus, is celebrated almost on the same day every year.
  - **Sankranti is worshipped as a God**, who legends believe killed the devil Sankarasur.

**Rituals associated with Makar Sankranti or Pongal:**

- Sankranti activities, **like taking a bath, offering Naivedhya** (food offered to the deity) to the Sun god

- Lord Surya, offering **charity or Dakshina**, performing Shradha rituals and breaking fast should be done during **Punya Kaal**.
  - If Makar Sankranti happens after sunset, all **Punya Kaal** activities are postponed till the next sunrise.
- Worshippers usually **bathe in sacred rivers** such as the Ganga, Yamuna, Godavari, Krishna, and Cauvery.
- For believers, **taking a dip absolves them of their sins.**



## Statue of Social Justice

### News Excerpt:

The Andhra Pradesh government will unveil the world's tallest statue of BR Ambedkar, standing 206 feet from the ground in Vijayavada, and it will be called the '**Statue of Social Justice**'.

### Features of the 'Statue of Justice':

- The world's tallest Ambedkar statue stands 125-feet tall and stands on an 81-feet pedestal.
  - The **second-tallest Ambedkar statue**, which is 175 feet, is **situated in Telangana**.
- The project to build the statue incurred ₹404.35 crore and it is spread over 18.81 acres of land covered in a lush green park.
- The area surrounding the statue, along with the Swaraj Maidan, where it was built, has been re-developed.
  - Water bodies in the forecourt, three-sided peripheral water body for the pedestal and a musical water fountain were built in the area.
- LED screens have been set up to display Ambedkar's life, a convention center of 2,000 seating capacity, a food court of 8,000 sq ft along with children's playing area were also built at the site.
- The statue is **India's tallest non- religious, Made in India Statue** and World's tallest statue of Ambedkar, according to a press release from the Department of Information and Public Relations (I&PR).



## Asian Buddhist Conference for Peace (ABCP)

### News Excerpt:

While inaugurating the 12th General Assembly of the ABCP, the Vice President of India said that Buddha's teachings are not relics of the past but a compass for our future.

- **Theme of 12th General assembly: "ABCP - The Buddhist Voice of Global South."**

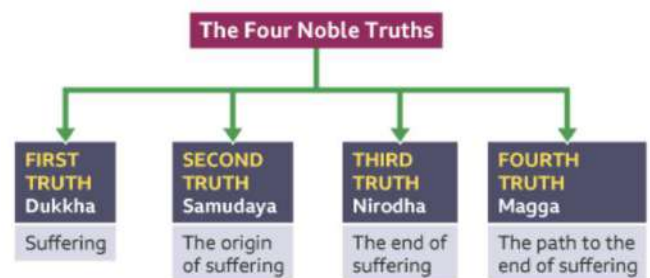
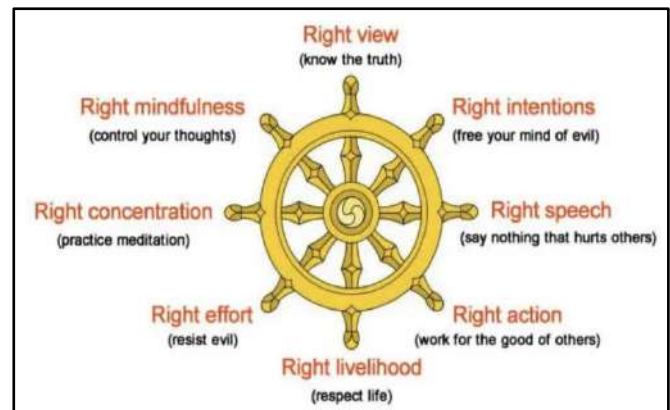
### About ABCP:

- Asian Buddhist Conference for Peace (ABCP) was founded in 1970 at Ulaanbaatar, Mongolia as a voluntary movement of followers of Buddhism with both monastic (monks) and lay members.
- It is currently headquartered at the Gandantegchenling Monastery in Ulaanbaatar, Mongolia and the Supreme Head of Mongolian Buddhists, Most Venerable Khambo Lama of Gandan, Gabji Demberel Choijamts is the ABCP President.

### The aims of ABCP:

- Striving to disseminate and implement the teachings of the Lord Buddha - the Enlightened One, on peace and harmony, compassion and loving-kindness for all sentient beings, ABCP aims to:
- Bring together efforts of Buddhists in support of consolidating universal peace, harmony and cooperation among peoples of Asia.
- Furthering their economic and social advancement and promoting respect for justice and human dignity.
- Disseminating the Buddhist culture, tradition and heritage.

### 8 Fold path and 4 Noble Truths of Buddhism:



## PERSONALITIES IN NEWS

### Savitribai Phule and Rani Velu Nachiyar

#### News Excerpt:

The PM of India paid tributes to **Savitribai Phule** and **Rani Velu Nachiyar** on their Jayanti.

#### Savitribai Phule:

- Born on January 3, 1831, in Maharashtra's Naigaon village, Savitribai, a **Dalit woman from the Mali community**, faced early marriage at 10 to **Jyotirao Phule**.
- Despite societal norms, Jyotirao educated her and enrolled her in a teachers' training institution in Pune.
- The couple defied conventions by **establishing India's first girls' school in Bhidewada**, Pune, in 1848.
- Savitribai actively supported social reforms, advocating for inter-caste marriages, widow remarriage, and fighting against child marriage, sati, and dowry systems.
- In 1873, they established the **Satyashodhak Samaj** for social equity. Savitribai's literary contributions include the poetry collection "Kavya Phule" at 23 in 1854 and "Bavan Kashi Subodh Ratnakar" in 1892.

#### Rani Velu Nachiyar:

- Rani Velu Nachiyar, also known as Veeramangai among Tamils, holds the distinction of being the first queen to resist British colonial power in India.
- Born into the royal family of Ramanathapuram, she was the sole child of Raja Chellamuthu Vijayaragunatha Sethupathy and Rani Sakandhimuthal. Trained extensively in martial arts, weaponry, horse riding, and languages like French, English, and Urdu, she married the king of Sivagangai.
- After her husband's death at the hands of British soldiers and the Nawab of Arcot's son, she entered into battle.
- Taking refuge with her daughter under Palayakaarar Kopaala Naayakkar at Virupachi near Dindigul for eight years, she eventually returned to Sivaganga. Following an agreement, Rani Velu Nachiar, along with the Marudhu Brothers, took control of Sivaganga, with Velu Nachiar becoming the queen in 1780. She granted governing powers to the Marudhu Brothers, and she passed away on December 25, 1796.

### Swami Vivekananda

#### News Excerpt:

The President paid tributes to the spiritual leader and social reformer Swami Vivekananda on his birth anniversary.

#### About Swami Vivekananda:

- He was born on **January 12, 1863**, in Calcutta (now Kolkata) and he died on **July 4, 1902**, near Calcutta.
- He was a Hindu spiritual leader and reformer who strove to **reconcile Indian spirituality with Western practical advancement**, arguing that the two supplemented and complemented one another.
- He carried on the free-thinking philosophy of his guru, **Ramakrishna Paramhansa** forward into a new paradigm.



#### Swami Vivekananda's Teachings and works:

- His lectures, letters, and poems are published as '**The Complete Works of Swami Vivekananda**'.
- His teachings and writings focused on **Vedanta philosophy**.
- **Life as Monk:** Vivekananda **left Math in 1886** and went on a tour of India on foot as a '**Parivrajak**'. He witnessed the adversities of life that the common people faced, and their ailments, and vowed to dedicate his life to bring relief to the suffering.
- **Lecture at the World Parliament of Religions:** He attended the World Parliament of Religions being held in Chicago, America in **1893** and represented India, Hinduism, and his Guru Sri Ramakrishna's philosophies there.
  - On 11 September 1893, he took the stage with his opening line "**My brothers and sisters of America**". He went on to describe the **principles of Vedanta and their spiritual significance**, putting Hinduism on the map of World Religion.
- **Vedanta Society:** He spent the next two and a half years in America and **founded the Vedanta Society of New York in 1894**. He also traveled to the United Kingdom to preach the tenets of the Vedanta and Hindu Spiritualism to the Western world.

- He encouraged the **practice of Advaita Vedanta** in people's daily life linked with society.
- **Ramakrishna Mission:** He founded the Ramakrishna Mission on May 1, 1897, **at Belur Math** near Calcutta.
  - **The goals of the Ramakrishna Mission** were based on the ideals of **Karma Yoga and its primary objective** was to serve the poor and distressed population of the country.
- **Brahmo Samaj:** He joined the **Brahmo Samaj (Society of Brahma)**, dedicated to eliminating child marriage and illiteracy and determined to spread education among women and the lower castes.

#### Philosophy of Vedanta by Swami Vivekananda

- The Philosophy of Vivekananda owes its origin from the thoughts of Advaita, by Sri Rama Krishna, with the theory, "**Brahman alone is real, true all else is false. I am Brahman.**"
  - The **central idea of Vedanta is oneness.** According to Vivekananda "There are no two in anything, no two lives. There is but one life, one world, one Existence, everything is that one, the **difference is in degree and not in kind**".

- The word Vedanta literally means the **end of the Vedas**, the Vedas being the scriptures of the Hindus.
- **Advaita Vedantists**--the non-dualists--reject the theory of the soul and build their philosophy entirely upon Upanishads.
- Religion, according to Vivekananda must **provide men with strength and inspiration in all situations of life.**

#### About National Youth Day:

- India celebrates **12 January** as the National Youth Day in honor of Swami Vivekananda, whose birth anniversary falls on that day.
- Since **1984**, the nation has marked the day by urging the youth to live up to the values, principles and beliefs that Vivekananda embraced.
- As a part of National Youth Day celebrations, India organizes an annual National Youth Festival from January 12 to 16.
  - The host state for the Festival this year is **Maharashtra**. The theme of this year's festival is "**Viksit Bharat@ 2047: Yuva ke liye, yuv a ke dwara**".



