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

85 **TH EDITION**

OPERATION SINDOOR

Other topics

- Caste Census
- Digital Access is a Fundamental Right
- Pandemic Agreement
- India UK FTA
- India is 4th Largest Economy

A MONTHLY PERIODICAL FOR ASPIRANTS OF UPSC CSE

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We Dominate UPSC CSE 2024!

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Heartiest Congratulations to our
CHAMPIONS FROM WEST BENGAL & ODISHA

77 Selections in UPSC CSE 2024
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Urmi Sinha — **AIR 170**
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Abhijeet Mallick — **AIR 979**

1. POLITY & GOVERNANCE

1.1   WATER SHARING DISPUTE BETWEEN PUNJAB AND HARYANA

Context

- The decades-old dispute between Punjab and Haryana over the sharing of river water has intensified once again.

Background

- Before 1966, the undivided state of Punjab managed the Bhakra-Nangal project on the River Sutlej. Following the state's reorganisation into Punjab, Haryana, and Himachal Pradesh, the **Punjab Reorganisation Act of 1966established the Bhakra Management Board.**
- In 1976, its mandate expanded to include projects on the River Beas, and it was renamed the Bhakra Beas Management Board (BBMB).
- The **BBMB is an autonomous body, under the Union Ministry of Power** that manages the water and power resources from the Bhakra Nangal and Beas Projects. It plays the crucial role of distributing these resources among the partner states: Punjab, Haryana, Rajasthan, Himachal Pradesh, and Delhi.

Current Issue

- **Haryana requested additional water due to a drinking water crisis.** Punjab's Chief Minister rejected the demand and deferred it to the BBMB.
- A majority vote approved the water release, but Punjab voted against it.
- Punjab refused to open the additional floodgate at the Nangal dam, preventing the extra water from flowing to Haryana.
- The Punjab and Haryana High Court restrained Punjab from interfering with the BBMB's operations and directed it to comply with the Centre's decision.

Interstate Water Disputes in India

- The Constitution provides a layered framework for water governance, dividing powers between the Union and the States.
- **State's Power (Entry 17, State List):** The states have primary authority over water resources within their territory. This includes water supplies, irrigation, canals, drainage, embankments, water storage, and hydropower.

MAJOR INTER-STATE RIVER DISPUTES

- **Union's Power (Entry 56, Union List):** The Union Parliament has the power to make laws for the regulation and development of interstate rivers and river valleys if it declares that it is "expedient in the public interest" to do so.
- **Article 262: The Adjudication Mechanism:** This is the core constitutional provision for resolving water disputes. It empowers Parliament to:
  o Create laws to adjudicate any dispute regarding the use, distribution, or control of waters of any interstate river.
  o Exclude the jurisdiction of the Supreme Court and other courts over such disputes.
- Acting on the powers granted by Article 262, **Parliament enacted two key laws in 1956.**

- **The River Boards Act, 1956:** It empowers the central government to establish River Boards for the regulation and development of interstate rivers, in consultation with the concerned state governments. These boards are meant to advise on and coordinate development. However, this Act has largely remained defunct, as no river board has been created under it to date.
- **The Inter-State Water Disputes (ISWD) Act, 1956:** This is the primary legal instrument for dispute resolution.
  - When a state government requests the Centre to refer a water dispute that cannot be settled through negotiations, the central government is required to set up a Water Disputes Tribunal within one year.
  - The Tribunal investigates the matter and gives a final and binding decision.

Way Forward

- Resolving India's water disputes requires a shift from a conflict-based to a cooperation-based approach.
- **Institutional Reforms:** The **Inter-State River Water Disputes (Amendment) Bill, 2019**, proposes key changes like establishing a single, permanent tribunal with multiple benches and setting strict timelines for adjudication.
- **Emphasis on Negotiation and Mediation:** The current framework jumps from negotiation to adjudication. There is a need for institutionalised mechanisms for mediation and conciliation as intermediate steps.
- **Creating a Central Water Data Repository:** A neutral, expert body should be created to collect, manage, and disseminate reliable hydrological data to all states.
- **Promoting Water Use Efficiency:** States must be incentivised to improve water-use efficiency in agriculture (which consumes the most water) through practices like micro-irrigation and by reconsidering cropping patterns based on the region's agro-climatic conditions.
- **Adopting a River Basin Approach:** The focus should shift from political boundaries to natural river basins. Activating the River Boards Act to create empowered River Basin Organizations for integrated planning and management.
- **Long-Term Strategies:** States must invest in long-term solutions, including enhanced water conservation techniques, building additional water storage capacity, and modernising water distribution infrastructure to reduce demand and wastage.

1.2 CASTE CENSUS

Context

- The Union Government has approved the inclusion of a caste count in the upcoming national census.

Caste Census

- It is a detailed exercise to collect, compile, and publish data on the caste and sub-caste identities of the entire population.
- While the regular decennial census, conducted by the **Office of the Registrar General and Census Commissioner under the Ministry of Home Affairs,** has consistently collected data on Scheduled Castes (SCs) and Scheduled Tribes (STs), it has excluded information on Other Backward Classes (OBCs) and other caste groups since independence.

Evolution of caste census

- **The British Era (1871–1931):** The British Indian government conducted caste censuses regularly, for administrative and governance purposes. The last such comprehensive data was published for the **1931 Census,** which identified 4,147 distinct castes.

- **Post-Independence Policy (1951 onwards):** The government decided to **discontinue the practice of caste enumeration** in 1951. The rationale was to promote a national identity and move towards the constitutional ideal of a casteless society.
- **The SECC 2011 Experiment:** The UPA government commissioned the **Socio-Economic and Caste Census (SECC)**, a separate exercise from the main census. While its socio-economic data was released, the raw caste data contained around 46 lakh different caste names (often including surnames and gotras), and was deemed too unreliable to be officially published.

Why demand for Caste Census?

The demand for a caste census is rooted in the principles of social justice, equity, and evidence-based policymaking.

- **Updating Affirmative Action (Reservations) =>** Reservation policies for OBCs are still based on estimates derived from the **1931 census data**. The Mandal Commission used this data to recommend a 27% quota for OBCs. A fresh census will provide **"quantifiable data"** on the population and socio-economic status of various castes, a requirement stressed by the Supreme Court in cases like **M. Nagaraj (2006)** for validating reservation policies.
- **Evidence-Based Policymaking =>** Accurate data on the size and condition of different caste groups will enable the government to design more effective and targeted welfare schemes in areas like health, education, and employment, ensuring that benefits reach the most marginalized sections.
- **Breaching the 50% Reservation Cap =>** The Supreme Court in **Indra Sawhney (1992) capped total reservations at 50%.** Fresh data showing that OBCs and other groups constitute a much larger portion of the population (as indicated by the Bihar survey, where OBCs and EBCs form 63%) will intensify the political and legal pressure to breach this 50% ceiling.

- **Enabling "Quota within Quota" (Sub-Categorization) =>** A detailed census can provide the data needed to justify the sub-categorization of the OBC quota. The **Justice Rohini Commission**, for example, found that a small number of dominant OBC castes have cornered a disproportionate share of the benefits. Data can help in creating a more equitable distribution of quotas among the most extremely backward classes within the OBC category.

Challenges and Concerns
Methodological Complexity:

- The biggest challenge is creating a standardised list of castes. Caste names vary by region, and there are thousands of sub-castes. Unlike the SECC 2011's open-ended approach, the new census will likely use a drop-down menu, but compiling this list and reconciling the central and state OBC lists will be a contentious political and administrative exercise.
  - The census relies on self-reported data without verification. This can lead to inaccuracies, strategic misreporting, and potential litigation from communities disputing their categorisation.
- The 2021 Census is already delayed. Adding a complex new variable like caste will require extensive retraining of over 21 lakh enumerators on new digital tools and sensitive questioning techniques, potentially causing further delays.
- Critics argue that the exercise **could harden caste identities** and deepen social divisions, running counter to the constitutional goal of annihilating caste.
- There is a risk that the data will be used for electoral mobilisation and vote-bank politics rather than for genuine welfare and social reform.

Way Forward

- The decision to conduct a caste census is a double-edged sword. On one hand, it is a tool

for achieving social justice, ensuring equitable representation, and crafting data-driven policies for the marginalized. On the other hand, it carries the risk of reinforcing caste identities and intensifying social and political conflicts.

1.3 DIGITAL ACCESS IS A FUNDAMENTAL RIGHT

Context
- The Supreme Court ruled that the right to access digital services is an intrinsic part of the fundamental right to life and liberty under Article 21 of the Constitution.

About Case
- The ruling came in response to a batch of writ petitions filed by two acid attack survivors, who are visually impaired and have facial disfigurements, highlighting their inability to complete the digital Know Your Customer (KYC) process.
- The current system often requires a "live photograph" with blinking, a task they cannot perform, thereby preventing them from opening bank accounts or obtaining SIM cards.

Highlights of the Judgment
- The Bench said that **"In the contemporary era, where access to essential services, governance, education, health care and economic opportunities are increasingly mediated through digital platforms, the right to life under Article 21 of the Constitution must be re-interpreted in light of these technological realities"**.
- The judgment underlined that the "digital divide"—disproportionately affects not only persons with disabilities but also rural populations, senior citizens, economically weaker sections, and linguistic minorities. The Court affirmed that bridging this divide is no longer a matter of policy discretion but a "constitutional imperative."
- The Court invoked the **principle of "substantive equality," which compels the state to move beyond formal equality and take active measures to dismantle systemic barriers faced by disadvantaged groups.** It stressed that true equality requires addressing the unique challenges that prevent certain communities from participating fully in society.

Court Directives for Inclusion
- The RBI and other authorities must **develop alternative verification methods for the digital KYC process,** such as voice-enabled services or Braille formats, to accommodate visually- and hearing-impaired individuals.
- The continuation of paper-based KYC processes is mandatory to ensure no one is excluded.
- Government portals, financial technology services, and educational platforms must be made "universally accessible."
- Regulated entities must conduct periodic accessibility audits and involve persons with disabilities in the user-testing phase of new digital products.

1.4 SHORT ARTICLES

SS on Spyware
Context
- Supreme Court Navigates National Security and Privacy in Pegasus Spyware Case
Background
- The controversy erupted in 2021 when the **"Pegasus Project," a global media group,** revealed that the spyware was used to target thousands of individuals worldwide; including hundreds in India. The government, however, has denied any unauthorised surveillance.
- In response to multiple petitions, the Supreme Court in October 2021 formed an independent expert committee, headed by

retired Justice R.V. Raveendran, to investigate the allegations.

Supreme Court Comments

Legitimacy of Spyware for National Security

- The Court observed that a **country possessing spyware like Pegasus for national security purposes is not inherently wrong.**
- The bench remarked that the crucial question is not the possession of such technology but against whom it is deployed.

Upholding Civilian Privacy

- While acknowledging the need for national security, the Court has strongly affirmed the protection of civilian privacy.
- It has stated that any complaint regarding the violation of a private civilian's right to privacy can be looked into. This stance aligns with the 2017 K.S. Puttaswamy judgment, which established the right to privacy as a fundamental right.

Non-Disclosure of the Raveendran Committee Report

- The **Justice Raveendran committee submitted its report to the Court in a sealed cover in 2022.** The committee found that while malware was detected on five of the 29 phones examined, there was no conclusive evidence of Pegasus spyware.
- The report also noted that the Central Government "did not cooperate" with the investigation.
- The Supreme Court has decided against making the full report public, mentioning concerns that it contains information touching upon the security and sovereignty of the country.

SC removes Point-Based System for Senior Advocates Designation

Context

- The Supreme Court revamped the process for designating senior advocates, scrapping the 100-point system introduced in 2017.

Why Was the Points-Based System Abolished?

- The Court concluded that a lawyer's calibre, standing at the bar, and legal experience could not be objectively assessed through a rigid points-based format.
- The **interview process, which carried 25 points, was criticised for being brief** and potentially humiliating for experienced advocates, The Court observed that subjecting a lawyer of significant standing to a short interview could violate the dignity of the profession.
- A **heavy emphasis on reported judgments (50 points) inherently favoured advocates practising in higher courts**, sidelining the contributions of lawyers from trial and district courts whose cases are less frequently reported.
- The points system lacked specific criteria for evaluating an advocate's character, honesty, and integrity, which the Court deemed essential qualities for a senior advocate.

New Guidelines for a Fairer Process

The Supreme Court has directed all High Courts to amend their existing rules within four months to align with the new, more democratic guidelines:

- The **final decision to confer senior designation will now rest with the Full Court (all judges of the concerned court).**
- The **Permanent Secretariat, established under the previous rules, will continue to function.** Its role will be to receive and compile applications, verify the data, and place the documents of all eligible candidates before the Full Court.
- The Full Court will first attempt to reach a consensus on the candidates. **If a consensus is not possible, the decision will be made through a democratic voting process.** The discretion to use a secret ballot is left to the individual High Courts based on the circumstances of each case.
- To ensure collective and objective decision-making, **individual judges are barred from recommending candidates for designation.**
- Advocates can continue to apply for the designation, which will be treated as their consent. However, the **Full Court also retains the power to designate a deserving advocate**

suo motu (on its own motion) without an **application.**

- The **minimum eligibility requirement of 10 years** of practice for an advocate remains in place.

Triple Test
Context
- Jharkhand Moves to Implement OBC Quotas in Urban Local Body Elections, Adheres to Supreme Court's "Triple Test"

Details
- The **"triple test" was laid down by the Supreme Court in its 2021 judgment in the Vikas Kishanrao Gawali v/s State of Maharashtra case.** It provides a clear, three-step guideline for state governments to follow when providing reservations for OBCs in local body elections, ensuring the process is based on empirical data rather than arbitrary decisions.

The three conditions of the test are:
- The **state must establish a specialised commission to conduct a comprehensive inquiry** into the nature and implications of backwardness within the context of local bodies, collecting detailed data on the socio-economic and educational status of the OBC population.
- Based on the commission's comprehensive report and recommendations, the **state then specified the proportion of seats to be reserved for OBCs in each local body**. This reservation must be proportionate to the OBC population in that specific area and must be applied locally.
- The total percentage of seats reserved for Scheduled Castes (SCs), Scheduled Tribes (STs), and OBCs **combined cannot exceed 50% of the total seats in any local body.**

The provision for such reservations is rooted in **Articles 243D(6) and 243T(6), which empower state legislatures to make provisions for the reservation of seats and chairperson positions in panchayats and municipalities,** respectively, for backward classes.

Padma Awards
Context
- The President presented the Padma Awards for the year 2025 at the Ceremonies held at Rashtrapati Bhawan.

Padma Awards
- The government **established** the Padma Awards in 1954. Initially, they **had** three classes with Hindi names: **Pahela Varg** (First Class), **Dusra Varg** (Second Class), **Tisra Varg** (Third Class)
- In 1955, a Presidential Notification **renamed** these classes to give them the names we know today:
  o **Padma Vibhushan** (replacing Pahela Varg)
  o **Padma Bhushan** (replacing Dusra Varg)
  o **Padma Shri** (replacing Tisra Varg)
- The awards are announced annually on Republic Day and are presented by the President at ceremonial functions held around March and April.
- For 2025, a total of 139 awards were conferred. The list of awardees includes 7 Padma Vibhushan, 19 Padma Bhushan, and 113 Padma Shri awards.
- The selection process is a public-centric affair, with nominations being open to everyone, **including self-nomination**. A Padma Awards Committee, constituted by the Prime Minister each year and headed by the Cabinet Secretary, scrutinises the nominations before the final list is approved by the Prime Minister and the President.
- The award consists of a Sanad (certificate) signed by the President and a medallion. No cash prize is associated with the honour.

Right To Know
Context
- The Supreme Court defends the public's "right to know" and clarifies the principles governing free speech, intermediary liability, and reporting on sub judice matters in the digital age.

Case Background

- In July 2024, ANI filed a ₹2 crore defamation suit against the Wikimedia Foundation in the Delhi High Court.
- **ANI's Allegations:** The news agency claimed its Wikipedia page contained false and defamatory information, including labelling it a "propaganda tool" for the government.
- **High Court's Orders:** In October 2024, the Delhi High Court ordered the complete removal of the allegedly defamatory statements from ANI's page. The High Court later also ordered the deletion of a separate Wikipedia page titled "Asian News International v/s Wikimedia Foundation" which documented the ongoing lawsuit.
- **Wikimedia's Appeal:** While complying with the takedown orders, the Wikimedia Foundation appealed to the Supreme Court.

Supreme Court's Verdict

- The Court dismantled the High Court's orders. The Court declared that the **"right to know" is a fundamental aspect of the right to freedom of speech and expression under Article 19(1)(a)** and the right to life and liberty under **Article 21**.
- It ruled that public discussion or reporting on court proceedings, even if critical, does not automatically constitute contempt of court.
- Referencing the **2012 *Sahara v/s SEBI* case**, the Court clarified that postponement orders on media reporting can only be issued as a last resort when there is a substantial risk to trial fairness, and even then, they must pass the stringent tests of necessity and proportionality.
- The justices asserted that courts must be resilient and **tolerate public criticism and debate**, as such scrutiny ultimately strengthens the judicial institution.

Overseas Citizen of India (OCI)

Context

- The Union Home Minister has launched a new, revamped **Overseas Citizen of India (OCI) Portal** to streamline and simplify the process of obtaining and managing OCI cards.

Overseas Citizen of India (OCI)

- Introduced through an amendment to the **Citizenship Act 1955**, it allows individuals of Indian origin to register as OCI cardholders.
- OCI cardholders are not Indian citizens; they cannot vote in Indian elections, run for public office, or hold constitutional posts.
- **Who is Eligible:** The scheme is open to individuals who were citizens of India on or after January 26, 1950 or were eligible to become citizens on that date. This eligibility extends to their children, grandchildren, and great-grandchildren. Spouses of Indian citizens or existing OCI cardholders can also apply, provided they have been married for at least two years.
- **Key Exclusions:** Any individual who is or ever has been a citizen of **Pakistan or Bangladesh** is ineligible to apply. This exclusion also applies if their parents, grandparents, or great-grandparents were citizens of these countries.
- The OCI card is a lifelong document that grants several key benefits, including:
  o **Lifelong, visa-free travel** to India.
  o **Exemption from registration** with the Foreigners Regional Registration Office (FRRO) regardless of the duration of their stay.
  o **Parity with Non-Resident Indians (NRIs)** in economic, financial, and educational matters. The only major exception is that OCI cardholders cannot purchase agricultural or plantation properties.

E Zero FIR

Context

- The Union government has launched the **e-Zero FIR initiative**.

What is a Zero FIR?

- It is a mechanism that **allows any police station to register an FIR for a cognisable offence**, regardless of whether the crime was committed within its territorial jurisdiction.

- The station assigns it a serial number of '0' and then transfers it to the appropriate police station for investigation.
- It was introduced to ensure that victims are not turned away and immediate action is taken without delays caused by jurisdictional confusion.

e-Zero FIR Initiative

- It creates a seamless, automated system for high-value cyber fraud complaints. Initially launched as a pilot in Delhi, the system is designed to overcome procedural delays.
- **The National Cybercrime Reporting Portal (NCRP):** This is the citizen-facing front end (**cybercrime.gov.in**) where any individual can report a cybercrime online.

Step-by-Step Process:

- A victim reports a financial cyber fraud exceeding **₹10 lakh** on the NCRP.

- The system automatically triggers the registration of a **Zero FIR** at Delhi's dedicated e-Crime Police Station.
- The CCTNS network immediately routes the Zero FIR to the cybercrime police station that has the proper territorial jurisdiction over the case (based on the victim's location or other details).
- The victim is then notified and has **three days** to visit the designated local cybercrime police station to provide details and sign the necessary documents.

This entire process is legally supported by the new criminal law framework, specifically **Sections 173(1) and 1(ii) of the Bharatiya Nagarik Suraksha Sanhita (BNSS)**, which allow for the electronic registration of FIRs, irrespective of jurisdiction.

1.5   SNIPPETS

Topics	Details
Warrant Of Arrest	• The Supreme Court in the Kasireddy Upender v/s State of Andhra Pradesh case clarified that when an arrest is made with a warrant, the warrant itself is sufficient to inform the individual of the grounds for their arrest. • The Court ruled that **a warrant of arrest is a judicial document that outlines the reasons for arrest, and reading it aloud to the person being arrested fulfils the constitutional mandate** of informing them of the grounds. • In situations where an arrest is made without a warrant, the police must immediately and clearly inform the individual of the specific reasons for their arrest. Failure to do so would violate the fundamental right to life and personal liberty under Article 21. • If an arrested person claims they were not informed, the **burden of proof falls on the police** to demonstrate compliance with Article 22(1).
Operation Abhyaas	• India conducted a widespread civil defence drill, codenamed "Operation Abhyaas," across the country from May 7 to May 9, 2025. • The exercise was **conducted by the Ministry of Home Affairs (MHA),** prompted by heightened tensions with Pakistan following a deadly terror attack in Pahalgam, Jammu and Kashmir. • This was the most extensive civil defence drill held in India since the 1971 war. • The exercise was **conducted under the Civil Defence Rules of 1968** and was planned to assess civilian preparedness for various emergency scenarios. • Authorities tested air-raid warning sirens in numerous cities to alert civilians to potential aerial threats. This was followed by "crash blackout" measures, where residents and establishments practised switching off all lights to reduce visibility

	for enemy aircraft.
My Bharat	• The Mera Yuva Bharat (MY Bharat) platform has launched a significant initiative to recruit and train youth volunteers in disaster management across the country.
	• It is an **autonomous body established in 2023 by the Ministry of Youth Affairs & Sports.**
	• It aims to provide young people with equitable access to opportunities, empowering them to realize their aspirations and contribute to the vision of creating a "Viksit Bharat" (Developed India) by 2047.
	• The initiative specifically caters to the youth in the **age group of 15-29 years**, which aligns with the definition of 'Youth' in the National Youth Policy.
Veeraswami Case	• The process of filing a First Information Report (FIR) against a sitting judge in India is governed by a landmark 1991 Supreme Court ruling in the K. Veeraswami v/s Union of India case.
	• In its 1991 judgment, the Supreme Court held that **judges of the High Courts and the Supreme Court are "public servants" under the Prevention of Corruption Act 1947.**
	• The Court established that **no FIR can be registered against a sitting judge of a High Court or the Supreme Court without the prior sanction of the Chief Justice of India (CJI).**
	○ The rationale behind this is that the **relationship between a judge and the President (who appoints them) is not a typical employer-employee relationship.**
	• The government is required to consult the CJI, and if the CJI advises against it, the case cannot be registered.
	• In 2019, then-CJI Ranjan Gogoi permitted the CBI to register an FIR against Justice S. N. Shukla of the Allahabad High Court.
ECINET	• The Election Commission of India (ECI) launched ECINET, a new, integrated digital platform designed to streamline and simplify electoral services for all stakeholders.
	• ECINET is a comprehensive **digital ecosystem that acts as a one-stop solution for voters, political parties, candidates, and election officials.**
	• To ensure the credibility of the electoral roll, data entry on ECINET will be restricted to authorized ECI officials, such as Booth Level Officers (BLOs) and Electoral Registration Officers (EROs).
Annual South Asia Press Freedom Report 2024-25	• The Annual South Asia Press Freedom Report 2024–25, titled "Frontline Democracy: Media and Political Churn," released by the International Federation of Journalists (IFJ) on World Press Freedom Day (May 3, 2025)
	• The report describes Pakistan as an "authoritarian regime under the guise of democracy," using censorship and violence to control the media.
	• The media industry faces a severe economic crisis. A "shrunken job market" is fuelled by declining advertising revenue and corporate mergers that consolidate media power.
	• The **rise of Artificial Intelligence (AI) poses a dual threat:** it jeopardises jobs in newsrooms and fuels the rapid spread of misinformation and disinformation.
	• The report singles out India as a country where the media faces a "systemic

	strategy" to curtail its independence through a combination of legal, political, economic, and technological pressures.
Jnanpith Award	• The 58th Jnanpith Award, was conferred to renowned Sanskrit scholar Jagadguru Swami Rambhadracharya and veteran Urdu poet and lyricist Gulzar.
	• The **Jnanpith Award was instituted in 1961 by the Bharatiya Jnanpith**, a cultural and literary organisation founded in 1944 by the industrialist Sahu Shanti Prasad Jain and his wife, Rama Jain.
	• The award considers works **written in any of the 22 languages listed in the Eighth Schedule of the Indian Constitution, along with English.**
	• Only living Indian citizens are eligible. A writer can receive this honour **only once in their lifetime.**
	• The award includes a cash prize, a citation plaque, and a distinctive bronze replica of Vagdevi (Saraswati), the goddess of learning.
	• To ensure linguistic diversity, if a language is awarded in a particular year, it is not considered for the next two years.
Human Development Report (HDR) 2025	• India has climbed to the **130th position out of 193 countries** in the **Human Development Index (HDI) 2025**, released by the United Nations Development Programme (UNDP).
	• Human Development Index (HDI) is a composite index published annually as **part of UNDP's Human Development Report (HDR).**
	• It assesses progress across three fundamental dimensions
	o **A Long and Healthy Life:** Measured by **life expectancy at birth**.
	o **Access to Knowledge:** Measured by two indicators: **mean years of schooling** (the average number of years of education received by people ages 25 and older) and **expected years of schooling** (the number of years of schooling that a child entering school can expect to receive).
	o **A Decent Standard of Living:** Measured by **Gross National Income (GNI) per capita**, adjusted for purchasing power parity (PPP) to account for differences in the cost of living between countries.
	• India ranks above Nepal (145th) and Pakistan (168th) but lags behind China (75th), Sri Lanka (78th), and Bhutan (127th). It is at par with Bangladesh (130th).
	• Globally, **Iceland tops the HDI** at 0.972, and South Sudan ranks last at 193rd with an HDI of 0.388.

1.6 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

TOPIC NAME	DATE
REVIVING A FAR-SIGHTED BUT FORGOTTEN BILL MECHANISM	3th May, 2025
WHAT ARE THE CHALLENGES FACED BY THE CIVIL SERVICES?	8th May, 2025
ACADEMIC FREEDOM	12th May, 2025
14 QUESTIONS ASKED BY PRESIDENT FROM SC	17th May, 2025
COPYRIGHT'S TRYST WITH GENERATIVE AI	23rd May, 2025
A SHIFT IN FREE SPEECH JURISPRUDENCE	28th May, 2025
A CASE OF PRACTICAL, PRAGMATIC AND INNOVATIVE EDUCATION	31st May, 2025

2. INTERNATIONAL RELATIONS

2.1   PANDEMIC AGREEMENT

Context

- Member countries of the World Health Organization (WHO) have adopted the Pandemic Agreement.

What is the Pandemic Agreement?

- It is a **legally binding international treaty**, only the second such treaty in the WHO's history, the first being the Framework Convention on Tobacco Control (2003).
- The agreement is designed to ensure a more coordinated, equitable, and effective response to future pandemics.
- Its **core philosophy is based on the principles of equity and solidarity** to create a system where all countries work together and share the benefits of scientific progress.

Key Pillars of the Agreement

- **Equity through the PABS System:** The centrepiece of the agreement is the **Pathogen Access and Benefit-Sharing (PABS) system**. This is a mechanism designed to prevent the "vaccine apartheid" seen during COVID-19.
  - **How it works:** Countries that detect and share data on new, emerging pathogens (like viruses) will be guaranteed access to the resulting health products.
  - **The 20% commitment:** In return for sharing this vital information, pharmaceutical companies will be required to provide the WHO with **20% of their production** of vaccines, tests, and treatments. Of this, 10% will be donated to low-income countries, and the other 10% will be offered at affordable, not-for-profit prices.

- **Strengthening Global Supply Chains:** The agreement aims to prevent the hoarding and supply chain breakdowns that paralysed the world in 2020. It includes provisions to:
  - Promote the **local and regional production** of medical supplies, including vaccines and medicines, particularly in developing countries.
  - Ensure a more transparent and resilient global supply network for essential items like masks, ventilators, and diagnostics.

- **Enhanced Prevention and Surveillance:** The treaty emphasises a **"One Health" approach**, recognising the interconnectedness of human, animal, and environmental health. It seeks to strengthen global surveillance systems to detect and report potential outbreaks much faster before they can escalate into pandemics.

- **Respect for National Sovereignty:** The WHO does not gain any power to enforce measures like lockdowns, travel restrictions, or vaccine mandates on any country. These decisions remain entirely under the control of national governments.

The treaty will only come into force after **60 countries formally ratify it** through their national legislative processes. An annexe with technical details is expected to be finalised by the next World Health Assembly in 2026.

Absence of the United States, which is not currently a WHO member. The non-participation of the world's largest economy and a major player in global health raises questions about the treaty's universal implementation and funding.

2.2   INDIA RESTRICTS BANGLADESHI EXPORTS VIA LAND

Context

- India has imposed restrictions on several key Bangladeshi exports entering through land ports.

New Restrictions Imposed by India

The restriction targets Bangladesh's powerhouse export sector: **Ready-Made Garments (RMG)**.

- The DGFT has mandated that RMG exports from Bangladesh are now banned from entering India through any land port. They can only be imported via two seaports: **Kolkata and Nhava Sheva (Mumbai)**, where they will be subject to mandatory inspections.
- Beyond garments, the ban also applies to a range of other Bangladeshi products, including plastic goods, wooden furniture, processed foods (juices, bakery items), and industrial goods like cotton yarn and dyes. These items are restricted from entering through land ports in the Northeastern states of Assam, Meghalaya, Tripura, and Mizoram, as well as specific land ports in West Bengal.

Why Has India Taken This Step?

- In April 2025, Bangladesh banned the import of **Indian yarn** through land routes, forcing Indian exporters to use slower and more expensive sea routes. It also stopped the import of **Indian rice** through major land ports in West Bengal.
- Cheap Bangladeshi imports of goods like garments, furniture, and food products have dominated the markets of the Northeast. By curbing these imports, the government aims to create space for local manufacturing to grow, in line with the **Atmanirbhar Bharat** initiative.

The Impact and Consequences

For Bangladesh

- The RMG sector is the backbone of Bangladesh's economy (a $38 billion global industry). With **93% of its $700 million in garment exports to India** previously routed

through land ports, the new restrictions will increase transportation costs and delivery times, eroding competitiveness.

- Bangladesh will lose its **duty-free access** to key markets like the European Union after it graduates from its Least Developed Country (LDC) status in 2026.

For India

- **Empowering Local Industry:** The Confederation of Indian Textile Industry (CITI) has welcomed the move, predicting it will create new opportunities for Indian manufacturers.
- **Strategic Realignment: Reducing Dependency on Bangladesh:** This is the most crucial long-term implication. India is actively reducing its reliance on Bangladesh for regional connectivity. Two major infrastructure projects are key to this strategy:
  - **The Kaladan Multi-Modal Transit Transport Project:** A landmark project under India's 'Act East Policy', it connects Kolkata's port to Sittwe port in Myanmar by sea. From there, it uses a combination of inland waterways and roads to connect to Mizoram. This gives India's Northeast **direct access to the sea, completely bypassing Bangladesh.**
  - **The Shillong-Silchar Highway (NH-6):** This new high-speed corridor within the

Northeast will drastically cut travel time and improve internal connectivity, further reducing logistical dependence on routes passing through other countries.

2.3 ISRAEL PLANS TO REOCCUPY ALL OF GAZA

Context
- Israel's Security Council has approved a plan to gradually reoccupy the entire Gaza Strip and hold it indefinitely.

Origins of the Conflict
- The roots of the Israeli-Palestinian conflict trace back to 1948 with the creation of the State of Israel. This event led to the displacement of about 750,000 Palestinians, an event they refer to as the **Nakba**, or "catastrophe".

A Timeline of Gaza's Occupation
- **1967: The Six-Day War and the Beginning of Occupation:** Tensions escalated after Egypt closed the Straits of Tiran to Israeli shipping. In a preemptive strike, Israel launched an attack on Egypt and, in the course of the war, captured the Gaza Strip (from Egypt), the West Bank and East Jerusalem (from Jordan), the Golan Heights (from Syria), and the Sinai Peninsula (from Egypt). This marked the beginning of Israel's direct military occupation of Gaza.
- **1987-1993: The First Intifada and the Rise of Hamas:** Protests erupted in Gaza. This period of civil disobedience and violence marked a shift in the conflict. It was during this time, in 1987, that **Hamas** was founded as an offshoot of the Muslim Brotherhood, with the stated goal of liberating Palestine, including through armed struggle.
- **1993: The Oslo Accords and Hopes for Peace:** This agreement, signed between Israel and the Palestine Liberation Organization (PLO), created the **Palestinian Authority (PA)**, which was given limited self-governance over parts of the Gaza Strip and the West Bank. However, Hamas strongly opposed the accords and launched a series of attacks.
- **2000-2005:** This was a period of intense violence characterised by suicide bombings, shootings, and large-scale Israeli military operations.
- **2005: Israel's Unilateral Disengagement from Gaza:** Israel dismantled all 21 of its settlements in the territory and withdrew its military forces. From Israel's perspective, this ended the occupation of Gaza.
- Despite the 2005 withdrawal, the international community, including the **United Nations**, has maintained that Gaza remains under Israeli occupation. This is because **Israel continued to exercise significant "effective control" over the territory by:**
  o Controlling all of Gaza's land borders (with the exception of the Rafah crossing with Egypt).
  o Controlling its airspace and shoreline.
  o Managing the registry of the Palestinian population.
- This control has allowed Israel to impose a **strict blockade on Gaza since 2007** when Hamas took full control of the territory from the Palestinian Authority.
- Recently, Israel's Security Council approved a plan to reoccupy the entire Gaza Strip. This decision marks a fundamental reversal of the 2005 disengagement policy and signals a new, uncertain phase in the long and tragic history of the Israeli-Palestinian conflict.

2.4 INDIA UK FREE TRADE DEAL

Context
- India and the United Kingdom have signed a Free Trade Agreement (FTA).

About Free Trade Agreement (FTA)
- It is a pact **between two or more countries to reduce or eliminate trade barriers by cutting**

tariffs (taxes on imported goods) and removing non-tariff barriers (like quotas or complex regulations) to make it easier and cheaper for countries to trade goods and services with each other.