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## GOVERNMENT SCHEMES

### GI tags for over 17 products from Odisha, Arunachal Pradesh, West Bengal, and J&K

#### News Excerpt:

Recently, 17 products from Odisha, Arunachal Pradesh, West Bengal, and J&K were added to the Geographical Indications (GI) tag.

Product (State)	Features
<b>Odisha</b>	
<b>Lanjia Saura paintings</b>	<ul style="list-style-type: none"> <li>The Lanjia Saura paintings are a style of <b>wall mural art</b>.</li> <li>Those paintings are also called '<b>ekons</b>' or the '<b>idital</b>,' and have a significant <b>spiritual importance for the tribe</b>.</li> <li>The Lanjia Sauras are an <b>indigent society</b> today, and they labour to preserve their culture, the 'iditals' being an important part of it.</li> </ul> 
<b>Dongaria Kondh shawl</b>	<ul style="list-style-type: none"> <li>The traditional knitted shawls of the <b>hill tribe Dongaria Kondh</b> are unique and ancient.</li> <li>Their culture, tradition, faith, and beliefs, as well as the biodiversity of their forests, are reflected in the shawls.</li> <li><b>Dharanipenu</b>, the much-adored <b>goddess of the Dongaria</b>, has a home in every village.</li> <li>The art and drawings made in the Dharanipenu residence are reflected in their shawls.</li> </ul> 
<b>Khajuri Guda</b>	<ul style="list-style-type: none"> <li>Odisha's Khajuri Guda (<b>date palm jaggery</b>) is a <b>natural sweetener</b> produced from the <b>sweet juice of palm called neera</b>.</li> <li>The tribal populations, including the Lanjia Saura of Gajapati, Boudh, Angul, and Dhenkanal districts in Odisha, prepare the jaggery.</li> </ul> 
<b>Dhenkanal Magji</b>	<ul style="list-style-type: none"> <li>It is a famous and <b>unique sweet</b> of the Dhenkanal district.</li> <li>Its taste, flavour, and preparation method have made it unique.</li> <li>The <b>buffalo milk cheese</b> gives it a unique flavour, and cardamom powder adds to its unique aroma.</li> </ul> 
<b>Similipal Kai Chutney</b>	<ul style="list-style-type: none"> <li>The 'Kai' is <b>indigenous to Mayurbhanj and Keonjhar</b>, abundant in the jungles of every block area of the districts.</li> <li>The Kai Chutney <b>prepared from these Kai</b> is the main <b>source of protection for the health and safety measures of the local tribes</b>.</li> <li>The tribes in the Mayurbhanj and Keonjhar Districts commonly use chutney as a delicious food and <b>traditional medicine to treat different ailments in their daily life</b>.</li> </ul> 
<b>Kanteimundi Brinjal</b>	<ul style="list-style-type: none"> <li>The Nayagarh Kanteimundi Brinjal is a vegetable crop with <b>lots of prickly thorns on the flesh</b>.</li> </ul> 
<b>Koraput Kalajeera Rice</b>	<ul style="list-style-type: none"> <li>Koraput Kalajeera Rice, known as the '<b>Prince of Rice</b>', is an <b>aromatic variety</b> originating from the Koraput district of Odisha.</li> <li>Upholding the <b>nutritional and cooking quality</b>, the rice <b>looks like coriander seeds</b>.</li> <li>The ancestors of the present tribal communities of the Koraput district have domesticated the rice in the region for thousands of years, contributing to the conservation of the crop.</li> <li>It is popular among rice consumers for its <b>black colour</b>, good aroma, taste and texture.</li> </ul> 

<b>West Bengal</b>	
<p><b>Garad silk sarees:</b></p> <ul style="list-style-type: none"> <li>• <b>Characterized by a plain white or off-white body</b>, an unornamental coloured border, and a striped pallu. <ul style="list-style-type: none"> <li>■ They were earlier <b>worn for performing pujas</b>.</li> </ul> </li> </ul> <p><b>Korial saree:</b></p> <ul style="list-style-type: none"> <li>• <b>Lavish silk ones are in either a white or cream base</b> and have the characteristic <b>heavy gold and silver embellishments of Benarasi sarees</b> in the border and pallu, which is the ornamental end of the sari normally worn thrown over the shoulder. <ul style="list-style-type: none"> <li>■ Korial and Garad are woven in Murshidabad and Birbhum.</li> </ul> </li> </ul> <p><b>Tangail Saree of Bengal:</b></p> <ul style="list-style-type: none"> <li>• <b>woven in the Nadia and Purba Bardhaman</b> districts.</li> <li>• It has a finer count and is <b>decorated with extra warp designs</b> using <b>coloured yarn</b>.</li> </ul> <p><b>Kalonunia Rice:</b></p> <ul style="list-style-type: none"> <li>• This is an indigenous variety of <b>aromatic fine rice</b> available in the state.</li> <li>• It is cultivated in the districts of Jalpaiguri, Cooch Behar, Alipurduar and Darjeeling (plains regions of the district).</li> <li>• It is a <b>medium-sized blackish grain</b>.</li> </ul> <p><b>Sundarban Honey:</b></p> <ul style="list-style-type: none"> <li>• Sundarban honey is <b>darker in colour</b> and has better <b>radical scavenging properties</b> that imply <b>anti-ageing benefits</b> and help in <b>cell protection</b>, attributed to <b>polyphenols and flavonoids</b>.</li> <li>• It focuses on natural methods of honey collection in the Sundarban area, which does not harm the bees while collecting honey and is, hence, environmentally friendly.</li> </ul>	
<b>Kachchi (Gujarat)</b>	<p><b>Kharek</b></p> <ul style="list-style-type: none"> <li>• This is a variety of dates grown in the <b>Kutch region</b> of Gujarat.</li> <li>• Kutchi Kharek dates have a <b>soft and chewy texture</b>.</li> <li>• They are known for their <b>natural sweetness</b> and rich, <b>caramel-like flavour</b>.</li> <li>• The <b>flesh is juicy</b> and tender.</li> </ul> 
<b>Wancho Wooden Craft (Arunachal Pradesh)</b>	<ul style="list-style-type: none"> <li>• The Wancho Wooden Craft intimately weaves into the socio-cultural fabric of the skilful Wancho of the Longding and Changlong districts.</li> <li>• Wancho tribes have practised this rare ethnic art for generations.</li> <li>• It is <b>used to decorate their drawing rooms and as a gift to beloved friends</b>.</li> <li>• In the past, the Wanchos would make wood carvings to decorate the posts and log drums in the paa or paang (boys' dormitory) or to decorate the village chief's house.</li> <li>• Wancho wooden craft items are unique, featuring tobacco pipes with head-shaped bowls and drinking mugs showing warriors carrying heads.</li> </ul> 
<b>Ramban (J&amp;K)</b>	<p><b>Anardana</b></p> <ul style="list-style-type: none"> <li>• <b>Ramban Anardana, locally referred to as "Dhruni,"</b> is an important fruit tree growing wild in hilly tracts and forests of Jammu and Kashmir State between 1000-2500 mean sea level.</li> <li>• <b>The Anardana (Punica granatum)</b> is a fruit-bearing deciduous shrub or small tree growing between 5 and 8 m (16–26 ft) tall.</li> <li>• <b>Ramban Anardana fruit grows</b> in the wild.</li> <li>• <b>The fruit of Ramban Anardana ripens</b> in the middle of <b>October and is handpicked</b>.</li> </ul> 
<b>Arunachal Pradesh</b>	
<p><b>Adi Kekir (Ginger):</b></p> <p>It is a variety of ginger produced in <b>East Siang, Siang and Upper Siang districts of Arunachal Pradesh</b>.</p> <ul style="list-style-type: none"> <li>• It is known for its taste and size.</li> </ul>	<p><b>Handmade Carpets:</b></p> <ul style="list-style-type: none"> <li>• The handmade carpets <b>made by Tibetan refugees</b> who live in various parts of the state are known for their <b>typical designs, motifs and textures</b>.</li> </ul>

## River Rejuvenation Project 'Devika'

### News Excerpt:

The government is set to unveil North India's **first** river rejuvenation project 'Devika'.

### About Project 'Devika'

- The project DEVIKA was launched by the Prime Minister in February 2019.
- It is built on the lines of '**Namami Gange**'.
- The **Liquid Waste Management (LWM) project** has been undertaken separately to protect the sanctity of the holy river in Udhampur, Jammu & Kashmir.
- This project has been included in India's government's **National River Conservation Project (NRCP)**.
- The LWM project, with a network of pipes and manholes connecting all the households under the project, is being constructed by **J&K's Urban Environmental Engineering Department (UEED)** to protect its sanctity.
- The **sharing of fund allocation is in the ratio of 90:10** by the **Centre and UT** (Jammu & Kashmir), respectively.
- Besides a Liquid Waste Management Project, a **Solid Waste Management (SWM)** project will also be constructed under the Devika Rejuvenation Project, which is vital in many aspects of protecting the sanctity of the river.
- The project also includes constructing three sewage treatment plants, developing two cremation ghats, protecting fencing and landscaping, small hydropower plants, and three solar power plants.

### About Devika river:

- The Devika River originates from the hilly Suddha Mahadev temple in the **Udhampur district of Jammu and Kashmir**.
- It flows down towards **western Punjab** (now in Pakistan), where it merges with the **Ravi River**.
- The river presently runs under its sandy surface.

### Religious significance

- Devika River is considered the **sister of the sacred river Ganga** and has a great religious significance.
- This River is mentioned in the **Nilmat Puran**, which was written in the 7th century by **Nela Muni**. Also, this river is mentioned in **Devi Mahatmya**.
- Cremation on the sands of Devika is considered as meritorious as cremation on the banks of the Ganges at Kashi.