India-UK FTA

What India Gains?

- **Boost for the Services Sector:** The FTA provides easier access for Indian professionals and service-based companies to the UK market.
  - **Professional Visas:** The agreement includes provisions for around 100 new visas annually for skilled Indian professionals, particularly in the IT and healthcare sectors.
- **Double Contribution Convention:** This is a major benefit for Indian professionals on temporary assignments in the UK. It exempts them from paying UK National Insurance (social security) contributions for up to three years (an increase from the previous one-year exemption). This reduces the cost for Indian companies sending employees to the UK.

- **Limited Gains in Goods:** A report by the Global Trade Research Initiative (GTRI) notes that since many of India's goods exports to the UK already face low tariffs, the primary economic benefits for India will come from services and investment rather than goods trade.

What the UK Gains?

Massive Tariff Cuts on Key Exports:

- **Whisky and Gin:** India will slash its high tariffs on UK spirits from 150% to 75% immediately, with a further reduction to 40% over the next 10 years. This is a huge win for the UK's Scotch whisky industry, as India is the world's largest whisky market.
- **Automobiles:** Tariffs on cars will be cut from over 100% down to 10% under a quota system, significantly benefiting UK carmakers like Jaguar Land Rover (which is, ironically, owned by India's Tata Motors).
- **Other Goods:** Tariffs will also be lowered on a range of other UK products, including cosmetics, medical devices, lamb, salmon, and chocolates, making them more competitive in the Indian market.

2.5   SHORT ARTICLES

Ukraine's Critical Minerals

Context

- Ukraine and the U.S. signed a critical minerals deal granting American access to Ukraine's rare earth resources for reconstruction and strategic cooperation.

What Are Critical Minerals?

- They are elements and raw materials that are fundamental to modern economies, national security, and the global transition to clean energy.
- They **include rare earth elements, lithium, cobalt, graphite, and titanium, among others**. They are essential components in various technologies, from smartphones and electric vehicles to advanced defence systems.
- The global supply chains for these materials are vulnerable due to concentrated production

and processing in a few countries, most notably China, which currently dominates the global market.

Ukraine's Mineral Wealth

- Ukraine holds one of Europe's largest confirmed reserves of lithium, a key component in rechargeable batteries.
- The country is endowed with **about 20% of the world's graphite,** an essential element for battery production.
- Ukraine has the **largest titanium reserves in Europe**.
- Deposits of lanthanum, neodymium, and other rare earths crucial for high-tech manufacturing are also present.
- These resources are yet to be commercially exploited and would require substantial investment and time to develop. The ongoing

conflict with Russia has complicated access to these deposits, with a significant portion located in occupied or contested territories.

Indo-Pacific Maritime Domain Awareness

Context

- The United States cleared the sale of advanced maritime surveillance technology to India for an estimated $131 million.

About the Deal

- The deal is **part of the Quad's Indo-Pacific Maritime Domain Awareness (IPMDA) initiative.**
- The proposed sale includes SeaVision software, a web-based tool for real-time vessel tracking, which will be customised to meet India's specific requirements.
- The principal contractor for the sale is identified as Hawkeye 360, a U.S.-based firm.

The Quad and the IPMDA Initiative

- **Quad**, which includes the United States, India, Japan, and Australia, serves as a diplomatic and security forum focused on ensuring a free, open, and prosperous Indo-Pacific region.
- At a summit in Tokyo in 2022, the Quad leaders launched the **Indo-Pacific Maritime Domain Awareness (IPMDA)** initiative.

Objectives of IPMDA

- **Combat "Dark Shipping":** The initiative aims to track vessels that switch off their identification transponders to engage in illicit activities like illegal fishing, smuggling, and sanctions evasion.
- **Create a Comprehensive Maritime Picture:** IPMDA seeks to build a near-real-time, extensive, and accurate operational picture of the maritime domain. This allows partner nations to respond more effectively to security challenges.
- **Integrate Key Regions:** The initiative focuses on three critical maritime areas: the Pacific Islands, Southeast Asia, and the Indian Ocean Region (IOR).
- **Enhance Regional Cooperation:** IPMDA promotes information sharing and collaboration among like-minded countries to safeguard crucial sea lanes of communication.

Special 301 Report

Context

- The United States Trade Representative (USTR) has once again placed India on its "Priority Watch List" in the 2025 Special 301 Report

What is the Special 301 Report?

- It is an annual review conducted by the USTR that assesses the condition of IP protection and enforcement among U.S. trading partners.
- **Mandated by the U.S. Trade Act** of 1974, the report **identifies countries that, in the U.S.'s view, have inadequate IP laws or enforcement mechanisms.**
- Countries with the most concerns are placed on the "Priority Watch List," indicating that they will be the focus of increased bilateral attention from the U.S.

Why Does India Remain on the Priority Watch List?

- **Section 3(d) of the Indian Patents Act** limits patents on incremental innovations of existing drugs unless they show significantly enhanced efficacy. This provision, intended to prevent the "evergreening" of patents and ensure access to affordable medicines, is a concern for U.S. pharmaceutical companies.
- **Online piracy is a major problem in India,** with widespread unauthorized sharing of movies, music, and software. The report points to large-scale commercial piracy, for example, the photocopying of academic books.
  - The USTR argues that India needs to fully implement the WIPO Internet Treaties and strengthen its legal framework to combat these issues effectively.
- **India lacks specific civil or criminal laws to protect trade secrets**—confidential business information that gives a company a competitive edge. This lack of protection makes U.S. companies hesitant to bring their proprietary information into the Indian market.
- The USTR points out that **India imposes high customs duties on IP-intensive products** like

medical devices, pharmaceuticals, and information and communications technology. The U.S. views these tariffs as a barrier to market access for its companies.

NOTAM

Context

- India and Pakistan issued a Notice to Air Mission (NOTAM) to restrict airspace for security reasons.

Notice to Air Mission (NOTAM)

- It is an **official alert issued by a country's civil aviation authority.**
- Its objective is to provide pilots, airlines, and other flight personnel with timely information about potential hazards or changes in the aviation environment that could affect the safety of a flight.
- It is mandatory for pilots to check all relevant NOTAMs before takeoff to ensure they have the most current information for their planned route.
- These notices use a specific, coded language to convey information quickly and clearly.

A NOTAM can be issued for a variety of reasons, including:

- **Airspace Restrictions:** Closing or limiting access to certain areas due to military exercises, VIP movements (like a head of state's flight), or security threats.
- **Airport Issues:** Announcing a closed runway, a malfunctioning navigation aid like a radio beacon, or temporary obstructions like a tall construction crane near an airfield.
- **Special Events:** Warning of activities like air shows or parachute jumps that could pose a risk to aircraft.

> International Civil Aviation Organization (ICAO) rules **allow countries to restrict airspace for security but limit such closures to one month at a time.**

Impact of Airspace Closures

- Aircraft must take longer paths to avoid the closed airspace.
- Longer flights mean more fuel is burned. This increases operational costs for airlines.

- Airlines pass these higher operational costs to consumers; as a result, passengers may see an 8–12% increase in ticket prices for affected routes.

India Bhutan Relations

Context

- India and Bhutan held the 6th Joint Group of Customs (JGC) meeting in Thimphu.

India-Bhutan Relations

- Both share a special and time-tested partnership, anchored by the **Treaty of Friendship and Cooperation, first signed in 1949 and updated in 2007**. This treaty forms the bedrock of their close economic and strategic ties.
- India is **Bhutan's largest partner** for both exports (like hydropower and agricultural products) and imports (like fuel and machinery).
- Since Bhutan is a landlocked country, it relies heavily on India's seaports (like Kolkata and Haldia) and its road and rail networks for its trade with the rest of the world. The **10 Land Customs Stations** located along their shared 699-km border are the primary gateways for this vital cross-border trade.

Key Initiatives Discussed at the Meeting

- Both sides are working to link their digital customs platforms—India's **Indian Customs EDI System (ICES)** and Bhutan's **Revenue Administration Management Information System (RAMIS)**.
- **Electronic Cargo Tracking System (ECTS)** uses GPS-enabled digital seals to track cargo trucks moving from Bhutan through Indian territory to seaports.
- **Coordinated Border Management (CBM)** involves customs officials from both countries working together at the border checkpoints.
- India has offered to help Bhutan implement its own **Authorised Economic Operator (AEO)** program. This system identifies and certifies trusted, low-risk traders who are then granted benefits like faster customs clearance and a "green channel" for their goods.

- Both countries are working to improve their **Risk Management System (RMS)**, which uses data analytics to flag high-risk shipments for inspection while allowing low-risk cargo to pass through quickly.

IMF Executive Board

Context

- India has nominated veteran bureaucrat Parameswaran Iyer to its seat on the Executive Board of the International Monetary Fund (IMF).

International Monetary Fund (IMF)

- The IMF is a **global financial institution established in 1944 at the Bretton Woods Conference.** Headquartered in Washington, D.C., its primary mandate is to ensure the stability of the international monetary system.

What does the IMF do?

- **Economic Surveillance:** The IMF monitors the economic and financial policies of its 191 member countries, providing advice and publishing regular assessments like the World Economic Outlook. This helps identify potential risks to global economic stability.
- **Lending:** It provides loans to countries facing balance-of-payments problems (i.e., they cannot afford to pay for their imports or service their foreign debt). These loans come with **"conditionality,"** requiring the borrowing country to implement economic reforms (often austerity measures) to address the root causes of their financial distress.
- **Capacity Development:** It offers technical assistance and training to help member countries strengthen their economic institutions in areas like tax policy, central banking, and statistical data collection.

How is the IMF governed?

- The IMF operates on a quota-based system. Each member country contributes a certain amount of money, called a **quota subscription**, based on its relative size in the world economy. This quota determines a country's voting power and its borrowing limit.
- Major economies like the United States, which is the largest contributor, hold significant voting power, giving them veto power over major decisions.
- The organisation is managed by a **Managing Director** who chairs the **Executive Board**, which handles the day-to-day business.

East China Sea Issue

Context

- China has deployed its aircraft carrier, the **Liaoning**, near the disputed Senkaku Islands.

Senkaku/Diaoyu Islands Dispute

- The **Senkaku Islands (claimed as the Diaoyu Islands by China)** are a small, uninhabited group of islets in the East China Sea.
- They are situated near vital international shipping lanes.
- The surrounding waters are rich in fish, and the seabed is believed to hold oil and gas reserves.
- **Japan currently administers the islands.** However, China and Taiwan also make claims to them.

China's strategy: by maintaining a near-constant presence of its ships in the waters around the Senkakus, it aims to **normalise its presence**, challenge Japan's administrative control, and create a new status quo on the ground.

China's Growing Naval Power

- The People's Liberation Army Navy (PLAN) is now the **world's largest navy by number of ships** (over 370).
- It currently operates two aircraft carriers (the **Liaoning** and the **Shandong**).

- A third, more advanced carrier, the **Fujian**, featuring cutting-edge electromagnetic catapults similar to those on U.S. carriers, is expected to enter service soon.
- China's ambitious plan is to operate **six aircraft carriers by 2035**, with future models being nuclear-powered, putting them on par with the U.S. Navy.

India Chile Relations

Context

- India and Chile have signed the Terms of Reference (ToR) to start negotiations for a Comprehensive Economic Partnership Agreement (CEPA).

India-Chile Relations

- The foundation was laid in **1956** when Chile became the first South American nation to sign a trade agreement with India.
- In **2006**, this relationship was formalised with a **Preferential Trade Agreement (PTA)**, a limited deal that reduced tariffs on only a select list of goods.
- This PTA was **expanded in 2017**, increasing the number of products with preferential market access.
- Bilateral trade, while doubling from 1.8 billion in 2016–17 to 3.6 billion in 2024-25, remains heavily skewed in Chile's favour. India currently runs a large **trade deficit of $2.5 billion**, mainly due to its import of raw materials like copper from Chile.

PTA v/s CEPA

- **Preferential Trade Agreement (PTA)** is a basic form of trade pact that focuses on reducing tariffs on a limited number of goods. It is the first step in trade liberalisation between two countries.
- **The Comprehensive Economic Partnership Agreement (CEPA)** is a much wider and more ambitious agreement. It goes far beyond just goods to cover a broad spectrum of economic activities. A CEPA includes:
  o **Trade in Goods:** A deeper and broader reduction of tariffs across most product lines.
  o **Trade in Services:** Liberalizing rules to make it easier for companies to operate in sectors like IT, banking, tourism, and healthcare.
  o **Investment:** Includes provisions to protect and promote investment from each other's countries, creating a more secure environment for businesses.
  o **New Age Areas:** Crucially, the India-Chile CEPA will also cover modern economic areas such as **digital trade, intellectual property rights, government procurement, and cooperation on small and medium-sized enterprises (MSMEs).**

Chile is the **world's largest producer of copper and the second-largest producer of lithium, a vital component for batteries used in electric vehicles (EVs) and electronics.** As India pushes its **National Mission on Electric Mobility** and aims to become a global manufacturing hub, securing a stable supply of these critical minerals is a top national priority. The CEPA will facilitate Indian investment in Chile's mining sector.

2.6   SNIPPETS

Topics	Details
Dag Hammarskjöld Medal	• The United Nations posthumously awarded the Dag Hammarskjöld Medal to two Indian peacekeepers, Brigadier General Amitabh Jha and Havildar Sanjay Singh, on the International Day of UN Peacekeepers on May 29, 2025. • Named in **honour of the 2nd UN Secretary-General, Dag Hammarskjöld**, who died in a plane crash in 1961 during a peace mission in Congo. • This is the highest honour awarded to UN peacekeepers.

	• It is presented annually to military personnel, police, and civilians who have lost their lives while serving in UN peacekeeping operations. • The **2025 ceremony, held under the theme "The Future of Peacekeeping,"** honoured a total of 57 peacekeepers from various countries. • India stands as the fourth-largest contributor of personnel to UN peacekeeping missions.
New Caledonia	• New Caledonia faces renewed unrest after failed political talks on its future status with France. • New Caledonia is a **French overseas territory located in the southwest Pacific Ocean**. • Its location in the Melanesia subregion of Oceania places it in a strategically vital part of the Indo-Pacific. • The central conflict in New Caledonia is between the indigenous Kanak population, who seek full independence from France, and the descendants of European settlers (known as "Caldoches") and other ethnic groups who want to remain part of France.
Belt And Road Initiative (BRI)	• Colombia joins China's Belt and Road Initiative, deepening China's influence in Latin America. • The BRI was **launched by Chinese President Xi Jinping in 2013 to revive ancient trade routes** (like the Silk Road) and boost global connectivity. • It is a trillion-dollar plan to connect Asia, Europe, Africa, and Latin America through infrastructure and trade. It funds megaprojects—ports, railways, energy plants—in over 150 countries. • Supporters say it brings development to poorer nations; critics call it a "debt trap" that increases China's global influence.
World Food Prize	• Mariangela Hungria, a Brazilian microbiologist, has been named the 2025 World Food Prize Laureate for her research on soil microbes, which has improved crop yields and reduced greenhouse gas emissions. • The World Food Prize was **founded in 1987 by Dr. Norman Borlaug, the father of the Green Revolution,** who himself received the Nobel Peace Prize in 1970 for his work in combating world hunger. • The objective is to recognise and reward life-altering advancements that have increased the quality, quantity, or availability of food for human consumption. • The **first recipient of the World Food Prize was Dr. M. S. Swaminathan,** the architect of India's Green Revolution. • Laureates receive a diploma, a commemorative sculpture, and a monetary award of $500,000.
International Booker Prize	• The 2025 International Booker Prize has been awarded to Heart Lamp, a collection of short stories by Kannada author and activist Banu Mushtaq. • It is a literary award given annually to the best work of **fiction translated into English and published in the UK or Ireland.** • It **recognises both the author and translator equally,** splitting the £50,000 prize money between them. • It is open to novels or short-story collections from any language, provided **they are translated into English.** • 2025 Winner is the first Kannada-language book to win the prize. The book was translated into English by Deepa Bhasthi (the first Indian translator to win).

New Development Bank (NDB)	• Algeria has officially joined the New Development Bank (NDB), a financial institution created by the BRICS countries.
	• The **BRICS group was formed as BRIC (Brazil, Russia, India, China) in 2009**. South Africa joined in 2010, transforming BRIC into BRICS.
	• **In 2014, members established the New Development Bank (NDB) with the Fortaleza Declaration,** and with an initial capital of $50 billion.
	• In 2024, it expanded with five new members: Egypt, Ethiopia, Iran, UAE, and initially Saudi Arabia. Indonesia became the first Southeast Asian nation to join the bloc in January 2025.
	• Its headquarters is in Shanghai, China. In 2021, the NDB welcomed its first new members, Bangladesh, UAE, Uruguay, and Egypt, expanding beyond the original BRICS nations.
E Passport	• India has introduced biometric e-passports, joining over 120 countries in adopting advanced travel technology.
	• It is introduced under the Passport Seva Programme 2.0, blending traditional paper passports with modern digital technology, including a Radio Frequency Identification (RFID) chip in the back cover.
	• The **chip stores personal and biometric information, such as name, date of birth, passport number, facial recognition information, and a digital signature,** ensuring data authenticity.
	• The benefits of biometric e-passports include high security, faster immigration, global acceptance, fraud prevention, enhanced national security, and privacy protection.
	• The **India Security Press in Nashik, under the Ministry of Finance, manufactures all biometric e-passports.**

2.7 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
A PROFOUND SHIFT IN THE GLOBAL ORDER	5th May, 2025
THE BUILDING BLOCKS OF AN INDIA-U.S. ENERGY FUTURE	9th May, 2025
THE FRAGMENTATION IN THE GLOBAL FIGHT AGAINST TERROR	9th May, 2025
TRUMP'S VISIT TO MIDDLE EAST	20th May, 2025
THE ONGOING OIL PRICE TENSIONS	21st May, 2025
INDIA'S 'NEW NORMAL' DECONSTRUCTED	22nd May, 2025

3. ECONOMY

3.1   SHORT ARTICLES

Global Report on Food Crises

Context

- The Global Report on Food Crises 2025 reveals that acute hunger has reached a new global high.

About Global Report on Food Crises (GRFC)

- It is **prepared by the Food Security Information Network (FSIN)** and the **Global Network Against Food Crises (GNAFC)** and also includes major international bodies like the UN's Food and Agriculture Organization (FAO), the World Food Programme (WFP), UNICEF, the European Union, and various NGOs. This consensus-based approach gives its findings immense credibility.

Highlights of the Report

- In 2024, **295.3 million people** across 53 countries faced acute food insecurity, an increase from the 281.6 million people reported in 2023.
- The most severe category of hunger, known as **IPC/CH Phase 5 (Catastrophe/Famine)**, affected **1.9 million people**. This is more than double the number from the previous year.
- Humanitarian funding for food and nutrition sectors is projected to fall by as much as **45% in 2025,** threatening life-saving aid operations in the world's worst crisis zones.
- In 2024, over **37 million children under the age of five** were suffering from acute malnutrition in the 26 worst-affected countries.

What is Driving the Crisis?

- Wars and conflicts destroy food systems, displaced populations, and are often used as a weapon of war by blocking humanitarian access.
- Climate change is fueling more frequent and intense droughts, floods, and storms, devastating agriculture in vulnerable regions.
- Runaway inflation, currency devaluation, and economic turmoil make food unaffordable for the poorest households, even when it is physically available.

Sources of the RBI's Surplus

Context

- The Reserve Bank of India (RBI) has announced a surplus transfer of ₹2.69 lakh crore to the Central Government for the financial year 2024-25.

How the RBI Earns Its Surplus?

- **Foreign Exchange Operations:** This is the biggest contributor. The RBI manages foreign exchange reserves (around $650 billion). It invests these reserves in foreign government bonds (like US Treasury bills), earning interest. When the RBI intervenes in the currency market—selling dollars to prevent the rupee from falling too sharply—it often realises significant profits.
- **Seigniorage (Profit from Printing Money):** The face value of a banknote (e.g., ₹500) is far higher than its printing cost (a few rupees). This difference is a direct revenue source for the RBI.
- **Interest on Loans:** As the banker to the government and commercial banks, the RBI earns interest on the loans it provides. This includes interest on loans to the Central and State governments and interest earned from banks through liquidity operations like the Repo Rate.
- **Interest on Domestic Securities:** The RBI invests in rupee-denominated government bonds. These holdings support monetary policy operations and generate revenue.
- **Liquidity Adjustment Facility (LAF) and Marginal Standing Facility (MSF):** The RBI lends to banks through tools like LAF (overnight funds) and MSF (emergency borrowing at higher rates). These transactions yield interest income.

- **Management Commissions:** The RBI earns revenue through fees and commissions related to its various functions, including managing government borrowings and overseeing the currency and payment systems.
- **Foreign Exchange Transactions and Gold Revaluation:** The RBI profits from buying and selling foreign currencies, especially when the rupee's value changes against the dollar. Rising gold prices increase the value of the RBI's gold reserves, contributing to unrealised gains in the Currency and Gold Revaluation Account (CGRA).

India is 4th Largest Economy

Context

- According to the International Monetary Fund (IMF), India's nominal GDP is now valued at about $4.19 trillion, passing Japan's $4.186 trillion, which places India behind only the United States, China, and Germany.

Factors Behind India's Ranking Improvement

- India stands out as the **world's fastest-growing major economy.** The IMF forecasts a growth rate of 6.2% for India in 2025, higher than the global average of 2.8%.
- Government initiatives have played a crucial role. The "Make in India" campaign aims to boost the manufacturing sector, while "Digital India" has revolutionised the services sector and financial inclusion.
- Japan's economy has faced challenges, including a weakening yen and sluggish growth. The IMF projects Japan's growth to be a modest 0.6% in 2025.

Other Side of the Coin

While becoming the fourth-largest economy in aggregate terms is a milestone, however, it is crucial to look at the per capita income figures for a more balanced perspective.

- **India's Per Capita Income:** Despite doubling in the last decade, India's per capita income stands at approximately $2,880.
- **Japan's Per Capita Income:** Japan's per capita income is around $33,400 to $33,900.

While India's total economic output is now larger, the average income per person in Japan is roughly 11 to 12 times higher than in India.

Right To Repair Movement in India

Context

- A committee established by the Department of Consumer Affairs (DoCA) submitted its report, proposing a structured framework for the Repairability Index (RI).

What is the Repairability Index?

- It is a **scoring system designed to inform consumers how easy it is to repair a product.**
- The framework proposes a five-point rating scale, where a higher score indicates that a product is easier to fix. Manufacturers will be required to self-declare this score based on a standardised set of criteria.
- The **evaluation for the RI is based on several key parameters:**
  o **Availability and cost of spare parts:** This assesses how easily and affordably consumers can access genuine replacement parts.
  o **Access to repair information:** This considers whether repair manuals, schematics, and other necessary documentation are available to both consumers and third-party repairs.
  o **Ease of disassembly:** This looks at the complexity of taking the device apart, including the types of tools and fasteners required.
  o **Software updates:** The framework also includes the provision of software and firmware updates to ensure the device remains functional and secure over time.

This score must be displayed at the point of sale, on e-commerce platforms, and via a QR code on the product's packaging. This transparency is intended to help consumers make informed choices, favouring products that are more durable and sustainable.

The **RI draws inspiration from global practices, like France's Repairability Index**, which grades products out of 10 and uses colour codes (green for easy-to-repair, red for difficult).

Dark Patterns

Context

- The Union Minister for Consumer Affairs, Food, and Public Distribution, has identified 13 types of dark patterns to take strong regulatory action.

What are Dark Patterns?

- Dark patterns are **user interface (UI) design tactics that trick or mislead users into making unintended decisions** that often benefit the platform or seller, ultimately eroding consumer trust and choice in the digital marketplace.

Types of dark patterns

- **False Urgency:** Creating an impression of limited stock or time to pressure consumers into making a quick purchase (e.g., "Only 3 items left!").
- **Basket Sneaking:** Secretly adding extra items, such as insurance or donations, to a user's shopping cart without their explicit consent.
- **Confirm Shaming:** Using guilt or shame to steer users away from a particular choice (e.g., "No thanks, I don't want to save money").
- **Forced Action:** Requiring users to perform an unwanted action, like signing up for a newsletter, to access a desired service.
- **Subscription Traps:** Making it simple to sign up for a service but intentionally complicating the cancellation process.
- **Interface Interference:** Obscuring or hiding important information or options, such as cancellation buttons, to guide users toward a preferred choice.
- **Bait and Switch:** Advertising a particular product or service but delivering a different, often inferior, one.
- **Drip Pricing:** Revealing the full price of a product or service only at the very end of the purchasing process, after adding fees and taxes.

- **Disguised Ads:** Presenting advertisements in a way that makes them look like editorial content or user-generated reviews.
- **Nagging:** Persistently repeating requests or interruptions to the point where the user gives in.
- **Trick Questions:** Using confusing or misleading language to trick users into giving an answer they didn't intend.
- **SaaS Billing:** Employing deceptive billing practices for software-as-a-service, such as silent rollovers from free trials to paid subscriptions.
- **Rogue Malware:** Using fake security warnings or virus alerts to frighten users into buying unnecessary software.

Ker Sangri

Context

- Rajasthani Delicacy Ker Sangri Awarded Geographical Indication (GI) Tag.

Ker Sangri is a unique blend of two key ingredients:

- **Ker:** A small, tangy, and sour berry from the Capparis decidua, a hardy desert shrub. The berries are bitter when raw and require careful processing, by soaking them in buttermilk or saltwater to mellow their flavour.
- **Sangri:** The long, slender bean-like pods of the Prosopis cineraria, or Khejri tree. The Khejri is considered a sacred tree and has been protected for centuries by communities like the Bishnois.
- After harvesting and pre-processing, the Ker and Sangri are boiled and then cooked together —traditionally served with bajra roti.

A Nutritional Powerhouse

- It is a powerhouse of nutrition, which contains up to 53% protein, making it one of the richest plant-based protein sources available.
- **Minerals:** It is an excellent source of potassium, magnesium, calcium, zinc, and iron, which are vital for heart health, bone density, and immune function.
- **Phytochemicals:** It contains tannins, flavonoids, and alkaloids, which provide

antioxidant, anti-inflammatory, and antibacterial properties.

Traditionally, Ker Sangri has been used in local medicine to treat a variety of ailments, including gastrointestinal issues, respiratory disorders, and skin conditions.

Foreign Institutional Investors (FII)

Context

- After being net sellers for months, Foreign Institutional Investors (FIIs) have turned into net buyers in the Indian equity market.

About Foreign Institutional Investors (FIIs)

- They are large, foreign-based entities like pension funds, mutual funds, and investment banks.
- They channel capital from abroad into India's financial markets, mainly investing in stocks and bonds.
- They do not manage the companies they invest in; they are purely financial investors seeking returns.

FII v/s FDI

- **FII (Foreign Portfolio Investment):** FIIs invest in financial assets (shares, debentures). Their goal is capital appreciation. This form of investment is often called **"hot money"** because FIIs can enter and exit the market quickly, making it more volatile.
- **FDI (Foreign Direct Investment):** FDI involves a foreign entity making a substantial, long-term investment in an Indian enterprise, by building physical assets or acquiring a stake. It implies a degree of control or management. FDI is considered stable, long-term capital that brings technology and management skills.

Regulatory Provisions

- **SEBI (Securities and Exchange Board of India)** acts as the primary regulator, it registers every FII, ensuring they meet specific criteria.
- **RBI (Reserve Bank of India)** in coordination with the government, sets the macroeconomic policy and investment limits

New Rice Varieties

Context

- The Indian Council of Agricultural Research (ICAR) has successfully developed two new high-performing rice varieties, DRR Dhan 100 and Pusa DST Rice 1.

DRR Dhan 100 (Kamala)

- It is the improved version of **Samba Mahsuri (BPT5204)**. It matures 15-20 days earlier than its parent variety.
- It delivers a 25% higher yield on average and can even touch 9 tonnes/hectare under ideal conditions.
- It is more tolerant to high temperatures and uses water and nutrients more efficiently.
- Its suitability for **Direct Seeding of Rice (DSR),** reduces water consumption, labour costs, and methane emissions associated with traditional paddy cultivation.

Pusa DST Rice 1

- It is developed from **MTU1010 (Cottondora Sannalu)**.
- It is **resistant to high salt and alkaline content in the soil.**
- It provides higher yields in salt-affected soils (up to 30% more)

SPICED

Context

- The SPICED (**S**ustainability through **P**rogressive, **I**nnovative and **C**ollaborative **I**nterventions for **E**xport **D**evelopment) scheme was launched by the Spices Board under the Ministry of Commerce and Industry.

About SPICED Scheme

- It is a holistic ecosystem approach that manages the entire spice value chain, from the farm to the foreign market.
- It places special emphasis on high-value spices like **cardamom**. It **provides financial aid for replanting old, less productive plantations with new, high-yielding varieties.**
- It provides **subsidies for farmers and Farmer Producer Organizations (FPOs)** to purchase modern equipment like mechanical dryers, polishers, and grading machines.

- It supports farmers in obtaining organic certification, and **Geographical Indication (GI) tag.**
- It encourages the development of value-added products like spice oils, oleoresins, curry powders, and ready-to-use spice mixes.
- It **provides financial support for exporters**, especially first-timers and small enterprises, to participate in major international trade fairs like Anuga (Germany) and Gulfood (UAE).
- It funds branding and marketing campaigns to promote Indian spices as a premium, safe, and high-quality brand on the global stage.

Periodic Labour Force Survey (PLFS)

Context

- Labour Force Participation Rate (LFPR) April 2025 bulletin highlights unemployment trends and labour force participation across rural and urban India.

Details

- The **National Statistical Office (NSO) conducts the PLFS** to provide regular and timely data on the workforce.
- It uses the **Current Weekly Status (CWS)** method for its quarterly bulletins, which means it looks at a person's employment activity in the seven days preceding the survey.

Highlights of the April 2025 Report

- **Unemployment Rate (UR):** 5.1% of the people who were looking for a job could not find one. The rate is slightly different for men (5.2%) and women (5.0%).
- **Labour Force Participation Rate (LFPR):** The percentage of the working-age population that is either employed or seeking employment. A national LFPR of 55.6% means a large chunk of the population is out of the labour force entirely (e.g., students, homemakers, discouraged workers).
- **Worker Population Ratio (WPR): 52.8%** of the population is currently employed.
- The female LFPR is low, especially in urban areas. While the urban male LFPR is a robust **75.3%**, the urban female LFPR is a mere **25.7%**. The situation is better in rural areas (38.2%) but still far behind men (79.0%).
- For young women (aged 15–29) in urban areas who want to work, their unemployment rate stands at **23.7%**.
- Rural India reports a lower unemployment rate (4.5%) and a higher Labour Force Participation Rate (58.0%). Urban areas have a higher unemployment rate (6.5%).

Jute Corporation of India (JCI)

Context

- The Jute Corporation of India (JCI) has increased the Minimum Support Price (MSP) for raw jute to ₹5,650 per quintal for the 2025-26 season.

About Jute

- Jute is a **natural, biodegradable fibre extracted from the stem of the Corchorus plant**. It is noted for its strength and versatility, earning it the nickname "the golden fibre."
- It requires a **hot and humid climate (24°C–37°C).**
- It is a water-intensive crop, needing 1,000–2,000 mm of annual rainfall.
- It grows best in fertile, well-drained alluvial soil, and river deltas like the Ganges-Brahmaputra delta.
- It is a **Kharif crop**, sown before the monsoons and harvested during them.
- Jute is an eco-friendly crop.
- One hectare of jute consumes about 15 tonnes of CO_2 and releases 10 tonnes of oxygen during its growth cycle.
- It enhances soil fertility, making it excellent for crop rotation.
- It is a perfect sustainable alternative to single-use plastics and other synthetic materials.

> The government supports the industry through the **Jute Packaging Materials Act**, which mandates that 100% of food grains and 20% of sugar must be packed in jute bags.

About Jute Corporation of India (JCI)

- **Established in 1971 under the Ministry of Textiles**, its core function is to act as a **price support agency**.
- It procures raw jute directly from farmers at the MSP, fixed by the central government based on the recommendations of the **Commission for Agricultural Costs and Prices (CACP)**.