### Conservation of Lakes and Rivers:

- The National River Conservation Plan (**NRCP**) by the **Ministry of Environment and Forests (MoEF)** aims to prevent the pollution of rivers and improve water quality.
- NRCP is implemented for the abatement of pollution in identified stretches of rivers in the country, excluding those in the Ganga basin, by providing financial and technical assistance to the States/Union Territories (UTs) on a cost-sharing basis.
- Central Pollution Control Board (CPCB), in association with the State Pollution Control Boards/Committees in different States/UTs, has been monitoring the water quality of rivers and other water bodies in the country through a network of monitoring stations under the **National Water Quality Monitoring Programme**.

### Namami Gange Programme:

- It was launched under the **Ministry of Jal Shakti** in June 2014 for a period up to March 31 2021, **to rejuvenate River Ganga and its tributaries** with a budgetary outlay of Rs.20,000 crore.
- Considering the need and spread of the Programme, the Government of India has further approved Namami Gange Mission-II with a budgetary outlay of Rs.22,500 crore till 2026.

## Prerana: An Experiential Learning Program

### News Excerpt:

The Department of School Education & Literacy, **Ministry of Education**, has **launched** 'Prerana: An Experiential Learning program'.

### About PRERNA:

- **Objective:**
  - It **aims** to provide participants with a unique, inspiring experience, foster **leadership qualities**, and integrate **Indian education system** principles with **value-based Education**, a key component of the National Education Policy (**NEP**) 2020.
- **Target students:**
  - Prerana is a **week-long residential program** for selected classes **IX to XII students**.
    - A batch of **20 selected students** (10 boys and 10 girls) from various parts of the country will attend the program **every week**.
- **Venue:**
  - The Prerana program will run from a **Vernacular School**, established in **1888**, in one of the oldest living cities of India, **Vadnagar**, district Mehsana, **Gujarat**. (home to ancient heritage sites and monuments inhabited since the early historic period)



- The program **aligns** with the **principles** and **ideals** of the **Prime Minister** of India, who is an **alumnus of the school**.
- Prerana School, curated by **IIT Gandhinagar**, is centred around **nine value-based themes**, encompassing ideals like self-respect, courage, dedication, compassion, unity, truthfulness, innovation, faith, and independence.
- The **curriculum** aims to instil these values in the youth, fostering a sense of unity in diversity and contributing to the vision of a developed India.
- The **daily schedule** includes yoga, mindfulness, experiential learning, and various activities, ensuring a comprehensive approach to Education.
- **Evening activities** encompass visits to historical sites, film screenings, creative sessions, talent shows, and more.
- **Registration** is open through the portal, and selected participants will carry the Prerana ethos into their communities, becoming catalysts for positive change.

## ERNET India's web portal

### News Excerpt:

MeitY launches ERNET India's web portal for domain registration, DNS and value-added services for educational institutions.

### About:

**Ministry of Electronics & Information Technology (MeitY)** Secretary Shri S Krishnan launched ERNET India's newly developed **integrated web portal for educational institutes** in the country at its head office in Delhi.

### What is ERNET?

- The **ERNET** (Education and Research Network of India) is a **not-for-profit** scientific society under MeitY.
  - It is the exclusive domain registrar for all the education & research institutes having 'ac.in', 'edu.in' & 'res.in' as a domain names.
- **Vision:** To advance Indian Research and Education by operating and developing world-class Networks, Applications and Services.
- **Mission:** Provide Network Infrastructure Services and Connectivity addressing the requirements of India's Research and Education sector, facilitating them to become increasingly efficient and effective in their chosen field.
  - Undertaking cutting edge Research and Development in Networking and its Applications and also development of Human Resources in Networking.
- **Objectives:**

- Operations of National Academic and Research Network: Providing a world-class, reliable, robust and state-of-the-art Network Services to Academic and Research institutions of the country.
- Research and Development in the area of Data Communications and its applications.
- Human Resource Development in the area of Networking.
- Consultancy and implementation of ICT Projects for target Users.
- In addition, ERNET India provides **web accessibility service**, campus Wi-Fi services, smart classrooms and connectivity through Terrestrial and satellite-based systems to the educational & research institutes in the country.
- It is also in the field of establishing **data centres**.

### Significance of ERNET India's web portal:

- The portal will offer domain registration, DNS and value-added services viz. **Website as a Service (WaaS)** and **Learning Management as a Service (LMaaS)**.
- The users can select from the variety of available templates for schools, colleges, and universities as per their requirements and create their **own website** and **Learning Management System (LMS)**.
- The user can publish the website and LMS by customizing the template with a single click. This web portal has been developed utilizing **open-source software** and emerging technologies such as **AI/ML**.

## "PRITHvi Vigyan (PRITHVI)" Scheme

### News Excerpt:

The **Union Cabinet** has **approved** the overarching scheme **"PRITHvi Vigyan (PRITHVI)"** by the **Ministry of Earth Sciences**.

### About:

- **Objectives of the overarching Prithvi Scheme:**
  - Augmentation and sustenance of **long-term observations** of the **atmosphere, ocean, geosphere, cryosphere** and solid earth to record the vital signs of the Earth System and change.
  - Development of modelling systems for understanding and predicting **weather, ocean** and **climate** hazards, and the science of climate change.
  - Exploration of polar **and high seas regions** of the Earth towards discovery of new phenomena and resources.
  - Development of technology for exploration and sustainable **harnessing** of **oceanic resources** for societal applications.

- **Translation of knowledge** and insights from Earth systems science into services for societal, environmental and economic benefit.
- **Components:** The scheme encompasses five ongoing **sub-schemes** namely -
  - Atmosphere & Climate Research-Modelling Observing Systems & Services (**ACROSS**)
  - Ocean Services, Modelling Application, Resources and Technology (**O-SMART**)
  - Polar Science and Cryosphere Research (**PACER**)
  - Seismology and Geosciences (**SAGE**)
  - Research, Education, Training and Outreach (**REACHOUT**)
- **Implementation authority:**
  - It is to be implemented by the Ministry of Earth Sciences from **2021 to 26** at an overall cost of **Rs. 4,797 crore**.

#### Significance of the Scheme:

- The overarching scheme of PRITHVI will **holistically address** all the **five components** of the earth system to improve the **understanding** of the Earth System Sciences and to provide **reliable services** for the country.
  - Earth System Sciences deal with all the five components of the earth system: **atmosphere, hydrosphere, geosphere, cryosphere, and biosphere** and their complex interactions.
- The overarching scheme of Prithvi Vigyan will enable **the development** of integrated multi-disciplinary earth science **research** and **innovative programs** across different MoES institutes.
- These integrated **R&D efforts** will help address the grand challenges of **weather and climate, ocean, cryosphere, seismological science, and services** and explore the living and non-living resources for their sustainable harnessing.

#### Ministry of Earth Sciences (MoES):

- It is responsible for **translating science into services** for society, providing services in **weather, climate, ocean and coastal state, hydrology, seismology, and natural hazards**.
- It also explores and harnesses marine resources sustainably and explores the **Arctic, Antarctic, and Himalayan poles**.
- MoES offers **weather forecasts, warnings** for natural disasters, **tsunami alerts, and earthquake monitoring**.
- Agencies and state governments effectively use these services to save lives and **minimize property damage** due to natural disasters.
- Ten Institutes of MoES carry out the research & development and operational (services) activities of MoES -
  - India Meteorological Department (**IMD**)

- National Centre for Medium-Range Weather Forecasting (**NCMRWF**)
- Centre for Marine Living Resources and Ecology (**CMLRE**)
- National Centre for Coastal Research (**NCCR**)
- National Centre for Seismology (**NCS**)
- National Institute of Ocean Technology (**NIOT**)
- Indian National Centre for Ocean Information Service (**INCOIS**), Hyderabad,
- National Centre for Polar and Ocean Research (**NCPOR**), Goa
- Indian Institute of Tropical Meteorology (**IITM**), Pune
- National Centre for Earth Science Studies (**NCESS**).

### SAMARTH Curated Programs

#### News Excerpt:

Six SAMARTH Curated Training Programs have been introduced on the iGOT Karmayogi Platform under the **Ministry of Personnel, Public Grievances & Pensions** for **State Government officials** by Karmayogi Bharat and **NITI Aayog**.

#### About the news:

**Objective:** These programs aim to elevate the skills and competencies of government officials, ensuring they are well-equipped to meet the evolving needs of governance.

#### Details of the programs are as follows:

- **SAMARTH Blocks:** Tailored for citizen-facing officials and local administrators, SAMARTH Blocks, having 14 courses, focuses on **building foundational skills crucial for effective local governance**.



- **SAMARTH Zila:** Aimed at district-level officials, SAMARTH Zila, comprising 14 courses, is designed to equip learners with the knowledge and tools **required to address district-level challenges** and drive effective service delivery.

- **SAMARTH Raja:** Targeting state-level officials, the 14 courses of SAMARTH Raja seek to equip learners with **the advanced skills** required for steering governance at the state level.
- **SAMARTH Raja Sachiva:** Tailored for senior officials and state secretaries, this program consisting of 14 courses, focuses on **empowering learners** with the expertise needed to navigate complex policy landscapes and drive transformative change.
- **SAMARTH Policy:** The 5 courses of SAMARTH Policy delve into the intricacies of **policy formulation, policy writing, insights, data analysis, and evaluation.**
- **SAMARTH Procurement:** Catering to officials involved in procurement processes, SAMARTH Procurement, having 9 courses, provides specialized training in procurement guidelines, rules, strategies, and considerations.

## Project PRAYAS

### News Excerpt:

**Project PRAYAS (Promoting Regular & Assisted Migration for Youth and Skilled Professionals)** was launched in New Delhi on December 21, 2023, to assist the migration.

### About PRAYAS:

- The project is a joint collaboration between the **IOM India and Indian Council of World Affairs (ICWA).**
- Project PRAYAS aligns with Government of India's priorities for promoting safe and orderly migration and with **Goal 10.7 of the 2030 Agenda for Sustainable Development Goals (SDGs)** to facilitate orderly, safe, regular, and responsible migration and mobility of people.
- The project also adheres to the **Global Compact for Safe, Orderly and Regular Migration (GCM)** objectives and the **Migration Governance Framework (MiGOF).**

### The project aims to achieve this goal through several means:

- **Policy Recommendations:** Providing policy recommendations to the MEA and state governments to improve coordination and governance related to international migration practices.
- **Strengthening Coordination:** Enhancing coordination between state and central governments concerning international migration practices to ensure better management and regulation.
- **Understanding Migration Trends:** Undertaking studies to capture key migration trends, understand the needs and aspirations of migrants, and analyze international migration and mobility initiatives taken by the central and state governments.