3.2 SNIPPETS

Topics	Details
MSP for Kharif Crops	• The Cabinet Committee on Economic Affairs (CCEA), chaired by the Prime Minister, has approved an increase in the Minimum Support Prices (MSP) for 14 Kharif crops for the 2025-26 marketing season. • Kharif crops are **sown at the beginning of the monsoon season and harvested before the winter season.** These include essential staples like rice (paddy), maize, and millets, along with pulses and oilseeds. • MSP is a form of market intervention by the Government to insure agricultural producers against any sharp fall in farm prices. • The **Commission for Agricultural Costs and Prices (CACP) recommends MSPs for 23 crops,** and the final decision is made by the CCEA.
Moringa	• Moringa, specifically the high-yielding PKM-1 variety, is generating a global impact. • India dominates the global moringa market, **fulfilling over 80% of the worldwide demand, with Tamil Nadu leading this production**. • Moringa oleifera, or the drumstick tree, is a plant where every part holds value. Its **leaves are packed with more Vitamin C than oranges, more calcium than milk, and more iron than spinach.** • For centuries, traditional medicine has used its leaves, seeds, and roots for various medicines.
WAM! and WAVES 2025	• The Ministry of Information and Broadcasting launched WAVES Summit 2025, with WAM!, as the key component in Mumbai from May 1–4, 2025. • World Audio-Visual & Entertainment Summit (WAVES) is a global summit to boost India's Animation, Visual Effects, Gaming, Comics, and Extended Reality (AVGC-XR) industry. • The **summit operates under the theme: "Create in India, Create for the World."** • WAM! (WAVES Anime & Manga Contest) is India's first formal, large-scale initiative to discover and nurture creators of original Indian anime, manga, and webtoons.
Insider Trading	• The Securities and Exchange Board of India (SEBI) is investigating allegations of insider trading against Pranav Adani. • Insider trading is the **illegal practice of trading on the stock exchange through having access to confidential information.** • **The "Insider"** can be anyone who possesses or has access to critical, non-public information. • SEBI has the power to punish violators. It can impose a penalty of up to ₹25 crore or three times the amount of profits made from the illegal trade, whichever is higher, and **can also refer the case for criminal prosecution,**

	which can lead to imprisonment.
Opinion Trading	• The Securities and Exchange Board of India (SEBI) issued a warning that opinion trading platforms are not registered or regulated by the government. • Opinion trading is a form of **financial betting packaged to look like a legitimate investment activity, where users place money on their chosen outcome ("Yes" or "No") and place their stake if their prediction is correct.** • The central issue is that these platforms operate in a grey area of the law, exploiting a regulatory gap. SEBI's mandate is to regulate "securities," but the yes/no propositions offered on these platforms do not fit neatly into the traditional definition of security. • The platforms argue they are "games of skill," as users might use analysis or knowledge to make predictions. However, since the outcomes often depend on chance, they bear a strong resemblance to gambling.
Orange Economy	• The Orange Economy is gaining prominence as India strategically positions itself as a global leader in this creative-driven sector. • The **Orange Economy, also known as the "creative economy," is an evolving economic model that includes all sectors whose goods and services are based on creativity**, artistic expression, and intellectual property (IP). • It is about turning ideas into economic value. It moves beyond traditional manufacturing and agriculture to focus on knowledge-based activities that generate wealth and jobs through individual skill, talent, and cultural heritage.
Transshipment	• PM Modi inaugurates Vizhinjam Port (Kerala), India's first deepwater transhipment hub, boosting maritime trade and reducing logistic dependence on foreign ports. • Transshipment is a **process where large "mother vessels," which are too big to dock at smaller ports, unload their containers at a major hub.** These containers are then loaded onto smaller "feeder vessels" that transport the cargo to their final destinations. • **About 75% of India's transhipment cargo was handled by foreign ports**, mainly Colombo in Sri Lanka, also Singapore and Jebel Ali (Dubai). • It added an extra $80-100 per container to logistics costs for Indian traders and resulted in an estimated annual revenue loss of $200-220 million for the country.
Predatory Pricing	• The Competition Commission of India (CCI) has updated its rulebook to identify and prosecute companies for predatory pricing. • Predatory pricing is an **anti-competitive strategy where a dominant firm deliberately sets the price of a product or service at a very low level**, often below its own cost of production, with the specific intent of eliminating competitors from the market. • **Once competitors are driven out, the dominant firm can raise prices to monopoly levels** to recoup its earlier losses and earn supernormal profits. • It is prohibited under the Competition Act, 2002. • The Competition Commission of India (CCI) is the statutory body responsible for investigating and prosecuting cases of predatory pricing.

Asian Productivity Organization (APO)	• India has taken over the chairmanship of the Asian Productivity Organization (APO) for the 2025-26 period. • The **APO was established in 1961 with the goal of improving productivity** and accelerating economic development in the Asia-Pacific. • It's **headquartered in Tokyo** and comprises 21 member economies. • It organizes workshops, funds research, and conducts training programs to help its members learn from each other. • **India became a founding member of APO in 1961**, establishing a long-term commitment to regional productivity enhancement.

Central Equipment Identity Register (CEIR) Portal	• Telangana has emerged as the top-performing state for recovering stolen and lost mobile phones through the Central Equipment Identity Register (CEIR) portal.
	• CEIR is a **centralised technology-driven system designed to combat mobile phone theft** and the circulation of counterfeit devices.
	• Every mobile phone has a unique 15-digit **International Mobile Equipment Identity (IMEI)** number. The CEIR system is built around tracking and controlling devices through this unique IMEI.
	• The CEIR database categorises every phone's IMEI into one of three lists:
	  o **White List** contains the IMEIs of all legally sold and valid mobile phones. These devices are allowed to function on any network without issue.
	  o **Grey List** includes devices that are valid but are under observation. This could be due to duplicate IMEIs or other irregularities that require monitoring.
	  o **Black List** contains the IMEIs of all phones that have been reported as stolen or lost. Once an IMEI is on the Black List, the device is blocked from accessing any mobile network across India.

Janasu Tunnel	• India's longest rail tunnel, Janasu Tunnel (T-8), is nearing completion in Uttarakhand. • The Janasu Tunnel is a 14.57-kilometer-long railway tunnel currently **under construction in Uttarakhand. Once completed, it will be the longest railway tunnel in India.** • It is a twin-tube tunnel, consisting of two parallel tunnels—one for the up-track and one for the down-track. • The tunnel connects the towns of Devprayag and Janasu in Uttarakhand. • It is part of the 125-km Rishikesh-Karnaprayag Broad Gauge Rail Link Project.
Indian Institute Of Creative Technology (IICT)	• The Union government launched the Indian Institute of Creative Technology (IICT) in Mumbai to boost India's creative and digital industries. • The core idea is to create an institution for the creative technology sector that commands the same prestige, academic rigour, and global recognition as the Indian Institutes of Technology (IITs) for engineering and the Indian Institutes of Management (IIMs) for business. • The project has been launched with an initial investment of ₹400 crore from the Union Government. The Maharashtra government has provided land at Mumbai Film City.

GS1	• GS1 will launch next-gen QR codes globally from 2027, aiming for transparency and digital transformation. • GS1 is a global, non-profit organisation that created and maintains the standards for barcodes. • The barcode we see on products, **first introduced in 1974, stores the product's unique identification number**, used to look up details like price in a store's database. • GS1 is leading a global initiative called **"Sunrise 2027"** to transition the retail world from traditional barcodes to advanced, data-rich QR codes. • A traditional barcode can be scanned and opened by only a retailer. The **new GS1-powered QR code can be accessed by anyone with a smartphone.**

3.3   ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
INDIA'S SHAME — THE TRAP OF BONDED LABOUR	6th May, 2025
INDIA FRAMES RULES FOR STARLINK, OTHERS	8th May, 2025
SPROUTING SUSTAINABLE, NUTRITION-SENSITIVE FOOD SYSTEMS	12th May, 2025
OPENING UP OF CIVIL NUCLEAR SECTOR	21st May, 2025
EXAMINING THE RBI'S REMITTANCES SURVEY	30th May, 2025
IN INDIA EDUCATION WITHOUT EMPLOYMENT	15th May, 2025
INDIA'S FINANCIAL SECTOR REFORMS NEED A SHAKE-UP	30th May, 2025
CONCESSIONAL LOAN SCHEME FOR MEDIUM-SIZED FIRMS	28th May, 2025

4. DEENSE & SECURITY

4.1   OPERATION SINDOOR

Context

- The operation Sindoor was launched in retaliation for the **Pahalgam terror attack** where Pakistani terrorists targeted innocent civilians. Targeted **21 terror camps** across **nine locations** in **Pakistan and Pakistan-Occupied Kashmir**.

Objective

- Deliver justice for victims of terror.
- Destroy terror infrastructure operated by groups like **Jaish-e-Mohammed (JeM)**, **Lashkar-e-Taiba (LeT)** and **Hizbul Mujahideen**
- Dismantle Pakistan's narrative of plausible deniability via proxy terror groups.

Features of the Operation

- **Precision Strikes**: Conducted using advanced long-range precision-guided munitions.
- **Minimal Collateral Damage**: Use of niche-technology weapons with carefully selected warheads.

India's Precision-Guided Long-Range Arsenal

1. **HAMMER (Highly Agile and Manoeuvrable Munition Extended Range)** Air-to-ground precision-guided bomb
2. **SCALP-EG (Storm Shadow)** Long-range air-launched cruise missile
3. **METEOR** Beyond Visual Range Air-to-Air Missile (BVRAAM)
4. **BRAHMOS** Supersonic cruise missile
5. **LOITERING MUNITIONS (Kamikaze Drones)**

Strategic Implications of Operation Sindoor

- **Shift in Strategic Posture**: Goes beyond retaliating for a single incident (Pahalgam). Targets permanent and ideological centres of terror over two decades.
- **Precision Without Escalation**: India targeted **non-military assets** to maintain **escalation control**. Avoided direct hits on Pakistani military infrastructure.
- **Extension of Operational Depth**: Unlike 2016 (Uri) and 2019 (Balakot), strikes in Sindoor went **deeper into Pakistani territory**, crossing both LoC and International Border.

Diplomatic and Legal Dimensions

- **Deterrence Messaging**: Challenges Pakistan's assumed immunity behind nuclear posturing. Reinforces India's right to self-defence under Article 51 of UN Charter.
- **FATF and Terror Accountability**: Operation Sindoor indirectly highlights Pakistan's superficial compliance with **FATF obligations**. References to terrorists like **Sajid Mir** underline the duplicity of Pakistan's counter-terror claims.

Comparative Analysis with Past Operations

Parameter	Surgical Strikes (2016)	Balakot Strikes (2019)	Operation Sindoor (2025)
Trigger	Uri attack	Pulwama attack	Pahalgam attack
Targets	LoC terror camps	JeM camp in Balakot	21 camps in PoK + Pakistan heartland
Depth	Cross-LoC	Cross-IB, shallow depth	Deep inside Pakistan
Weapons Used	Conventional arms	SPICE 2000	HAMMER, SCALP, BrahMos, Loitering munitions

India's Military Response under International Law

Aspect	Details
UN Charter – Use of Force	**Article 2(4):** Prohibits use of force against territorial integrity or political independence. **Article 51:** Permits self-defence if an **armed attack occurs**, until UNSC intervenes.
Reporting to UNSC	States must **immediately report** self-defence actions to UNSC. India briefed **13 of 15 members** (excluded Pakistan & Sierra Leone).
Self-Defence vs. Non-State Actors	**Traditional View:** Article 51 applies only to attacks by or on behalf of **states**. **ICJ Cases:** *Nicaragua v. USA (1986)* & *DRC v. Uganda (2005)* reinforced this.
India's Attribution Strategy	Blamed **Pakistan-trained terrorists**; cited **Pakistan's support** for cross-border terror to establish **state attribution**.
'Unwilling or Unable' Doctrine	Allows force against non-state actors in another state if the host is **unwilling/unable** to act. **Used by U.S.:** Osama bin Laden (2011), ISIS in Syria (2014).
India's Position on the Doctrine	**Ambiguous but evolving.** At 2021 UNSC Arria Formula meeting, India proposed 3 conditions: 1. Repeated armed attacks by non-state actors 2. Host state unwilling to act 3. Host state actively supports attackers
Customary Law Status	Doctrine is **contested**; lacks consistent **state practice** & **opinio juris** to be part of **customary international law**.
Principle of Necessity	Force used only if **no peaceful alternatives** exist. **Pakistan's inaction** may justify necessity.
Principle of Proportionality	Force must match **threat level**. **Narrow view:** Repel current attack **Broad view:** Prevent future attacks
India's Compliance	Targeted **terror camps**, avoided **military/civilian sites** in Pakistan. Likely satisfied both **necessity** and **proportionality**.

4.2   SHORT ARTICLES

Trends in World Military Expenditure Report 2024

Context
- According to the 2024 edition of the Trends in World Military Expenditure report by the Stockholm International Peace Research Institute (SIPRI) India's military spending was nearly nine times higher than Pakistan's last year.

SIPRI
- SIPRI is a globally reputed Swedish think tank that tracks global arms transfers, disarmament and military expenditures.
- The report is published **annually** and provides **data-driven analysis** of global and regional trends in **military spending**.

Highlights of the 2024 Report
- **Global Military Expenditure**
- **Total Global Spending (2024): $2.46 trillion**, up from **$2.24 trillion in 2023**.
- **Share of Global GDP: 2.3%** (Earlier: 1.6% in 2022, 1.8% in 2023).

- **Increase across all regions** — attributed largely to geopolitical tensions and ongoing wars.

Top Military Spenders (Share of Global Spending)

Country	Share (%)	Country	Share (%)
USA	37%	Germany	3.3%
China	12%	**India**	3.2%
Russia	5.5%		

- These five countries account for **60% of global military expenditure**.

India's Position in 2024

Indicator	Value	Indicator	Value
Rank	5th	Growth since 2014	↑ 42%
Military Spending (2024)	**$86.1 billion**	Compared to Pakistan	~9 times higher
Growth from 2023	↑ 1.6%		

Inter-Services Organisations (Command, Control & Discipline) Act, 2023: Rules Notified

Context

- The **Government of India** has **notified the rules** under the **Inter-Services Organisations (Command, Control & Discipline) Act, 2023** to enable smoother disciplinary and administrative control across **joint military commands**.

Background

- The **Act** was passed during the **Monsoon Session of Parliament in 2023**. Received **Presidential assent on August 15, 2023**.
- **Came into force** on **May 10, 2024** with designated **Inter-Services Organisations** notified in **December 2024**.
- The newly notified **rules under Section 11** provide a framework for implementation.

Provisions of the Rules (2025)

Feature	Description
Authority Granted	Full **disciplinary and administrative powers** to **Commanders-in-Chief**, **Officers-in-Command**, and **Commanding Officers** of ISOs over all service personnel (army, navy, air force) under their command.
Cross-Service Jurisdiction	Officers may exercise authority over **personnel from different services** without altering their **respective service conditions**.
Continuity of Command	If the senior officer is **on leave or absent**, a replacement is officially named in the unit's orders.
Emergency Situations	In absence of an order, the **next higher formation** can **appoint a temporary officer-in-charge** until formal notification.
Service-Specific Compliance	Authority must be exercised **in line with existing Service Acts, rules, or regulations** applicable to each individual (Army Act, Navy Act, Air Force Act).
Administrative Efficiency	Aims to **prevent delays**, **avoid duplication** and **streamline command and control** within joint commands.

Ceasefire

Context

- India and Pakistan recently agreed to a **ceasefire** following military escalations along the Line of Control. The agreement was reached through a **DGMO-level communication** and included stopping **all military action from land, air and sea**.

What is a Ceasefire?

- According to *The Practical Guide to Humanitarian Law* by Françoise Bouchet-Saulnier: A ceasefire is an agreement that regulates the termination of all military activity for a given length of time in a given area.
- **Characteristics**
  - Temporary suspension of hostilities (a truce) not a peace treaty.
  - Applicable to both **international and non-international armed conflicts**.
  - Does **not end the legal state of war**.

Ceasefire vs Truce vs Armistice vs Peace Treaty

Term	Nature	Legally Binding?	Ends Hostilities?	Ends State of War?
Ceasefire	Temporary suspension	Not always	Yes	No
Truce	Synonym of ceasefire	No	Yes	No
Armistice	Formal suspension	Yes	Yes	No
Peace Treaty	Formal agreement to end war	Yes	Yes	Yes

4.3 SNIPPETS

ORGANISATIONS/BODIES IN NEWS	
Topics	**Details**
Multi-Agency Centre	• **Union Home Minister inaugurated the revamped Multi-Agency Centre at North Block, New Delhi.** • The **MAC** is a **centralised intelligence-sharing platform** housed within the **Intelligence Bureau**. • Initially conceptualised in **2001 post-Kargil war** the MAC has now been upgraded with advanced technological and structural enhancements at a cost of **₹500 crore**. • **Enhances inter-agency coordination** to tackle terrorism, extremism, organised crime and cyber threats. • Provides a **real-time, secure communication network** to share actionable intelligence across the country. • Enables **integrated decision-making** and **swift operational responses** by linking 28 national and state-level organisations.

MISSILES IN NEWS	
Topics	**Details**

Golden Dome	• The announcement of the **Golden Dome missile defence shield** by U.S. President **Donald Trump** marks a potentially revolutionary leap in the militarization of space and the evolution of missile defence systems.
	• Modeled loosely after Israel's Iron Dome this $175-billion project with an **ambitious deadline of 2029** aims to create a **space-integrated, multi-domain defence architecture**.
	• The Golden Dome is envisioned as a **comprehensive missile defence shield** that utilizes:
	  ○ **Space-based sensors**
	  ○ **Satellite-launched interceptors**
	  ○ **Land and sea-based radar and tracking systems**
	• Includes the deployment of **thousands of small satellites** capable of early detection and interception.

RS 24 Yars Icbm	• **RS-24 Yars** has recently drawn global attention due to its planned launch amidst the ongoing Ukraine conflict. • The **RS-24 Yars** with NATO designation: **SS-29** is a **Russian MIRV-capable intercontinental ballistic missile** that entered service in **2010**. • Developed by the Moscow Institute of Thermal Technology it is intended to **replace aging Soviet-era missiles** like the **SS-18 Satan** and **SS-19 Stiletto**.
AIM-120C-8 AMRAAM	• The **AIM-120C-8 AMRAAM (Advanced Medium-Range Air-to-Air Missile)** is a state-of-the-art, beyond-visual-range missile developed by **Raytheon Technologies** USA. **Type** • Beyond Visual Range Air-to-Air Missile (BVRAAM), also capable as SAM **Length & Weight** • 12 feet; 162 kg **Speed** • Mach 4 **Range** • >160 km (under optimal launch conditions) **Guidance System** • Inertial Navigation, GPS correction, Active Radar Homing, Two-way datalink **Warhead** • 18.1 kg High-Explosive Blast Fragmentation with Proximity Fuse **Deployment Platforms** • F-16, F-15, F/A-18, F-22, F-35, Eurofighter Typhoon, NASAMS (SAM) **Capability** • "Fire-and-forget," multiple target engagement, ECM resistance
Ghassem Basir Missile	• In April 2025 Iran unveiled a new solid-fuel medium-range ballistic missile named **Ghassem Basir**. This development is part of Iran's ongoing efforts to modernize its missile arsenal amid regional tensions and international sanctions. **Range** • Over 1,200 kilometers **Length** • Approximately 11 meters **Weight** • Around 7 tons **Warhead Capacity** • Estimated 500 kilograms **Speed** • Up to Mach 12 **Propulsion** • Solid-fuel engine **Airframe Material** • Carbon fiber composites for reduced weight and radar cross-section **Guidance System** • Terminal guidance using thermal imaging sensor **Reentry Vehicle** • ManeuverableReentry Vehicle (MaRV) for evasive reentry **Launch Platform** • Mobile Transporter-Erector-Launchers including disguised civilian trucks

PL-15 MISSILE	• A **fully intact Chinese-made PL-15 long-range air-to-air missile** was recently **recovered in Hoshiarpur, Punjab** amid rising tensions between **India and Pakistan**. **Full Name** • PL-15 (Thunderbolt-15) **Type** • Beyond Visual Range Air-to-Air Missile (BVRAAM) **Origin** • People's Republic of China **Developer** • 607 Institute **Manufacturer** • China Aerospace Science and Industry Corporation **Purpose** • To engage and destroy enemy aircraft at long distances beyond visual range
Akash Missiles	• **Akash Missile System** is an indigenously developed **surface-to-air missile** system by the **Defence Research and Development Organisation.** • Recently Akash played a **crucial role in thwarting Pakistan's aerial offensive** during *Operation Sindoor*. • **Operational Relevance** **Akash (Original)** • 30 km range, standard radar-guided • First-generation; operational with Army & IAF **Akash Prime (2021)** • Better performance in **low-temperature, high-altitude** areas; has **RF seeker** • Secures **high-altitude critical infrastructure** **Akash-NG (New Gen)** • **Range: 70 km**, lightweight, **canisterised**, low radar signature interception • For **high-manoeuvrability aerial threats**; suited for stealth era warfare
Minuteman III	• The United States Air Force recently conducted a successful test launch of the nuclear-capable Minuteman III Intercontinental Ballistic Missile which can deliver a nuclear warhead to anywhere on Earth. • The **Minuteman III (LGM-30G)** is a **nuclear-capable Intercontinental Ballistic Missile** developed by the United States. • It is the **sole land-based component** of the U.S. nuclear triad alongside submarine-launched ballistic missiles and strategic bombers.
Invar Missile	• The **Ministry of Defence** is finalising a procurement deal with **Bharat Dynamics Ltd.** for **500 Invar missiles** worth **Rs 2,000–3,000 crore**. **Origin** • Russia (Rosoboronexport) **Platform** • Fired from the **125 mm smoothbore gun** of **T-90 tanks** **Guidance System** • **Laser beam riding, semi-automatic control, jamming immune** **Warhead** • **Tandem HEAT (High Explosive Anti-Tank)** **Capability**

	• Can defeat tanks with **Explosive Reactive Armour (ERA)** **Target Profile** • Stationary and moving targets up to 70 kmph **Hit Probability** • High accuracy and kill probability **Range** • Up to **5 km**

EXERCISES IN NEWS	
Topis	**Details**
Exercise Balikatan 2025	• Missiles fired off the coast of the northern Philippines on Sunday as U.S. and Filipino forces conducted their first integrated defence drills, after China said it had seized control of a reef claimed by Manila. **Edition** • 40th **Countries** • Primarily United States and the Philippines (with observers/participants from other allies) **Objective** • To enhance military interoperability and readiness to defend Philippine sovereignty **Theme for 2025** • Simulation of a **full-scale battle scenario** **Special Features** • Full Battle Test incorporating real-world forces and events into virtual and constructive scenarios **Domains Covered** • Air, Land, Sea, Space, Cyber
Golden Dragon 2025	• The **Golden Dragon 2025** is the **largest-ever bilateral military exercise** between **Cambodia and China** focusing on **counter-terrorism** and **humanitarian operations**. • It highlights **China's expanding strategic footprint in Southeast Asia** and reflects a larger geopolitical contest in the **Indo-Pacific**. **Initiated In** • 2016 **Nature** • Annual bilateral military drill **Objective** • Strengthening military cooperation, capacity-building and peacekeeping **Theme (2025 Edition)** • Joint counter-terrorism operations and humanitarian relief **Location (2025)** • Ream Naval Base, Sihanoukville, Cambodia • Located near the **Gulf of Thailand** offering **strategic maritime access** to China. **Strategic Significance** • Expansion of Chinese military and naval influence in Southeast Asia. • Coincides with the **US–Philippines-led Balikatan exercise** involving the **USA, Philippines, Australia and Japan**.

	• Seen as a **counter-narrative** to the growing Indo-Pacific security alliance.
Exercise Teesta Prahar	• The **Indian Army** recently conducted a large-scale integrated field training exercise named **Exercise Teesta Prahar** at the **Teesta Field Firing Range** in **West Bengal** close to the strategically significant **Siliguri Corridor**. • Included **combat arms** (Infantry, Armoured, Artillery) and **support arms** (Engineers, Signals, Army Aviation). • **Para Special Forces** and **Mechanised Infantry** played a significant role in tactical drills. • Showcased **next-generation weapon systems** and **newly inducted military platforms**.

WEAPONS IN NEWS	
Topics	**Details**
HAROP	• The **HAROP** is a **loitering munition** also called a kamikaze drone or suicide drone developed by **Israel Aerospace Industries**. • It gained attention recently when India reportedly used it to **neutralise an air defence system in Lahore** during retaliatory strikes under *Operation Sindoor*. **Type** • Loitering Munition / Unmanned Combat Aerial Vehicle **Manufacturer** • Israel Aerospace Industries **Primary Use** • SEAD (Suppression of Enemy Air Defences), High-value target elimination **Endurance** • Up to **9 hours** of loitering capability **Guidance** • Electro-optical sensor for visual target recognition; **autonomous** or **operator-controlled** **Launch Platform** • Canister-based launch; deployable from **trucks**, **ships**, or **ground stations** **Navigation** • GNSS-jamming resistant, allowing operations in contested electronic warfare environments **Warhead Delivery** • Direct impact – drone crashes into target with explosive payload **Mission Success Rate** • Claimed 98% effectiveness in combat by IAI
Songar Drones	• In a **recent security incident** Pakistan allegedly attempted a **mass drone incursion** using **300–400 Songar drones** at **36 locations** across India's western border—from **Leh to Sir Creek**. **Origin** • Turkey **Developer** • **Asisguard**, a Turkish defence company **Launch Year** • First introduced: **April 2019** • Inducted into Turkish Armed Forces: **February 2020** **Significance**

	• **First indigenously developed armed drone** system of Turkey **Category** • Armed **Unmanned Aerial System**
Himars Rocket System	• Taiwan recently conducted its **first live-firing** of the **U.S.-supplied HIMARS**, highlighting its growing emphasis on self-defence amid tensions in the Taiwan Strait. **Full Name** • **High Mobility Artillery Rocket System (HIMARS)** **Type** • **Lightweight, multiple rocket launcher system** **Manufacturer** • **Lockheed Martin Corporation**, USA **Purpose** • Engage and defeat **artillery, air defence systems, light armour, vehicles, and troop concentrations** **Users** • Widely used by **U.S., NATO allies**, and recently supplied to **Taiwan and Ukraine**
Bhargavastra	• **Bhargavastra** is India's first **indigenously developed micro-missile-based counter-drone system**. • It is a significant technological step to **address emerging threats from low-cost drone swarms** especially amid rising border tensions. • Developed by **Solar Defence and Aerospace Limited** in collaboration with **Economic Explosives Ltd**. **Type** • Micro-missile-based counter-drone air defence system **Range (Detection)** • Capable of detecting small drones beyond **6 km** **Range (Engagement)** • Effective engagement beyond **2.5 km** **Firing Capability** • Simultaneous launch of over **64 micro missiles** **Deployment** • **Mobile platform-mounted**, allowing rapid deployment **Versatility** • Operable across various terrains including **high-altitude regions** **Salvo Firing Mode** • Proven ability to fire multiple missiles within seconds **Guidance** • Uses **guided micro munitions** to neutralize targets precisely

INDIAN AIRCRAFTS/VESSELS/SHIPS IN NEWS	
Topics	**Details**

INS Tamal	• Induction of INS Tamal amid rising India-Pakistan tensions post the **Pahalgam terror attack (2025)**. Part of the **$2.5 billion India-Russia deal** for four stealth frigates. • Stealth guided missile frigate. • **Class:** Upgraded Krivak-III class (Project 11356). • Constructed in Russia. • **Second vessel** of its class after **INS Tushil** (commissioned December 2024). • **Final imported warship**; all future frigates to be domestically produced under *Atmanirbhar Bharat Abhiyan*.
INS Brahmaputra	• The frigate suffered major damage in a 2023 dockyard accident and is now undergoing restoration; it is expected to regain seaworthiness by end-2025 and be fully combat-ready by mid-2026. • INS Brahmaputra is a frontline **indigenously built guided missile frigate** of the Indian Navy. • Built by: **Garden Reach Shipbuilders and Engineers (GRSE), Kolkata** • Commissioned on: **April 14, 2000** • Class: **Brahmaputra-class frigate** • Preceded by: Godavari-class frigates • It is the first in a series of three ships in its class, followed by INS *Beas* and INS *Betwa*.
AMCA	• The **Advanced Medium Combat Aircraft (AMCA)** is India's flagship fifth-generation stealth fighter program developed to bolster the Indian Air Force's future combat capabilities. **Class** • 25-tonne fifth-generation stealth multirole fighter **Engines** • Mk-1: GE F414; Mk-2: To be co-developed with Safran (France) **Stealth Features** • Internal weapons bay, RAM coating, diverterless supersonic intake (DSI) **Weapons Payload** • Internal: 1,500 kg; External: 5,500 kg **Fuel Capacity** • Internal: 6,500 kg **Technology** • AI-enabled avionics, AESA radar, sensor fusion, supercruise **Multirole Capabilities** • Air superiority, deep strike, electronic warfare, suppression of enemy air defences (SEAD)

CONVENTIONS/TREATIES/ OPERATIONS IN NEWS	
Topics	**Details**
Mission Sankalp	• In April 2025 the Indian government launched **Mission Sankalp** a massive anti-Naxal operation in the **Karregutta hills** on the **Chhattisgarh–Telangana border** aiming to dismantle the last major bastion of CPI (Maoist) in Bastar. **Forces Involved** • Approx. 24,000 security personnel including CRPF, DRG, and state police **Main Objective**

	• Dismantle PLGA Battalion 1; neutralize top Maoist leadership **Strategic Goal** • End Maoist dominance in Bastar and further weaken the LWE ecosystem

PLACES IN NEWS	
Topics	**Details**
Bagram Airfield	• With its current control under the **Taliban** Bagram's future has again emerged in the global discourse particularly following claims by former US President Donald Trump regarding **Chinese presence** at the base claims that the Taliban have officially denied. • Bagram Airfield Afghanistan's largest military base holds immense geopolitical and strategic value in the heart of Asia. • Originally built by the **Soviet Union in the 1950s** it later became a centerpiece of both Soviet and American military operations. **Geographic and Strategic Significance** **Location** • 60 km north of Kabul in Parwan province **Connectivity** • Near Salang Tunnel linking North to South Afghanistan **Area** • Over 77 km2 (expanded by the US post-2001) **Strategic Access** • Proximity to key regions – Kabul, Mazar-e-Sharif, Kandahar, Bamiyan

CYBERSECURITY IN NEWS	
Topics	**Details**
Cybercrime Centre I4C Under PMLA	• The **Revenue Department** under the **Ministry of Finance** issued a notification bringing the **Indian Cyber Crime Coordination Centre (I4C)** under **Section 66** of the **Prevention of Money Laundering Act**. **Established by** • Ministry of Home Affairs **Year, Headquarters** • 2018, New Delhi **Objective** • To act as a national-level nodal agency to tackle cybercrime in a coordinated and comprehensive manner **Key Activities** • Prevention, detection, investigation, prosecution of cybercrimes **Major Focus Areas** • Crimes against women, children; financial frauds; ransomware; cyber hygiene awareness **Technology Integration** • Early warning systems, cyber forensic support, research and development of indigenous tools

MISCELLANEOUS	
Topics	**Details**
Ship Flags	• In the aftermath of the Pahalgam terror attack India's **Directorate General of Shipping** issued a ban on the entry of **Pakistan-flagged ships** into Indian ports under **Section 411 of the Merchant Shipping Act, 1958**. • A ship's flag indicates the **country of registration** or the **flag state** not necessarily the **owner's or crew's nationality**. • According to the **International Maritime Organization** a ship's registration links it to a state which exercises jurisdiction over it. **Functions of a Flag** **Legal Jurisdiction** • The flag state has the right and duty to exercise control over the ship under international law. **Safety and Standards** • The flag state enforces compliance with international standards like safety, environmental protection, and labor laws. **Nationality** • Grants nationality to the vessel; the ship is considered an extension of the territory of the flag state. **Crew Protection** • In case of accidents or disputes, legal remedies are provided under the flag state's laws.

4.4 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topics	Date
HOW AIR DEFENCE SYSTEMS WORK	11 May 2025
CYBER BULLYING UNDER INDIAN LAW	21 May 2025

5. ECOLOGY & ENVIRONMENT

5.1   SHORT ARTICLES

Access and Benefit Sharing: New Rules

Context

- The concept of Access and Benefit Sharing is rooted in the **Convention on Biological Diversity 1992** which India ratified in 1994.
- In line with this the **Biological Diversity (Access to Biological Resources and Knowledge Associated thereto and Fair and Equitable Sharing of Benefits) Regulation 2025** was notified by the **National Biodiversity Authority** under the amended **Biological Diversity Act, 2002 (as amended in 2023)**.

Salient Features of the 2025 Regulation

- **Turnover-Based Benefit Sharing Slabs**

Annual Turnover	Benefit Sharing Requirement
Up to ₹5 crore	Exempt from benefit sharing
₹5 crore – ₹50 crore	0.2% of annual gross ex-factory sale price (excluding taxes)
₹50 crore – ₹250 crore	0.4%
Above ₹250 crore	0.6%

- Companies with turnover over ₹1 crore must **submit a yearly statement** of biological resources used.

Inclusion of Digital Sequence Information (DSI)

- Unlike the **2014 Guidelines** the 2025 regulation includes **Digital Sequence Information** within the scope of benefit sharing.
- Recognizes that DSI can substitute for physical biological material in research and development.

Exemptions & Cultivated Plant Use

- **Cultivated medicinal plants** are exempt from benefit sharing.
- Products with **mixed composition (cultivated + wild)** are exempt **if notified** by the **MoEFCC in consultation with AYUSH**.
- This aligns with the **Biological Diversity (Amendment) Act 2023** which promoted the **cultivation of medicinal plants** and exempted **Indian medicine practitioners** from taking approvals or sharing benefits.

High-Value Biological Resources

Resource Type	Minimum Benefit Sharing
Red sanders, sandalwood, agarwood, threatened species	Minimum 5% of auction/sale value
Commercial Use	May go **beyond 20%** based on value

Provisions for Researchers and IPR Applicants

- Researchers and entities seeking **Intellectual Property Rights** using biological resources are required to:
  - Share benefits as per guidelines.
  - Comply with **pre-approval and post-use reporting**.
- NBA to retain **10–15%** of total benefits collected for administrative purposes.

India's Draft Climate Finance Taxonomy

Context

- In May 2025 the **Finance Ministry of India** released the **draft document titled Framework of India's Climate Finance Taxonomy.** Announced during the **Union Budget 2024-25** by Finance Minister **Nirmala Sitharaman**.

Objectives of the Climate Finance Taxonomy

- **Classify** economic activities as **climate supportive** or **climate transition**.

- Facilitate **green investments** and **prevent greenwashing**.
- Align with the vision of **"Viksit Bharat @2047"** and India's **climate commitments under the Paris Agreement**.
- Serve as a **guiding tool** for investors, banks and regulators to direct funds into sustainable sectors.

Features of the Draft Taxonomy

Feature	Details
Definition	A system to identify economic activities that align with climate goals.
Classification	1.**Climate Supportive Activities**: Direct mitigation/adaptation impact. 2. **Climate Transition Activities**: Indirect or enabling impact in high-emission sectors.
Sectors Covered	Power, Buildings, Mobility, Agriculture, Food, Water Security.
Focus Technologies	Advanced Ultra Super Critical (AUSC) thermal power, low-emission cement/steel production, etc.
Adaptation Financing Needs	₹56.68 trillion (~USD 648.5 billion) till 2030 for agriculture, forestry, infrastructure, water, etc.

Global Status of 2035 NDC Submissions

Context

- Only 15 countries met the February 10, 2025 deadline of 2035 NDC Submissions with the number increasing to 21 by May 2025.
- This represents approximately 11% of the total raising concerns about global commitment to climate action ahead of the COP30 summit scheduled for November 2025 in Brazil.