- **Awareness and Initiatives:** Launching initiatives to increase awareness among aspiring migrants about safe, orderly, and regular migration processes.
  - This includes disseminating information and Education about the procedures and opportunities available for safe migration.
- **Sharing Best Practices:** Encouraging the sharing of good practices between different states and facilitating engagement between state governments and the MEA on matters related to the international migration cycle.

### International Organisation for Migration (IOM):

- The International Organization for Migration (IOM) is part of the United Nations System as the leading inter-governmental organization promoting since 1951 humane and orderly migration for the benefit of all, with 175 member states and a presence in 171 countries.
  - **Headquarters: Geneva, Switzerland.**
- ### IOM Definition of "Migrant"
- An umbrella term, not defined under international law, reflects the common lay understanding of a person who moves away from his or her usual residence, whether within a country or across an international border, temporarily or permanently, and for various reasons.

## MISCELLANEOUS

### 150 years of the India Meteorological Department

#### News Excerpt:

The India Meteorological Department (IMD) recently celebrated its **150th year of its establishment** and service to the nation.

#### About India Meteorological Department (IMD):

- It was **established in 1875.**
- It comes under the **Ministry of Earth Sciences.**
- It is the **National Meteorological Service of the country** and the principal government agency in all matters relating to meteorology and allied subjects.
- **Functions:**
  - Take **meteorological observations** and **provide current and forecast meteorological information for optimum operation of weather-sensitive activities.**
  - **Warn against severe weather phenomena like tropical cyclones, norwesters (local rainfall or thunderstorm), duststorms, heavy rains and snow, cold and heat waves,** etc.
  - **Provide meteorological statistics** required for agriculture, water resource management, industries, oil exploration and other nation-building activities.

### Achievements of IMD:

- The IMD has developed the **Weather Analysis and Forecast Enabling System (WAFES)**, an in-house Web-GIS-based Decision Support System inspired by the **Pancha Mahabhuta** (Water, Air, Fire, Earth, and Sky).
  - WAFES serves as a visualization platform for meteorological observations and prediction models.
  - It assists decision-making for severe weather phenomena and their socio-economic impact across various sectors such as Urban, Power, Hydrology, Health, Energy, Agriculture, Transport, and Tourism.
- For farmers, the **Panchayat Mausam Seva Portal**, developed jointly by **IMD, Ministry of Earth Sciences, Ministry of Panchayati Raj, and Green Alert Mausam Sewa**, provides weather forecasts in multiple languages to every panchayat head and secretary.
  - This initiative aims to empower farmers with weather alerts, warnings, and medium-range forecasts, aiding in agricultural planning and reducing input costs and crop losses.
- IMD's Mobile App, **MAUSAM**, offers various weather-related services in 12 Indian languages, providing current weather updates, hourly and 7-day forecasts, rainfall, humidity, alerts, advisories, and more. The app also introduces "**mausamgram**," allowing users to view observations, forecasts, and warnings for their location through maps or search functions.
- IMD introduced **the National Framework of Climate Services (NFCS)** to address climate services.
  - This framework involves preparing climatology data for meteorological parameters, digitizing observational data since 1901, and providing climate forecasts based on a dynamic multi-model ensemble system.
  - The visualization tool allows the public to observe climate parameters, extremes, hazards, and vulnerability maps for severe weather events.
- IMD has played a pivotal role in **increasing farmers' income through appropriate daily weather forecasts, hazards, and crop weather advisories**.
  - Through accurate forecasts, a BPL family farmer with a landholding of less than 2 acres in a rainfed area gains Rs 12,500 using weather information, and the country gains 13,300 crores towards GDP per year.
- To support the **Gati Shakti and Udaan Scheme**, IMD has **contributed significantly by ensuring safe aviation through Aviation Weather monitoring and forecasting** for all 117 Airports.
- **IMD earned appreciation from WMO (World Meteorological Organization)**, the United Nations, and the United Nations High Commissioner for Refugees (**UNHCR**) for **Early Warning Services** provided by IMD during **Super Cyclone Amphan in 2020 and Cyclone MOCHA in 2023**.

### Mumbai Trans Harbour Link

#### News Excerpt:

The Mumbai Trans Harbour Link (MTHL) is a **22-km-long** bridge connecting Sewri in Mumbai City to Chirle in Raigad district on the mainland.

#### Background developments:

- The concept of a bay crossing linking Mumbai to the mainland was initially proposed **in 1963**. The plan was revived in the late 90s, and the **first tenders were floated in 2006**, construction work commenced in early 2018.
- The total expenditure on the project amounted to Rs 21,200 crore, with Rs **15,100 crore being a loan from JICA**.

#### About the new sea link project:

- It is officially called **Atal Setu Nhava Sheva Sea Link**.
- The Mumbai Trans Harbour Link (MTHL) is a **six-lane, twin-carriageway bridge** spanning **22 kilometers** over **Thane Creek in the Arabian Sea**.






- It connects Sewri in the **island city of Mumbai to Chirle** in Raigad district on the mainland.
- The **project encompasses a 16.5 km sea link** and on-land viaducts at both ends with a **combined length of 5.5 km**.
- **Objective:** It is designed to enhance connectivity in the Mumbai Metropolitan Region, which includes Mumbai, Thane, Palghar, and Raigad districts; the **MTHL aims to boost the economic development of the region**.

#### How MTHL will help:

- The Mumbai Trans Harbour Link (MTHL) is expected to reduce travel time between Sewri and Chirle from **61 minutes to less than 16 minutes**, with an estimated 40,000 vehicles daily in 2024.
- It aims to enhance economic integration between Navi Mumbai and Mumbai, extending benefits to Panvel, Alibaug, Pune, and Goa.
- **Upcoming Navi Mumbai airport is 14 km from Chirle**, so MTHL will ease the approach from South Mumbai.

## SPECIES IN NEWS

Species	Details
<p><b>Black-Necked Grebe (<i>Podiceps nigricollis</i>)</b>  <b>News Excerpt:</b> Black-necked Grebe sighted at Hokersar wetland, in Jammu and Kashmir for the first time, adding to its expanding range.  <b>Conservation status IUCN:</b> Least Concern</p> 	<ul style="list-style-type: none"> <li>• Grebes are diving water-birds, <b>feeding on small fish and aquatic invertebrates</b>. It has beautiful <b>golden tufts of feathers on its face</b>, contrasting with its black head and neck.</li> <li>• It is a <b>small gregarious species</b> having a wide distribution from <b>Europe through Asia, wintering in the southwestern Palearctic, east Asia, and east Africa</b>.</li> <li>• It breeds in <b>southern Africa, southwest Canada, western USA and central Mexico</b>.</li> <li>• In India, its breeding has been reported from the Union Territory of <b>Ladakh</b>. During winters, the species migrates to the western <b>Gangetic Plains, Gujarat, and central Nepal</b>. Occasionally, it strays eastward to the <b>eastern Assam Valley and Bangladesh, and southward to coastal Orissa and Pune, Maharashtra</b>.</li> </ul>
<p><b>Snow Leopard (<i>Panthera uncia</i>)</b>  <b>News Excerpt:</b> Snow Leopard, the enigmatic big cat of High Asia, has now become the <b>National Symbol of Kyrgyzstan</b>.  <b>IUCN Status:</b> Vulnerable.  <b>Schedule I: Wildlife (Protection) Act, 1972</b></p> 	<ul style="list-style-type: none"> <li>• <b>Snow Leopard</b> is the State animal of <b>Ladakh and Himachal Pradesh</b>.</li> <li>• Because of their incredible natural camouflage, <b>snow leopards</b> are often referred to as the <b>"ghost of the mountains."</b></li> <li>• <b>Habitat:</b> It extends across the mountainous regions of 12 Asian countries: <b>Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyz Republic, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Uzbekistan</b>.</li> <li>• <b>China</b> has the world's largest snow leopard population.</li> <li>• It is not only a symbol of natural wealth and cultural prosperity, but also an <b>indicator of the stability and health of the mountain ecosystem</b>.</li> </ul> <p><b>Global Initiatives</b></p> <ul style="list-style-type: none"> <li>• <b>Bishkek Declaration</b> on Snow Leopard Protection being unanimously adopted at the <b>World Snow Leopard Conservation Forum in 2013</b>.</li> <li>• The <b>Global Snow Leopard and Ecosystem Protection Programme (GSLEP)</b> was initiated with the support of representatives from <b>12 snow leopard range countries (which includes India)</b> and the international environmental community.</li> </ul>
<p><b>Lantana camara</b>  <b>News Excerpt:</b> A decade-long initiative in Madhya Pradesh to reclaim land overrun by <b>lantana</b> helps residents restart agriculture and restore native biodiversity.</p> 	<ul style="list-style-type: none"> <li>• <b>Lantana camara</b> is a <b>low erect or sub scandent, vigorous shrub</b>.</li> <li>• It grows to <b>1.2-2.4 metres</b> (or even more); its <b>root system</b> is very <b>strong</b>, and it gives out a <b>new flush of shoots</b> even after <b>repeated cuttings</b>.</li> <li>• Lantana is <b>not native to India</b>. <ul style="list-style-type: none"> <li>○ It was <b>introduced</b> in the country as an <b>ornamental plant</b> by the British in the 1800s and has since spread over 574,186 sq km, <b>covering 50%</b> of the country's <b>"natural areas"</b>, according to an <b>October 2023 study</b> in the <b>Journal of Applied Ecology</b>.</li> </ul> </li> </ul> <p><b>Concerns posed by Lantana camara:</b></p> <ul style="list-style-type: none"> <li>• The plants can grow individually in <b>clumps</b> or <b>dense thickets</b>, crowding out more desirable species.</li> <li>• In disturbed native forests, it can become the dominant understorey species, <b>disrupting succession</b> and <b>decreasing biodiversity</b> as they can completely stall rainforest regeneration for decades.</li> <li>• Its <b>allelopathic</b> [chemicals released to discourage the growth of native plants] <b>qualities</b> can reduce the vigour of nearby plant species and reduce productivity in orchards.</li> </ul>

### Eurasian Otter (*Lutra lutra*)

**News Excerpt:** A team of researchers have spotted the presence of **Eurasian Otter (*Lutra lutra*) in the state at Chinnar Wildlife Sanctuary in Idukki** for the first time.