Details

- Countries that have submitted include the United Kingdom, Canada, Japan, Brazil, Kenya, New Zealand, Singapore and the United Arab Emirates.
- Significant emitters such as China, India and the European Union have yet to submit their updated NDCs.
- Amongthe submitted NDCs only the United Kingdom's plan is considered compatible with limiting global warming to 1.5°C according to Climate Action Tracker.
- India did not meet the February 10, 2025 deadline for submitting its updated NDC for 2035.

Reasons for Delay

- **Climate Finance Shortfall:** At COP29 in Baku developed countries committed to mobilizing only $300 billion annually in climate finance starting from 2035 falling short of the $1 trillion per year demanded by developing nations including India. This shortfall has been cited as a reason for India's delayed submission.
- **Strategic Timing:** India plans to host COP33 in 2028 and may be reserving more ambitious climate commitments for announcement closer to that event to showcase leadership.

Solar Panel Efficiency Norms For Off-Grid Rural Projects

Context

- The Ministry of New and Renewable Energy has recently amended the solar panel efficiency norms for off-grid rural solar projects to boost rural electrification in remote and difficult-to-access areas.

Previous Efficiency Standards

Utility-scale/Grid-connected plants (Category 1):

- Crystalline silicon modules: ≥20% efficiency
- Cadmium Telluride (CdTe) modules: ≥19% efficiency

Rooftop solar & solar pumps (Category 2):

- Crystalline silicon: ≥19.5%
- CdTe: ≥18.5%

Small-scale solar lighting (Category 3):

- Crystalline silicon: ≥19%

- CdTe: ≥18%

New Amendment to Efficiency Norms

- Efficiency threshold for off-grid solar modules below 200 watts (solar lanterns, small streetlights, fans) reduced **uniformly to 18%** for both crystalline silicon and CdTe modules.

- Larger systems like solar pumps and rooftop installations retain the earlier stricter efficiency norms.
- Aim: To increase participation of smaller manufacturers, reduce costs and improve supply in rural, off-grid areas.

5.2   SNIPPETS

FAUNA SPECIES IN NEWS	
Topics	**Details**
Bone Collector's Caterpillar	• The discovery of the **Bone Collector caterpillar** on the Hawaiian island of Oahu has drawn significant scientific interest due to its unusual carnivorous behavior and evolutionary significance. **Nickname** • Bone Collector due to its use of prey body parts to construct its case. **Diet** • Carnivorous; feeds on insects caught in spider webs. **Case Construction** • Builds a protective silk case adorned with parts of prey (ant heads, fly wings). **Evolutionary Significance** • Estimated lineage age: at least six million years, predating the formation of the Hawaiian Islands.
Tiger	• The **Critical Tiger Habitat** of **Sariska Tiger Reserve** in Rajasthan is likely to **expand by approximately 4,500 hectares**. • This expansion follows a **rationalisation exercise** mandated by the **Supreme Court of India's Central Empowered Committee**. **Definition** • Core areas within tiger reserves, identified scientifically under **Wild Life Protection Act 1972** meant to be kept inviolate for tiger conservation. **Legal Basis** • Section 38V of the Wild Life (Protection) Act, 1972 (amended in 2006). **Purpose** • Ensure **undisturbed habitat** essential for the survival and growth of wild tiger populations. **Rights of Forest Dwellers** • Cannot be affected without recognition and settlement under the **Forest Rights Act, 2006**. **Inviolate Status** • Human activities like grazing, tourism, resource extraction are restricted or removed. **Relation with Buffer Zone** • Areas surrounding CTH are declared as **Buffer Zones** where regulated human activities are allowed to reduce pressure on CTH.
Saola	• In a significant scientific breakthrough researchers have **successfully mapped its genome** using tissue fragments from hunter-collected remains offering hope for

	future conservation efforts. **Scientific Name** • *Pseudoryxnghetinhensis* **First Discovery** • 1992, by Vietnamese Ministry of Forestry and WWF **Physical Features** • Long straight parallel horns (both sexes), white facial markings **Conservation Status** • Critically Endangered (IUCN Red List) **Estimated Population** • 50 to 300 individuals (as of 2015)
Pwani Molecular Form	• A new mosquito species provisionally named the **Pwani molecular form** has been discovered in the **coastal regions of Tanzania and Kenya**. **Belongs to** • *Anopheles gambiae* complex – a group of major malaria vectors **Genetic Identity** • Shows **clear genetic divergence** from other known members of the complex **Geographic Range** • Geographically **restricted to coastal East Africa** mainly Kenya and Tanzania **Behavioral Traits** • Potential for **distinct ecological or behavioural adaptations** **Insecticide Resistance** • **Lacks known resistance genes**—this could imply (a) greater susceptibility or (b) unknown resistance mechanisms
Snow Leopard	• The Union Territory of Ladakh is home to the highest recorded density of snow leopards in the world, with nearly 68 per cent of India's population of the elusive big cat found in the Union Territory, according to a new study. **Taxonomy and Physical Description** **Scientific Name** • *Panthera uncia* **Family** • Felidae **Conservation Status** • Vulnerable (IUCN Red List, 2017) **Habitat** • High-altitude mountains (3,000–5,500 m) **Physical Traits** • Thick fur, long tail, pale smoky-gray coat with black rosettes and spots • Found in **12 countries** across Central and South Asia: Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Pakistan, Russia, Tajikistan, Uzbekistan.
Endangered Primates	• The report **Primates in Peril 2023–2025** identifies the **25 most endangered primates globally**. • **Primates** are a diverse group of mammals that includes **lemurs, monkeys, apes and humans**. • They belong to the **order Primates** under the class **Mammalia**. • India hosts **15 species of primates**, some of which are **endemic and endangered**.

	• **Classification of Primates** **Strepsirrhines** • Lemurs, Lorises • More primitive, strong sense of smell **Haplorhines** • Monkeys, Apes, Humans • Larger brains, better vision
Mosura Fentoni	• Recently scientists have described a new extinct species named **Mosurafentoni** an early marine predator that lived around **506 million years ago** during the **Cambrian period**. **Taxonomic Group** • Radiodonta (extinct stem-group arthropods) • Radiodonts are **stem-group arthropods** meaning they are not direct ancestors of modern arthropods but share a common evolutionary lineage. • *Mosurafentoni* shows evolutionary traits that **bridge ancient radiodonts and modern arthropods** like insects and horseshoe crabs. **Time Period** • Cambrian Period (~506 million years ago) **Discovery Site** • Burgess Shale, Canadian Rockies (British Columbia, Canada) **Size** • Roughly as long as a human index finger **Notable Feature** • Three eyes: 2 lateral + 1 large median (central) eye
Blyde Rondavel Flat Gecko	• The **Blyde Rondavel Flat Gecko** is a rare, flat-bodied lizard species that was recently rediscovered in **South Africa**'s **Blyde River Canyon** located in the Mpumalanga Province • When fully grown it measures about **8−9 cm** in length. • As a *flat-bodied gecko* it is well-adapted to **rock-dwelling** and **cliff-dwelling** lifestyles enabling it to hide within narrow crevices in steep and rugged terrains. • Prefers isolated, vertical and inaccessible rocky outcrops likely contributing to the absence of sightings over the decades. • Likely nocturnal and elusive making field detection extremely difficult.
Asiatic Lion Population Census 2025	• The Asiatic lion once widespread from the Mediterranean to north India is now found only in the Gir Forest ecosystem of Gujarat. • The estimated population of Asiatic lions in Gujarat has risen to **891** in 2025 from **674** in 2020—an increase of **217 lions** over 5 years. • Lions were earlier confined to **Gir National Park** (Junagadh and Amreli). • As of 2025, lions have spread to **11 districts**: Junagadh, Gir Somnath, Amreli, Bhavnagar, Rajkot, Morbi, Surendranagar, Devbhoomi Dwarka, Jamnagar, Porbandar and Botad. • **384 lions** were located inside Gir and **507 lions** outside it indicating a shift into **non-forested and coastal habitats** including areas like Mitiyala, Girnar, Pania, and Barda sanctuaries. • **Bhavnagar** district recorded the **largest pride**.
Euthalia Malaccana	• **Euthalia malaccana** a butterfly species native to Southeast Asia has been **recorded for the first time in India**.

	• The discovery was made in **Basar,** the headquarters of **Leparada district** Arunachal Pradesh. • Once considered a **subspecies of** *Euthalia adonia*. • **Current Status**: Recognized as a **distinct species** (*Euthalia malaccana*). • Native to **Southeast Asia**: Northern **Thailand**, **Malay Peninsula** and **Sunda Islands**. • **First confirmed record** in **India** thereby **extending its known range** in the **Indo-Australian biogeographic region**.
Clownfish	• Between **2023–2024** the world experienced a **mass coral bleaching event** the **fourth global bleaching event** on record. • This bleaching has been linked to **marine heatwaves**. • A **new study** has revealed that **adult clownfish shrink in size** to survive extreme heat conditions. • Clownfish also known as anemonefish are small, brightly colored marine fish belonging to the subfamily **Amphiprioninae** in the family **Pomacentridae**. • They are primarily known for their **symbiotic relationship with sea anemones**. • Typically 4 to 5 inches long. • Bright orange with white stripes, but varies across species. • Found inshallow seas and coral reefs of the Indian and Pacific Oceans including the Great Barrier Reef and the Andaman and Nicobar Islands. • Omnivorous – algae, zooplankton and small crustaceans.
Kakapo	• A team of conservationists, zoologists and veterinary medicine specialists has successfully used artificial insemination to breed wild endangered parrots in New Zealand. **Scientific Name** • *Strigopshabroptilus* **Common Name** • Owl Parrot **Status** • **Critically Endangered** (IUCN Red List) **Lifespan** • Up to 90 years **Habitat** • Native forests of New Zealand (islands) **Flight capability** • **Flightless**, uses wings for balance **Diet** • Herbivorous – seeds, fruits, leaves, bark **Breeding** • Lek breeding system, low reproductive rate
Troglophile Animal	• A new species of troglophile fish has been discovered in a cave in Meghalaya's East Khasi Hills. • Troglophiles are organisms that prefer cave habitats but are not exclusively restricted to them. • The term originates from Greek: *"trogle"* (hole) and *"philos"* (loving). They are often studied under biospeleology (the study of cave life). • Troglophiles can survive both inside caves and in surface environments unlike troglobites that are strictly confined to caves.

Caliphaea Sinuofurcata	• New Damselfly Species, CaliphaeaSinuofurcata, has been discovered in Arunachal Pradesh. **Damselflies** **Scientific Order** • *Odonata* (suborder: *Zygoptera*) **Relation to Dragonflies** • Closely related; both are odonates, but damselflies are usually slimmer **Wings** • Two pairs of similar-sized, narrow wings; held together when at rest **Eyes** • Compound eyes set **far apart** (unlike dragonflies) **Lifecycle** • Undergo **incomplete metamorphosis** (egg → nymph → adult) **Habitat** • Mostly near **freshwater habitats** like ponds, streams, and marshes **Ecological Role** • Predators of mosquitoes, midges; bioindicators of freshwater ecosystem health
Mosura Fentoni	• *Mosurafentoni* is a newly discovered extinct marine creature from the Cambrian period (~506 million years ago). • Unearthed in **Burgess Shale**, British Columbia, Canada — a globally significant fossil site. • It belongs to a group of primitive arthropods known as **radiodonts** considered distant ancestors of modern arthropods like insects, crabs and spiders.

FLORA SPECIES IN NEWS	
Topics	**Details**
Teak	• With India managing 35% of the world's planted teak forests, it plays a key role in the global teak market. However, natural teak productivity is low, and tissue-cultured teak is being explored as a viable solution. • **Teak** is a **tropical hardwood tree species** native to South and Southeast Asia. • Known as the **King of Timbers** it is prized for its **durability, strength and natural resistance** to water, pests and decay. • Teak is a **deciduous species** and one of the most valuable timbers in global trade. • **Native regions**: India, Myanmar, Thailand, Laos. • **Major teak-growing states in India: Madhya Pradesh,** Maharashtra, Odisha • India has about **8.9 million hectares** under teak forests and plantations—**around 35% of global teak forests**. **Climatic and Soil Requirements** **Rainfall** • 1200–2500 mm annually **Temperature** • 20–40°C **Soil type** • Deep, well-drained loamy or alluvial soils **Altitude** • Up to 1200 meters above sea level

Light

- Requires full sunlight (heliophilic species)
- India is both a **producer and importer** of teak wood due to rising demand and legal restrictions on harvesting from natural forests.

PROTECTED AREAS IN NEWS	
Topics	**Details**
Kuldiha Wildlife Sanctuary	• A **poacher was recently arrested** after an **exchange of fire with forest guards** at the **Kuldiha Wildlife Sanctuary**. **State** • Odisha **District** • Balasore **Region** • **Eastern Ghats** (Chota Nagpur Plateau extension) **Area** • 272 sq. km **Altitude** • 80–650 metres approx. **Connectivity** • Connected to **Simlipal Tiger Reserve** via **Nato** and **Sukhupada Hill ranges** **Elephant Reserve** • Part of **Similipal-Kuldiha-Hadgarh Elephant Reserve**
Palamu Tiger Reserve	• Palamu Tiger Reserve (PTR), one of India's earliest tiger reserves under *Project Tiger*, is located in Jharkhand. • The recent successful relocation of Jaigir village from its core area is a major milestone in the human-wildlife coexistence paradigm. **Location** • Latehar and Garhwa districts **Geographical Zone** • Western Chotanagpur Plateau **Area Coverage** • 1,014 sq.km. (Core: 414 sq.km., Buffer: 600 sq.km.) **Topography** • Undulating terrain with valleys, hills and plains **Rivers** • North Koel (main), Auranga, and Burha (only perennial one) **Climate** • Drought-prone zone **Geology** • Composed of gneiss, granite, limestone and rich in coal and bauxite • Among the **first 9 reserves** under **Project Tiger** (1973). • **World's first tiger census** using **pugmark technique** in 1932 under J.W. Nicholson.
Kanjurmarg Landfill	• The Bombay High Court declared a 119.91-hectare area of the Kanjurmarg landfill site in Mumbai as a **protected forest** under the **Forest Conservation Act 1980** and the **Indian Forest Act 1927**.

	• The Kanjurmarg site is situated on marshy salt pan lands near the Thane-Airoli creek, home to mangrove ecosystems. • **SC 2003 Order**: Directed Maharashtra to allot 141.77 hectares of salt pan land to the **Brihanmumbai Municipal Corporation** for sanitary landfill use, provided environmental laws were followed. • **2005**: Land notified as a **protected forest** under a broader HC mandate to safeguard mangroves. • **2006**: State denotified the land, allowing BMC to proceed with landfill development. • **2016**: Sanitary Landfill Facility (SLF) at Kanjurmarg became operational, now handling **~90% of Mumbai's 6,500 MT/day** waste. • **2013 onwards**: NGO **Vanashakti** and others challenged the denotification and alleged environmental violations.
Manas National Park	• **Three persons arrested** for allegedly killing **three wild elephants** in **Manas National Park**. **Geography** **Location** • In the foothills of the Eastern Himalayas, **Assam** **Coordinates** • Lies in the districts of **Chirang** and **Baksa** **Area** • **950 sq. km** (core), part of a larger **2837 sq. km buffer landscape** **Border** • Shares international border with **Bhutan's Royal Manas National Park** **Altitude Range** • **60 – 1,500 metres** above sea level **Major River** • **Manas River** – tributary of Brahmaputra; splits into **Beki** and **Bholkaduba** in the plains **Landscape** • Plains, foothills, riverine and forest ecosystems **Conservation Status** **Designation** **National Park** • 1990 • Declared under the Wildlife Protection Act, 1972 **Tiger Reserve (Project Tiger)** • 1973 • One of the first 9 tiger reserves in India **UNESCO World Heritage Site** • 1985 • *In Danger list 1992–2011 due to insurgency, restored after conservation efforts* **Biosphere Reserve** • 1989 • Recognized under the Man and Biosphere Programme **Elephant Reserve**