**IUCN Status:** Near Threatened

**CITES:** Appendix I



- The Eurasian otter has one of the **widest distributions** of all palearctic mammals, from **Ireland to China and down to Southeast Asia**. In India, it occurs in northern, northeast and southern India. Formerly widely distributed in Japan, it is now believed to be extinct there.
- Otters has a **varied diet** which includes fish, crustaceans, amphibians and sometimes reptiles, birds, eggs, insects and worms.
- With this, there are three species of otters found in Kerala, including **Smooth-coated Otter and Small-clawed Otter**.
- It is usually **nocturnal** and can be **found in many freshwater environments**.
- It is **solitary**, but sometimes it is seen in family groups, composed of a mother and her offspring.
- **Threats:** pollution, poaching, habitat loss, accidental trapping, road kill.

### Himalayan Wolf

**News Excerpt:** The **Himalayan Wolf (*Canis lupus chanco*)**, a prominent lupine predator found across the Himalayas has been assessed for the first time in the **International Union for Conservation of Nature (IUCN)'s Red List**.

**IUCN Red List:** Vulnerable



- They are found in **high altitudinal regions in the Himalayas and the Tibetan plateau- India, Nepal and China**.
- It is **larger in size** than the Indian and European wolves.
- They have a thick fur with brown colouration on the back and tail with paler yellows on the face, limbs and underside.
- They have prey competition with the snow leopard.
- The IUCN Red List Assessment has also flagged '**continuing decline in area, extent and/or quality of habitat**' of Himalayan wolves **due to depredation conflict, hybridization with dogs, illegal hunting for trade** of its fur and body parts.

#### Himalayan Wolf in India:

- India has **227-378 mature individuals** in its section of the Himalayas.
  - The **Red List** assessment noted that it includes **only Ladakh and the Spiti Valley** of Himachal Pradesh.
  - Small area of wolf habitat is also available in Uttarakhand and Sikkim.

### Gentoo penguin (*Pygoscelis papua*)

**News Excerpt:** Recently, an extremely rare all-white penguin spotted in **Chilean Antarctica**.

**IUCN status:** Least concern



- The **unique white gentoo penguin** spotted at the **Gabrial Gonzalez Videla Base** is a **female of the Gentoo species**, which typically has black feathers with a few whites.
- **Location:** Antarctica and Sub-Antarctic Islands
- **Diet:** Crustaceans (krill), fish, squid
- **Appearance:** Black back and head, white belly, white stripe running eye-to-eye across the top of the head, reddish bill.
- They are the fastest-swimming penguins in the world, reaching speeds of up to 36 kph (22.4 mph).
- **The penguin has an unusual white plumage caused by leucistic pigmentation.**
- It is a genetic variation that can occur in some individuals, which affects the production of colouration in the skin, feather or hair.
- It **differs from albinism** as the penguin's eyes and beak are of **usual colour**.
- **The decline of the population on sub-Antarctic islands has been the primary reason for this categorization.**

### Saltwater crocodiles (*Crocodylus porosus*)

**News Excerpt:** According to an annual census conducted by forest officials, the **Bhitarkanika region of Odisha** is home to 1,811 saltwater crocodiles.

**IUCN status:** Least Concern

- The Earth's **largest living reptile**, saltwater crocodiles have the greatest bite pressure of any animal.
- Males are much larger than females, weighing even upto 1,000 kilograms.
- **Habitat:** They inhabit coastal brackish mangrove swamps and river deltas.

[www.kskindia.com](http://www.kskindia.com)

**CITES:** Appendix I  
**Wildlife Protection Act, 1972:** Schedule I



- **Threats:** Illegal hunting and habitat loss and degradation.

**Current status of saltwater crocodiles:**

- The population of saltwater or estuarine crocodiles in and around **Odisha's Bhitarkanika National Park has marginally increased in 2024.**
- **Bhitarkanika is the second-largest mangrove forest in India**, after the Sundarbans.
  - Both areas are among the three strongholds of saltwater crocodiles — in India, the third being the **Andaman and Nicobar Islands.**

### White-bellied Sea Eagle

**News Excerpt:** In an unusual sighting, the **white-bellied sea eagle (Ichthyophaga leucogaster)**, an enormous **raptor** common to coastal habitats, was **spotted in Mukkombu, Tiruchi (Tamilnadu).**

**IUCN status:** Least Concern



- White-bellied-sea eagles are **large birds of prey**. They are graceful in flight and **spend their time soaring over the surface of the sea**, or perching on rocks or branches beside the water.
- **Diet:** These birds **hunt fish, tortoises, sea-snakes, waterfowl, reptiles, nestling birds, rabbits, and also eat carrion.**
- **Habitat:**
  - The raptor is **found in India, Sri Lanka, the Andaman Islands, southern China, the Philippines, New Guinea, Australia, and Tasmania**, among other countries.
- **Threats:**
  - The **loss of nesting sites due to development** is a major threat to the White-bellied sea eagles.
  - **Deterioration of inland water sources and over-fishing.**
  - **Competition for food and nesting sites** with Wedge-tailed Eagles (*Aquila audax*).
  - The **depletion of tall trees near the shoreline.**
    - **Ficus and casuarina trees** facing the sea are said to be the preferred nesting sites of these birds.

### Grey Francolin (*Ortyornis pondicerianus*)



**News Excerpt:** Grey Francolin was reported inside the Sanjay Gandhi National Park (SGNP).

**IUCN Status:** Least Concern

- These birds are dispersed from the south of the **Himalayan foothills, east to Bengal, and west to the Indus Valley.** It can also be found in **Sri Lanka's northwest.**
- Typically, **small groups** of these birds are sighted. Not all of the flock rises at once in response to disturbance.
- In low, prickly trees, they typically roost in groups, they stay on the **ground during the day** and roosts in trees such as **Shisham and Babul.**
- They can only **fly short distances** and are weak flyers, disappearing into the undergrowth.
- They consume **grains, seeds, and insects, especially** termites and beetles as food.

### Octopus:

**News Excerpt:**

A team of scientists explored the depths of the seafloor off the **coast of Costa Rica** and discovered 4 new species of **Deep-Sea Octopus.**



- Octopus, in general, is any **eight-armed cephalopod (octopod) mollusk** of the order Octopoda.
- They live in all the world's oceans but are especially **abundant in warm, tropical waters.**
  - They are also **limited by circular sea currents, or gyres**, in some of their modern habitats.
- The true octopuses are members of the genus Octopus, a large group of **widely distributed shallow-water cephalopods.**
- The four new species haven't yet been formally described, but one has been named the **Dorado octopus**, after a rock known as El Dorado Hill where it was found.

## CONTEMPORARY ETHICS CASE STUDY

**Q.** In the picturesque town of Nainital, nestled amidst lush forests and pristine lakes, a manufacturing company named 'Green Heaven Industries' had set up its operations a few years ago. They prided themselves on creating innovative machines that revolutionized how people earned their livelihood. However, the locals residing in the downstream areas soon realized their animals had started dying after drinking from the local river stream. They soon realized that the untreated effluents from the industry were causing this incident.

The locals complained to the local authority, to which they were ignored, and no action was taken. Enraged locals then storm the 'Green Heaven Industries', vandalize the factory, and also threaten the local manager. Realizing that the situation was going out of control, government officials approached you.

As an enforcement officer responsible for upholding environmental regulations, you have found yourself at a crossroads. On one hand, you understood the significance of economic development and the importance of job creation for the community. On the other hand, you have witnessed first-hand the irreversible degradation caused by Green Heaven Industries' manufacturing processes. You conducted the inspection and concluded that the factory needs to be shut down due to a grave violation of norms. The workers have petitioned you that if the factory is closed, they will die of hunger since there is no other factory in the region where they can be accommodated.

- What are the ethical dilemmas associated with the case?
- What are the options available to you? Do a critical analysis of the options and state the reason for choosing the best option.
- Can development and environment conservation go hand in hand? If yes, state a regulatory framework for it.



SCAN THIS QR FOR  
MODEL ANSWER

(Answer in 250 words) 20 marks

## PHILOSOPHY OF THE MONTH

### REWIND 2023: What shaped the year gone by?

**"WE ARE ALL MIGRANTS THROUGH TIME." – MOHSIN HAMID.**

As we welcome 2024 into our lives, we must not forget how **2023 turned out to be a labyrinth for all of us, with lessons along the way.**

**"India is on the moon"**, and with these words, **Chandrayaan-3** helped the country achieve the

significant landmark of being the **first nation to reach the lunar south pole**. India also launched its first solar observation mission, **Aditya L1**, to observe the **solar corona**, thus marking a giant leap for our space missions.

On the diplomacy front, India hosted the **G20 summit in New Delhi** where we witnessed the **Delhi Declaration** and the **African Union** getting a permanent membership of the forum.

On the political front, during the special session of Parliament, the **106th Constitutional Amendment Act, 2023**, popularly known as **"The Women Reservation Act, 2023,"** was passed.

2023 also witnessed other events, such as the **withdrawal of the Rs. 2000 note, the unveiling of the new Parliament building, and India surpassing China to become the world's most populous country.**

But the special mention goes to the **Oscar-winning** best song **"Natu Natu"**, which made the world dance to Indian tunes and



a quest to balance change and continuity as the royal year saw **the Coronation of King Charles III.**

As 1.4 billion people across the country suffered heartbreak **with India falling short of winning the ODI World Cup** after a terrific campaign, the successful **rescue operation to drill out 41 workers from the Silkyara Tunnel** gave a much-needed ray of hope.

The year also witnessed a huge loss of life in **devastating earthquakes in Turkey and Nepal, amidst heightened geopolitical situations in the two ongoing conflicts** and the loss of life onboard the **Titan submersible** in the North Atlantic Ocean.

As we **collectively rejoiced the good and mourned the bad**, we left the biases behind and grew closer to each other.

**So, what lessons can we take away?**

Firstly, the Japanese proverb **"Nana korobi, ya oki"**, meaning **"Fall down seven times, stand up eight."** puts it across beautifully. See your mistakes as a learning experience and try again. Secondly, **some things are not meant to be**; we must learn what good came from them, cherish the memories, and move on.

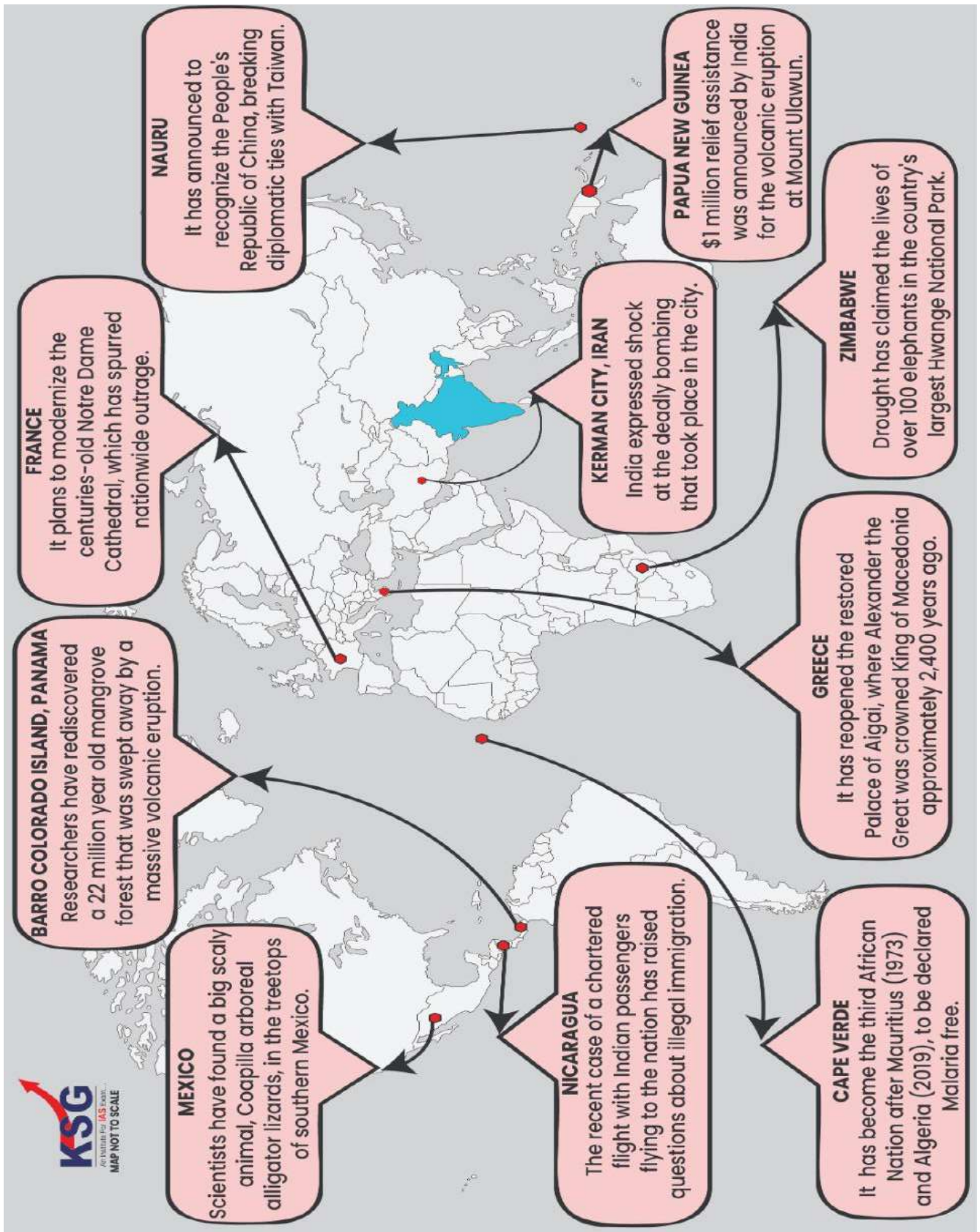
**After all, a lot can happen in a year!**





MAP CONNECT

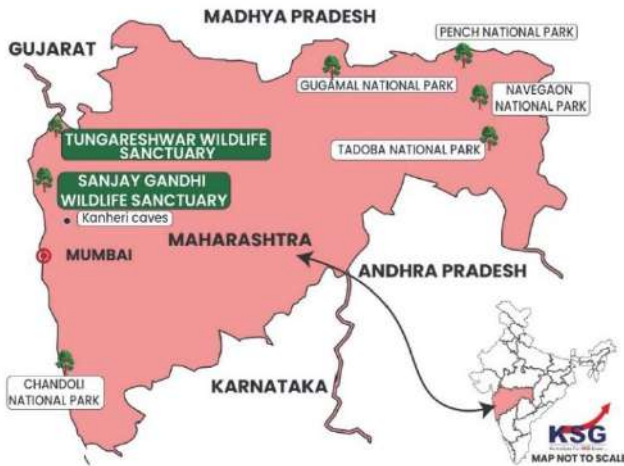
WORLD



## PROTECTED AREAS IN NEWS

### News Excerpt:

The **Bombay Natural History Society (BNHS)**, organized a Bird Count at Sanjay Gandhi National Park (SGNP) and reported a ground-dwelling bird **Grey Francolin**.



### Sanjay Gandhi National Park:

- Established in **1969**, near the suburban region of Mumbai the park is named after the late Sanjay Gandhi and was formerly known as the Borivali National Park,
- The park houses the famous **Kanheri Caves** which is home to **Buddhist monastic caves**, making it one of the largest cave complexes in India.
- Fauna:** The park's lush greenery serves as a refuge for a diverse range of wildlife including Leopard, spotted deer, barking deer, and macaques and over 170 species of birds, including the threatened Malabar pied hornbill.

### Tungareshwar Wildlife Sanctuary:

- It is located on the periphery of Mumbai, in **Vasai**, and spread over 85 sq km.
- It forms a **corridor between Sanjay Gandhi National Park and Tansa Wildlife Sanctuary**.
- There are three different types of **forests** – Dry Deciduous, Moist Deciduous and Semi Evergreen.
- The region is rich in **biodiversity**: the Leopard, Wild Boar, Barking Deer, Langur, Bonnet and Rhesus Macaque, and Black-naped Hare, as well as a multitude of birds, including the Crested Serpent-eagle, Jungle Owlet, White-eyed Buzzard, Oriental Honey-buzzard, Emerald Dove and Heart-spotted Woodpecker can be found here.

### News Excerpt:

After **Neora Valley National Park**, a fresh image of the **Royal Bengal Tiger** was recently captured in **Buxa Tiger Reserve (BTR)**.



### Buxa Tiger Reserve (BTR):

- It is a **760 sq km** forest located inside the Buxa National Park in Jalpaiguri District of West Bengal, in the **Buxa Hills** of the southern hilly area of **Bhutan**.
- Animals found in the park include the **tiger, civet, elephant, gaur** (Indian bison), **Indian boar** and **red jungle fowl**.
- BTR is the largest forest in the Doorga region. It is bounded by **Bhutan** at the north, the **Jayanti River** at the east and the **Checko River** at the west.
- The BTR has **corridor connectivity** across the border with the forests of Bhutan in the north, on the east, it has linkages with the **Kochugaon forests** and **Manas Tiger Reserve**, and on the west, it has the **Jaldapara National Park**.

### Neora Valley National Park (NVNP):

- It covers a total area of **88 km<sup>2</sup>** and is located in the **Eastern Himalayas**, a global 'biodiversity hotspot'.
- It is contiguous with **Sikkim** and **Bhutan** at its northern and north-eastern boundaries, respectively and links the **Pangolakha Wildlife Sanctuary** in Sikkim and the **Toora Strict Reserve** of Bhutan.
  - It is also an integral part of the **Kanchenjunga Landscape**.
- The southern boundaries of the park adjoin the forests of the **Jalpaiguri district**, which are connected to the **Chapramari Wildlife Sanctuary** and the **Gorumara National Park**.
- Fauna:** **Crimson-breasted woodpecker, Darjeeling woodpecker, Hodgson's hawk cuckoo, mountain hawk-eagle, black-faced warbler, fire-tailed sunbird, king cobra, green pit viper, civets, sloth bear, wild boar, leopard cat, barking deer** and especially **red panda**.



- **Flora:** The forest consists of (i) Subtropical Mixed Broadleaf Forest, (ii) Lower Temperate Evergreen Forest, (iii) Upper Temperate Mixed Broadleaf Forest and (iv) Rhododendron Forest.
- It consists of the characteristics of all **three sub-regions**, namely the **Himalayan Montane System**, the **Indian Peninsular Sub-region** and the **Malayan sub-region**.

**News Excerpt:**

**Black-necked Grebe** sighted at Hokersar wetland for the first time.

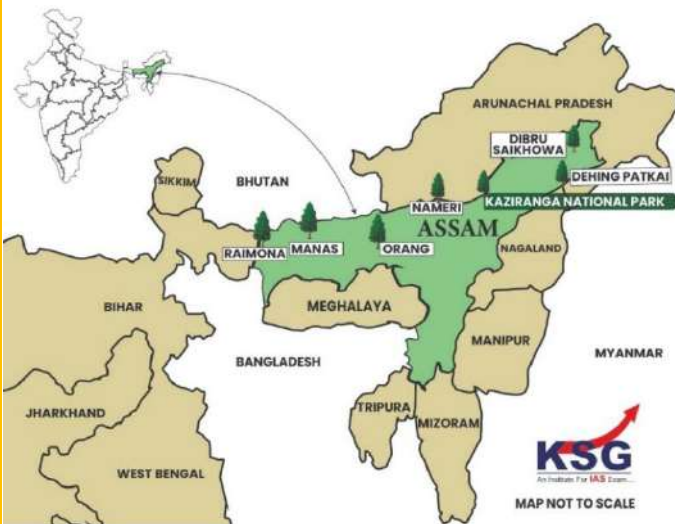


**About Hokersar Wetland:**

- Hokersar is a **natural perennial protected wetland reserve** and a **Ramsar site**, also a winter wonderland and bird paradise.
- Some 4 lakh birds visited here this winter season from October to April.
- It is located in the northwest Himalayan biogeographic province of Kashmir, in Zainakote, **10 km northwest of Srinagar city**, back of the snow-draped Pir Panjal and contiguous to the Jhelum Basin.
- Birds like **mallards, greylag geese, pochards, common tails, shovelers and pintail** annually visit the region in winter.
- It is an important source of food, spawning ground and Nursery for fish, besides offering feeding and breeding grounds to a variety of water birds.

**News Excerpt:**

The number of birds counted during the **5th Bird Census** conducted in and around Kaziranga was **27% more** than in 2022.



**About the 5th bird Census:**

- There are **nearly 200 wetlands** in and around Kaziranga, and the bird census was **conducted in 115** of them, falling under **three divisions** -
  - **The Eastern Assam Wildlife Division**
    - It comprised mostly of the Kaziranga National Park area, recorded 37,606 birds.
  - **The Nagaon Wildlife Division**
  - **The Biswanath Wildlife Division.**
- Some other species reported in the new census include -
  - **Baer's Pochard** (IUCN status - **Critically Endangered (C.E.)**).
  - **Bengal Florican** (IUCN status - **(C.E.)**)
  - **Swamp Francolin** (IUCN status - **Vulnerable**)
- Odisha's **Chilika Lake** tops the list with over 10.74 lakh birds, followed by **Kaziranga**, Rajasthan's **Bharatpur** (25,000), **Najafgarh jheel** in Delhi (10,239) and Gujarat's **Nalsarovar** (7,099).
  - In terms of **size and number**, Kaziranga is second to Chilika. **Species-wise**, however, **Bharatpur** tops the list.

**Kaziranga National Park and Tiger Reserve (KNPTR):**

- It is located in **Golaghat, Nagaon and Sonitpur districts of Assam**.
  - It is the oldest park in Assam and covers an area of 430 sq km along the river **Brahmaputra** in the **north** and the **Karbi Anglong hills** in the **south**.
  - National **Highway 37** passes through the park area and tea estates, hemmed by table-top tea bushes.
  - It is inhabited by the **world's largest population of one-horned rhinoceroses** (2,613 according to 2023 Census).
    - It is also known for the "**BIG FIVE**" mammals: **one-horned rhinos, tigers, elephants, Asiatic wild buffalos, and eastern swamp deer**.
  - It was declared a **National Park in 1974**.
    - In **1985, UNESCO** declared it a **World Heritage Site**.
- Over time, the tiger population also increased in Kaziranga, and that's the reason Kaziranga was declared a **Tiger Reserve** in **2006**.

**News Excerpt:**

The Central Zoo Authority (CZA) has allowed the Odisha government to carry out the planned transfer of animals from **Dubai Safari Park (DSP)** to **Nandankanan Zoological Park (NZP)**, Bhubaneswar.

**Nandankanan Zoological Park:**

- Nandankanan Zoological Park is a premier large zoo in India. It is 15 km from Odisha's capital, Bhubaneswar.
- Unlike other zoos in the country, Nandankanan is built right **inside the forest** and set in a completely **natural environment**.

**Bhitarkanika National Park:**

- Spread over a vast area of 672 km, Bhitarkanika Wildlife Sanctuary in Orissa is the 2nd largest Mangrove ecosystem in India.
- It is the breeding place for the endangered **saltwater crocodiles** which are the prime attractions of the sanctuary.
- The **Gahirmatha Beach** which forms the boundary of the sanctuary in the east is the largest colony of the **Olive Ridley Sea Turtles**.
- The sanctuary lies in the estuarial region of **Brahmani-Baitarani with the Bay of Bengal** lying in the East.
- The sanctuary has 215 species of birds which the most important being the eight varieties of kingfisher and the migratory birds from Europe and Central Asia.

**Fauna:** venomous Cobras and Indian Pythons, the endangered water monitor lizards, Chitals, Jungle cats, Wild Pigs, Otter, Rhesus Monkeys, Sambar, Spotted Deer, Wild Boar and the Fishing Cat.

**News Excerpt:**

A team of researchers from Kerala has claimed to have spotted the presence of **Eurasian Otter (Lutra lutra)** in the state at **Chinnar Wildlife Sanctuary in Idukki** for the first time.

**About Chinnar Wildlife Sanctuary:**

- It is an exclusive thorny forest pervaded with **xerophyte species**.
- The sanctuary falls into the rain-shadow area of the Western Ghats and is home to the exotic species of Giant **Grizzled Squirrel** of India whose number is less than 200 in the entire forest region.
- **Fauna:** Gaur, spotted deer, elephants, hanuman langur, sambar and peacocks
- **Flora:** Sandalwood forest, a mix of dense vegetation of deciduous forest.

## THEMATIC ESSAYS

1. To live is to suffer; to survive is to find some meaning in the suffering.
2. Our knowledge can only be finite, while our ignorance must necessarily be infinite.
3. Democracy is not a one-day affair but a daily affair.



SCAN THIS QR FOR MODEL CONTENT

## MAINS PRACTICE QUESTION

1. A well-designed education system plays a significant role in evaluating the knowledge, skills, and competencies that students acquire during their education. Discuss the issues involved with the Indian education system and also suggest some innovative measures to fulfil the goal of quality education.
2. India has made great strides in financial inclusion, but women still have low participation in the financial sector. What are the major challenges to financial inclusion for women in India? Analyze.
3. What do you understand by e-soil? By describing its significance, highlight how it can change agriculture in the future.
4. India has officially become a part of the Square Kilometer Array (SKA) project. Discuss the future scope of the project and the significance of India joining the SKA project.
5. The Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service, and Term of Office) Act, 2023 raises significant concerns about the independence and impartiality of the Election Commission of India. Critically Analyze.
6. The Witness Protection Scheme, 2018, is the first attempt at the national level to holistically provide for the protection of the witnesses, which will go a long way in eliminating secondary victimization. Elaborate.
7. A spate of attacks on cargo ships in the Red Sea raises concern over international trade. How does the Red Sea crisis have the potential to impact India's trade?
8. In light of the Israel-Palestine issue, discuss the relevance of the United Nations in the current world order following the non-resolution of this issue.
9. What do you understand by the global nuclear order? Highlight its importance in controlling the proliferation of nuclear technologies and weapons of mass destruction.
10. Recent incidents of piracy in the Indian Ocean have sparked fears of the return of Somali pirates to international waters amid troubling geopolitical uncertainty. What are the major reasons for the recent maritime threats, and how has India ensured its maritime security?
11. Critically analyze the role of the India Meteorological Department (IMD) in disaster preparedness and management in India. Suggest effective strategies for improvement.
12. Trace the distinct characteristics and development of the Kalinga style of temple architecture. Discuss the unique elements and materials used in Kalinga temples and their symbolic significance.
13. Discuss the origin, development, and significance of Chavittu Nadakam, a traditional dance-drama form of Kerala.
14. The importance of green hydrogen increases as the issue of climate change increases. In light of the above statement, discuss the challenges of hydrogen fuel and India's recently published guidelines to promote the procurement of green hydrogen.
15. Pulses are vital in developing sustainable food systems and are a critical factor in food and nutrition security in India, but there are a lot of challenges in making India self-sufficient in pulses. Analyze

## PT ORIENTED QUESTION

### 1. Consider the following statements with regarding to the India Meteorological Department (IMD):

1. It was established in 1875.
2. It comes under the Ministry of Environment, Forest and Climate Change (MoEFCC).
3. It provides meteorological statistics required for agriculture and water resource management.

How many of the statements given above are correct?

- (a) One only                      (b) Two only  
(c) All three                      (d) None

### 2. Consider the following statements regarding the Mumbai Trans-Harbour Link (MTHL):

1. It is a six-lane 22 kilometers over Thane Creek in the Arabian Sea.
2. It connects Sewri in the island city of Mumbai to Chirle in Raigad district on the mainland.
3. It is officially called Atal Setu Nhava Sheva Sea Link.

How many of the statements given above are correct?

- (a) One only                      (b) Two only  
(c) All three                      (d) None

### 3. Consider the following statements:

1. Project Devika is built on the lines of 'Namami Gange'.
2. The project Devika was launched by the Prime Minister in February 2019.
3. The project includes the construction of three sewage treatment plants.

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

- (a) One only                      (b) Two only  
(c) All three                      (d) None

### 4. Consider the following pairs:

- |                            |   |                   |
|----------------------------|---|-------------------|
| Product                    | - | State             |
| 1. Lanjira Saura Paintings | - | Odisha            |
| 2. Wancho Wooden Craft     | - | Arunachal Pradesh |
| 3. Tangail Saree of Bengal | - | West Bengal       |

How many of the above pairs are correctly matched?

- (a) Only one pair                      (b) Only two pairs  
(c) All three pairs                      (d) None of the pairs

### 5. Consider the following statements:

1. Vadnagar is a part of the heritage tourism circuit under the Swadesh Darshan project.
2. Vadnagar is mentioned in Puranas.
3. India's oldest living city is found in Vadnagar.

How many of the statements given above are correct?

- (a) Only 1 and 2  
(b) Only 2 and 3  
(c) Only 1 and 3  
(d) 1, 2 and 3

### 6. Consider the following statements:

1. Srimukhalingam temple was constructed in the 9th century CE by kings of the Eastern Ganga Dynasty, it contains exquisite sculptures from that period.
2. Srimukhalingam temple is built in the Kalinga architectural style.
3. Srimukhalingam temple is located by the Vamsadhara River and is dedicated to Lord Srimukha Lingeswara (a form of Shiva).

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

- (a) One only                      (b) Two only  
(c) All three                      (d) None

### 7. Consider the following statements regarding the Nallamalla hills:

1. It has a warm to hot climate throughout the year.
2. It gets most of its rainfall during the South West Monsoon.
3. The hills run in a nearly north-south alignment, parallel to the Coromandel Coast between the rivers Krishna and Pennar.

How many of the statements given above are correct?

- (a) One only                      (b) Two only  
(c) All three                      (d) None

### 8. Consider the following statements:

#### Statement-I

The Bureau of Indian Standards (BIS) is the National Standard Body of India established under the BIS Act 2016.

#### Statement-II

It was established for the harmonious development of the quality certification of goods.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I  
(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I  
(c) Statement-I is correct but statement-II is incorrect  
(d) Statement-I is incorrect but Statement-II is correct

### 9. Consider the following statements:

#### Statement-I

The Financial Stability and Development Council (FSDC) was set up in 2010 by the Government of India with the Finance Minister as the chairman.

#### Statement-II

The Financial Stability Report is published by the Reserve Bank of India.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

**10. Consider the following statements:**

**Statement-I**

The Tea Board set up under section 4 of the Tea Act 1953 was constituted on 1st April 1954.

**Statement-II**

It functions under the direction of the Central Government.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

**11. Consider the following statements:**

1. Slow growth
2. A high unemployment rate.
3. High inflation.

How many of the above is/are characterized by stagflation?

- (a) One only
- (b) Two only
- (c) All three
- (d) None

**12. Consider the following statements:**

**Statement-I**

Hydrogen fuel is a clean form of energy with electricity, heat and water being the products and by-products.

**Statement-II**

Hydrogen can be produced from a variety of domestic resources, such as natural gas, nuclear power, biomass, and renewable power like solar and wind.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

**13. Consider the following statements:**

1. Chilika Lake is a brackish water lake.
  2. It is the largest wintering ground for migratory birds in the Indian subcontinent.
  3. It has been designated as a Ramsar site since 2001.
- How many of the statements given above are correct?
- (a) Only 1 and 3
  - (b) Only 1 and 2
  - (c) Only 2 and 3
  - (d) 1, 2 and 3

**14. Consider the following statements:**

1. Coal accounts for 55 percent of the country's energy needs.
  2. The government permitted FDI up to 100 percent under the automatic route.
  3. Commercial primary energy consumption in India has grown in the last four decades.
- How many of the statements given above are correct?
- (a) One only
  - (b) Two only
  - (c) All three
  - (d) None

**15. Consider the following statements regarding the Corbett Tiger Reserve (CTR):**

1. It is located in the Nainital district of Uttarakhand.
  2. It was established in 1936.
  3. In 1986, the project Tiger was launched in Corbett National Park.
- How many of the statements given above are correct?
- (a) One only
  - (b) Two only
  - (c) All three
  - (d) None

**16. Consider the following statements:**

**Statement-I**

Antarctic Circumpolar Current (ACC) extends from the sea surface to the bottom of the ocean and encircles Antarctica.

**Statement-II**

They are found in the low latitudes of both hemispheres during the winter.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

**17. Consider the following statements:**

**Statement-I**

Nacreous clouds are one of the highest clouds in our atmosphere.

**Statement-II**

It is vital for Earth's health because it keeps Antarctica cool and frozen.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

**18. Consider the following statements:**

**Statement-I**

The Election Commission of India (ECI) introduced new rules for allocating symbols to Registered Unrecognized Political Parties (RUPPs).

**Statement-II**

RUPPs must furnish audited accounts of the last three financial years.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

**19. Consider the following statements regarding the Court of law:**

1. It can decide the validity of legislation.
2. It is presided over by an officer expert in the law.
3. It is strictly bound by all the rules of the Evidence Act.

How many of the statements given above are correct?

- (a) One only
- (b) Two only
- (c) All three
- (d) None

**20. Consider the following statements regarding the Pardoning powers:**

1. Commutation denotes the substitution of one form of punishment for a lighter form.
2. Remission implies reducing the period of a sentence without changing its character.
3. Reprieve implies a stay of the execution of a sentence (especially that of death) for a temporary period.

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

- (a) One only
- (b) Two only
- (c) All three
- (d) None

**21. Consider the following pairs:**

**Sanctuary/Reserve - Location (State)**

1. Chinnar Wildlife Sanctuary -Tamil Nadu
2. Tungreshwar Wildlife Sanctuary -Maharashtra
3. Buxa Tiger Reserve - West Bengal

How many of the above pairs are correctly matched?

- (a) Only one pair
- (b) Only two pairs
- (c) All three pairs
- (d) None of the pairs

**22. Consider the following statements:**

**Statement-I**

The term Global South appears to have been first used in 1969 by political activist Carl Oglesby.

**Statement-II**

The Global South term has evolved as a synonym for "developing countries" over the last 40 years.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

**23. Consider the following statements regarding the Kudankulam Nuclear Power Plant:**

1. It is the second largest nuclear power station in India.
2. It is being built by the Nuclear Power Corporation of India (NPCIL).
3. The Kudankulam nuclear plant uses imported Pressurised Water Reactor technology (PWR).

How many of the statements given above are correct?

- (a) One only
- (b) Two only
- (c) All three
- (d) None

**24. Consider the following statements:**

**Statement-I**

Operation Sadbhavana was officially launched by the Indian Navy in 1998.

**Statement-II**

It focuses on improving the core social indices of Education, Women & Youth Empowerment, and Health care.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I



- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I  
 (c) Statement-I is correct but statement-II is incorrect  
 (d) Statement-I is incorrect but Statement-II is correct

**25. Consider the following statements:**

- Chronic Lung Disease
- Hypertension or High Blood Pressure
- Reduced Oxygen Delivery to Tissues
- Cardiovascular Diseases

How many of the above are associated with High hemoglobin levels?

- (a) Only one                      (b) Only two  
 (c) Only three                    (d) All four

**26. Consider the following statements:**

- Exercise Zayed Talwar is a bilateral exercise between the Indian and UAE navies.
- Desert Eagle is a bilateral exercise between the Indian Air Force and the United Arab Emirates Air Force.
- Exercise Desert Cyclone is a bilateral exercise between the India and UAE joint Military Exercise.

How many of the statements given above are correct?

- (a) Only 1 and 2                  (b) Only 2 and 3  
 (c) Only 1 and 3                  (d) 1,2 and 3

**27. Consider the following statements regarding the Secure Army Mobile Bharat Version (SAMBHAV):**

- It is designed to provide end-to-end encryption for secure communication.
- It is described as a network-agnostic system.
- It likely features an indigenous operating system developed specifically for military use.

How many of the statements given above are correct?

- (a) One only                      (b) Two only  
 (c) All three                      (d) None

**28. Consider the following statements:**

- Dakshin Gangotri, India's first research station in Antarctica, was commissioned in 1983.
- Bharati is a permanent Antarctic research station commissioned by India.

- The Second Research Station Maitri is situated in the rocky mountainous region called Schirmacher Oasis.

How many of the statements given above are correct?

- (a) One only                      (b) Two only  
 (c) All three                      (d) None

**29. Consider the following statements:**

**Statement-I**

Vikram Sarabhai Space Centre (VSSC) is a pioneer in rocket research and launch vehicle projects of ISRO.

**Statement-II**

VSSC is the lead center of ISRO under the Department of Space (DOS).

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I  
 (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I  
 (c) Statement-I is correct but statement-II is incorrect  
 (d) Statement-I is incorrect but Statement-II is correct

**30. Consider the following statements:**

**Statement-I**

The Martian Moon exploration (MMX) mission concept is to study Phobos and Deimos, Mars' moons.

**Statement-II**

The mission's main scientific objective is to determine the origin of Mars' moons.

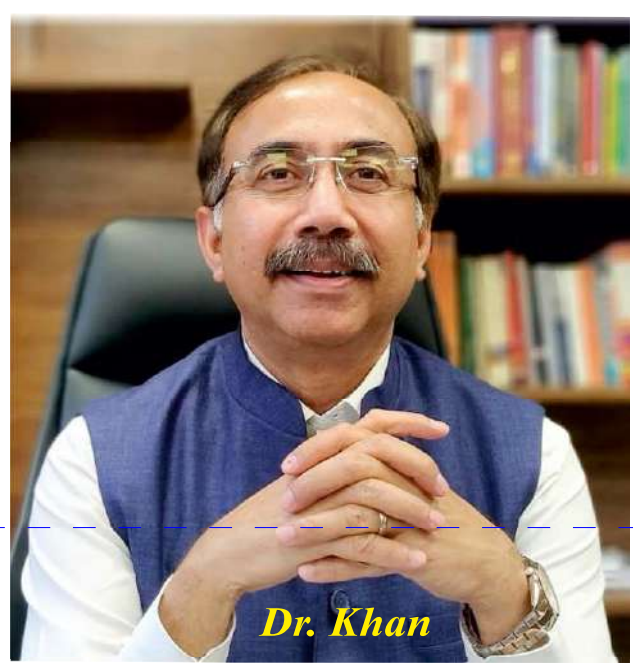
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 (c) Statement-I is correct but statement-II is incorrect  
 (d) Statement-I is incorrect but Statement-II is correct

**ANSWER KEY**

1 B	7 C	13 B	19 C	25 D
2 C	8 A	14 C	20 D	26 C
3 D	9 B	15 B	21 B	27 C
4 C	10 B	16 C	22 A	28 C
5 D	11 C	17 A	23 B	29 A
6 D	12 A	18 A	24 D	30 A

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