	• 2003 • Under Project Elephant **Important Bird Area (IBA)** • Recognized by BirdLife International for avian diversity **Transboundary Landscape** • Part of **India-Bhutan conservation corridor** (with Royal Manas NP)
Nongkhyllem Wildlife Sanctuary	• A **₹23.7 crore ecotourism project** proposed in **Nongkhyllem Wildlife Sanctuary** has **triggered opposition** from **local communities** and **environmental activists**. **Geographical and Ecological Profile** **Location** • **Ri-Bhoi District**, Meghalaya **Region** • Within the **Eastern Himalayan Global Biodiversity Hotspot** **Area** • Approx. **29 sq. km** **Topography** • Undulating plains, low hills and rugged terrain **Major River** • **Umtrew River**, forms the western boundary; tributaries: **Umran, Umling, Umtasor**
Bhoramdev Wildlife Sanctuary	• In a recent instance of **man-animal conflict four people were injured in a bear attack** in the **Kawardha range** of the **Bhoramdev Wildlife Sanctuary**. **Geography** **State** • Chhattisgarh **District** • Kawardha (Kabirdham) **Geographical Zone** • Lies in the **Maikal range of the Satpura hills** **Area Covered** • Approx. **352 sq. km** **Altitude** • Undulating terrain with dense forests and streams **Nearby Landmark** • Named after the **Bhoramdeo Temple**, over 1000 years old, dedicated to Lord Shiva
India's Largest Conservation Reserve	• Himachal Pradesh government notified the Tsarap Chu Conservation Reserve making it India's largest conservation reserve spanning 1,585 sq. km. • Located in the remote, high-altitude Spiti Valley this reserve significantly strengthens India's biodiversity and snow leopard conservation efforts. • Declared under Section 36A(1), *Wildlife (Protection) Act, 1972* • *Conservation Reserve* — a protected area designated for conserving biodiversity while allowing limited sustainable use by local communities.
Reserved Forest Lands	• In a landmark judgment the **Supreme Court** took suo motu cognizance of rampant misuse of reserved forests and issued nation-wide directions for reclaiming such lands. • All **Chief Secretaries** and **UT Administrators** must: • **Constitute Special Investigation Teams**. • Examine if forest lands in possession of Revenue Departments have been illegally

	allotted to private parties.
	• Forest lands illegally allotted must be **taken back** and handed over to the **Forest Department**.
	• If repossession is not feasible in **public interest** monetary compensation must be recovered and used for **afforestation**.
	• The entire process of investigation and transfer must be **completed within one year** from the date of the order.
	• Such lands should **only be used for afforestation not commercial or non-forestry purposes**.
Keoladeo National Park	• Keoladeo now supports 8 out of 10 **native turtle species** of Rajasthan.
	• Keoladeo National Park also known as **Bharatpur Bird Sanctuary** is a globally significant wetland ecosystem in **Rajasthan**.
	Established as National Park
	• 1981 (Sanctuary: 1956; Hunting Preserve: 19th century)
	Area
	• 29 sq. km
	Ramsar Site
	• Yes
	UNESCO World Heritage Site
	• Yes (Since 1985)
	Flyway Zone
	• Central Asian Flyway
	Named After
	• *Keoladeo* temple dedicated to Lord Shiva

CONVENTIONS/TREATIES/ OPERATIONS IN NEWS	
Topics	**Details**
Operation Olivia	• **A record 6.98 lakh Olive Ridley turtles** nested at the **Rushikulya river mouth** attributed to enhanced **Indian Coast Guard** patrolling and effective implementation of Operation Olivia in the 2024–25 season.
	• Operation Olivia is an **annual coastal surveillance initiative** launched by the **Indian Coast Guard**.
	• Conducted during the **breeding season of Olive Ridley turtles (November to May)** the operation is aimed at **protecting nesting grounds** of these vulnerable marine creatures along **Odisha's coastline** especially at **Gahirmatha Beach, Rushikulya and Devi river mouths**.

MATERIALS IN NEWS	
Topics	**Details**
Chlorpyrifos	• A recent decision has sparked debate due to the unprecedented number of **22 exemptions** allowed for its continued use.
	• Chlorpyrifos a widely used organophosphate pesticide has officially been listed under **Annex A** of the **Stockholm Convention on Persistent Organic Pollutants** for global elimination.
	• A **moderately hazardous pesticide** (WHO classification).

	• Used in **agriculture** (rice, cotton, sugarcane, citrus, etc.), **livestock** (tick control) and **wood preservation**

PBAT	• **Kamalpur Nagar Panchayat** in **Tripura** has introduced **compostable bags made from PBAT** as a **sustainable alternative to single-use plastic**.
	• **PBAT (Polybutylene Adipate Terephthalate)** is a **biodegradable, compostable thermoplastic polymer**.
	• It is **petroleum-based** yet **biodegrades completely** under industrial composting.
	• **Structure:** Copolymer of:
	  o **Adipic acid**
	  o **1,4-butanediol**
	  o **Terephthalic acid**
	• Can be processed using **conventional plastic manufacturing techniques** making it an ideal replacement for conventional plastic in packaging applications.

CONCEPTS IN NEWS	
Topics	**Details**
Environmental Amnesty	• In May 2025 the Supreme Court struck down the amnesty mechanism as *illegal and against environmental jurisprudence*. • Environmental governance in India is centered on the principle of prior environmental clearance under the Environmental Impact Assessment Notification, 2006. • However the Ministry of Environment introduced ex-post facto clearances in 2017 allowing projects that began without EC to be regularised retrospectively.
India's Cooling Paradox	• India has warmed at a **slower rate (~0.6°C since 1950s)** compared to the **rest of the Northern Hemisphere (~1.2°C)**. • At first glance this appears positive but scientists caution that it represents a **paradoxical and dangerous climate trend** primarily driven by **aerosol pollution**. • India has high levels of aerosols from **fossil fuel burning, crop residue burning and industrial activities**. • During 2020 lockdown: **25% reduction in particulate matter** led to unexpected **2–4°C fall in night temperatures** in Delhi. Suggests aerosols may normally **warm near-surface air** while reducing sunlight. • **Expanding irrigation** → Increases local evapotranspiration contributing to surface cooling. • **Stratosphere-troposphere interactions** and **monsoon variability** may also play roles. • Lack of **comprehensive India-specific data models** adds uncertainty.
Total Allowable Catch	• The Total Allowable Catch (TAC) was recently in the news in an escalating dispute involving the US and Russia. • TAC refers to the **maximum quantity of a particular fish species** that can be caught within a defined area and period usually set annually. • It is designed to **regulate fishing pressure** and prevent the **overexploitation of marine and freshwater fish populations** ensuring **sustainable use of fishery resources**.

Agriphotovoltaics	• As India seeks to meet its renewable energy targets and double farmers' incomes **Agriphotovoltaics** the dual use of land for agriculture and solar energy production offers a promising solution. • APVs refer to the **simultaneous use of land** for **solar energy generation** and **agricultural production**. • Conceptualized in **1981** by German scientists Adolf Goetzberger and Armin Zastrow it involves **elevating solar panels** (~2 meters) to allow crops to grow underneath or between them.
Lagrangian Growth-Advection (GA) Model	• Monterey Bay Aquarium Research Institute (MBARI) researchers and collaborators from Florida State University have developed a new method for analyzing satellite data to better predict the export of carbon. • A **biophysical ocean model** that combines • **Lagrangian tracking**: Follows individual water parcels or fluid particles. • **Advection**: Movement of water masses through currents. • **Biological growth**: Monitors changes in **phytoplankton populations** over time.
Geotubbing	• Geotubing refers to a **coastal protection technique** that uses large geotextile tubes known as **geotubes** filled with dredged or hydraulically pumped materials to stabilize coastlines and prevent erosion. • The geotube is **filled with sediment** and then **sealed**. • Water **drains out** through the geotextile fabric leaving the solid materials inside. • Once installed along the coastline or water body it acts as a **barrier** to: **Wave action, Tidal currents, Soil erosion**

SCHEMES IN NEWS	
Topics	**Details**

Green Hydrogen Certification Scheme	• The **Green Hydrogen Certification Scheme of India** is a major regulatory step under the **National Green Hydrogen Mission** to ensure transparency, credibility and international acceptance of green hydrogen produced in India.
	• Hydrogen is considered green if **non-biogenic GHG emissions ≤ 2 kg CO_2e/kg of hydrogen** over a 12-month average.
	Certification Process – 4 Types of Certificates
	Concept Certificate
	• Design intent and compliance with GHCI norms
	Facility-Level Certificate
	• Site readiness and infrastructure conformity
	Provisional Certificate
	• Preliminary emission data during operations
	Final Certificate
	• Verified annual emissions data – mandatory for subsidies, sale, or export
	• **Final Certificates** are issued in **multiples of 100 kg** and contain full details of **emission intensity and production pathway**.
	• Producers must appoint **BEE-recognized third-party auditors** to ensure **independent emissions verification**.
	• Producers must:
	  o Maintain **detailed records** for at least **5 years**.
	  o Monitor energy sources, emission data and hydrogen output using **standardized**

tools.
- o Submit periodic reports for audit.
- o Aligned with **ISO 19870:2023** for global comparability.

5.3 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topics	Date
EXPANDING TREE COVER IS CRUCIAL	3 May 2025
INDIA'S FOREST RIGHTS ACT: A DISTINCTIVE MODEL IN GLOBAL CONSERVATION LAWS	8 May 2025
METHANE EMISSIONS	12 May 2025
SHIPPING INDUSTRY AND EMISSIONS	14 May 2025
ECOLOGY IS THE WORLD'S PERMANENT ECONOMY	15 May 2025
LIVE BAITING	21 May 2025
OVERFISHING	23 May 2025
WHY INDIA NEEDS STABLE URBAN FORESTS	24 May 2025
OIL SPILLS	30 May 2025

6. SCIENCE & TECHNOLOGY AND HEALTH

6.1 SHORT ARTICLES

Sodium-Ion Battery

Context

- Indian innovators recently developed a sodium-ion battery that can charge to 80% in just six minutes and has a life cycle of over 3,000 charges.

> The development of indigenous sodium-ion technology aligns with the "Atmanirbhar Bharat" initiative and offers a path to reduce dependence on lithium imports, the supply chains for which are largely controlled by China.

Key benefits of sodium-ion batteries

- Sodium is the **sixth most abundant element on Earth and can be easily extracted from seawater,** eliminating the supply chain vulnerabilities and geopolitical tensions associated with lithium. This also means a significantly lower and more stable cost for raw materials.
- Sodium-ion batteries are **less prone to thermal runaway and can be safely transported at zero volts**, reducing fire risks and handling complexities.
- The technology **utilises aluminium current collectors instead of the more expensive copper used in lithium-ion batteries,** bringing down production costs.
- These batteries demonstrate **effective operation across a wider temperature range,** from -20°C to 60°C, making them well-suited for India's diverse climatic conditions.
- By avoiding the use of toxic materials like cobalt and nickel, sodium-ion batteries are **more environmentally friendly** to recycle.

> Currently, **sodium-ion batteries store less energy per unit of weight compared to their lithium-ion** counterparts, which can be a limitation for long-range electric vehicles.

Jayant Narlikar

Context

- Astrophysicist Jayant Narlikar, co-creator of the Hoyle–Narlikar theory of gravity, passes away at 87.

Jayant Narlikar

- In 1960, he **won the Tyson Medal for his astronomical research and later secured the Smith's Prize in 1962.** He became a founding member of Hoyle's Institute of Theoretical Astronomy from 1966 to 1972.
- In 1988, the University Grants Commission charged him with **establishing the Inter-University Centre for Astronomy and Astrophysics (IUCAA) in Pune**. As its founding director until 2003, he built IUCAA into a world-class institution, promoting research, education, and outreach.

Hoyle-Narlikar Theory of Gravity

- The **Hoyle-Narlikar theory blends Einstein's theory of relativity with Mach's principle, which suggests that an object's inertia (resistance to movement) depends on the total mass of the universe around it.** Unlike Einstein's view, where gravity acts like a force through a field, this theory proposes gravity as an "action-at-a-distance" effect.

Other Scientific Contributions

- He led several experiments sponsored by the Indian Space Research Organisation (ISRO), to collect microorganisms from the upper atmosphere.
- He writes numerous popular science books, such as **An Introduction to Cosmology and From Black Clouds to Black Holes,** making complex ideas accessible.
- **His science fiction, like Dhoomaketu (The Comet) (adapted into a film)** and The Plague in Athens (eerily relevant during COVID-19), blends science with storytelling.

- As a consultant for the National Council of Educational Research and Training (NCERT), he shapes science and math textbooks.

Phthtalates

Context

- A recent study has highlighted Phthalates in plastic linked to heart disease deaths globally.

What are Phthalates?

- **Phthalates are a group of industrial chemicals called "plasticizers."** Their primary function is to make plastics like PVC more flexible, soft, and durable. Because of this property, they are ubiquitous and found in countless everyday products, including:
  - Food packaging and containers
  - Cosmetics, lotions, and perfumes (to help retain scents)
  - Medical devices like IV tubes and blood bags
  - Children's toys
  - Vinyl flooring and shower curtains
- These chemicals are not strongly bonded to the plastic and can easily leach out into our food, water, and air.

How Phthalates Affect Health?

- When phthalates enter the human body, they act as **endocrine disruptors**.
- They can mimic or block natural hormones, particularly **affecting testosterone levels.** This disruption can have cascading effects on metabolism and cardiovascular health.
- Studies show that the **exposure triggers inflammation in the arteries**. This inflammation can lead to **atherosclerosis**, which is the hardening and narrowing of arteries due to plaque buildup, a primary cause of heart attacks and strokes.

SNAP X

Context

- A new innovation called SNAP-X, developed by researchers, offers a promising solution to the crisis facing coral reefs.

Coral Reefs

- Coral reefs, often called the "rainforests of the sea," are among the most biodiverse and valuable ecosystems on Earth. They support a vast array of marine life and protect coastal communities by acting as natural barriers against storms and erosion.
- Rising ocean temperatures cause **coral bleaching, a process where corals expel the symbiotic algae living in their tissues,** causing them to turn white and often die.
- Pollution from land runoff and overfishing degrade reef health, often leading to the overgrowth of seaweed, which outcompetes and smothers corals.
- Scientists estimate that Earth has already lost about half of the world's coral cover since the mid-20th century. Projections warn that **70-90% of all coral reefs could disappear if global warming reaches 1.5°C** above pre-industrial levels, and 99% could be lost at 2°C.

SNAP-X

- Researchers at the University of California San Diego have developed a bio-ink called **SNAP-X**.
- Surfaces coated with the SNAP-X bio-ink saw coral larvae settlement increase by **up to 20 times** compared to untreated surfaces.

6.2   SNIPPETS

Topics	Details
Breakthrough Prize	• The 2025 Breakthrough Prizes, often hailed as the "Oscars of Science," have been awarded, recognising transformative achievements in Fundamental Physics and Life Sciences. • The prize in Fundamental Physics was awarded for the collaborative work of scientists on e**xperiments at CERN's Large Hadron Collider (LHC).** • The prizes in Life Sciences honour revolutionary advancements in gene editing and a deeper understanding of multiple sclerosis.

	• The prize was established in 2012 by Yuri and Julia Milner. • It **awards $3 million** to laureates in each of the three major fields: Mathematics, Fundamental Physics, and Life Sciences.
Sugar Boards	• The Central Board of Secondary Education (CBSE) has directed its affiliated schools to set up 'Sugar Boards' to inform students about the dangers of high sugar consumption. • The boards highlight the **WHO's recommended daily sugar intake, which is about 25 grams (six teaspoons) for both adults and children.** • Mention the hidden sugar in popular snacks and drinks. It explains the direct link between high sugar consumption and diseases like diabetes and obesity. • Suggest simple alternatives, encouraging students to choose water, fresh fruits, or unsweetened beverages over sugary options. • Indian children consume far more sugar than recommended. Children aged 4-10 get 13% of their daily calories from sugar, while those aged 11-18 get 15%. This is **higher than the 5% limit suggested by the World Health Organization (WHO).**
Jinchuanloong Niedu	• The discovery of Jinchuanloongniedu fossils in Gansu Province, China. • Jinchuanloongniedu is a **newly discovered species of sauropod dinosaur that lived during the Middle Jurassic period**, about 165 million years ago. • It **belongs to the group of advanced, long-necked, four-legged, plant-eating dinosaurs called Eusauropoda.** • The presence of **lacustrine deposits at the discovery site suggests they lived in freshwater lakes or rivers**, while the discovery of tuffaceous layers suggests periodic volcanic activity in the region.
Tainwen 2	• China launched the Tianwen-2 mission to explore and collect samples from the near-Earth asteroid 469219 Kamoʻoalewa. • It is China's first attempt to retrieve asteroid samples, placing it among elite nations like the United States and Japan, which have successfully completed similar missions. • Scientists suspect **Kamoʻoalewa might be a fragment of the Moon**, possibly ejected millions of years ago when an asteroid struck the lunar surface.

Tandem Solar Cell	• Researchers at the IIT Bombay have developed tandem solar cells, with a record power conversion efficiency of about 30%.
	• Unique "tandem" or two-layered structure designed to capture a wider spectrum of sunlight more effectively.
	   o **Bottom Layer** is made of **silicon**, a widely-used material found in almost all traditional solar panels. It absorbs light from the red and infrared parts of the spectrum.
	   o **Top Layer** uses a special, semi-transparent material called **halide perovskite**, developed by the IIT Bombay team, to efficiently absorb light from the blue and green parts of the spectrum.

Tamil Nadu Adopted A Space Sector Policy	• Tamil Nadu becomes the third state after Karnataka and Gujarat to launch its own Space Industrial Policy. • The Indian National Space Promotion and Authorisation Centre (IN-SPACe) advised Tamil Nadu to create a state-specific policy to capitalise on its unique strengths. • The state is home to over 250 vendors that are already part of the supply chain for the Indian Space Research Organisation (ISRO), indicating a ready-made

	foundation for a larger space industry.
Liquid Carbon	• Scientists have, for the first time, successfully measured the atomic structure of liquid carbon. • Liquid carbon is a unique form of carbon that exists only under extreme conditions of temperature and pressure. • It is not a naturally stable phase under normal conditions, and **its existence is found in the cores of giant planets**, white dwarf stars, and certain astrophysical scenarios. • It is also used in various applications, such as food preservation, fire extinguishers, solvent extraction, and transportation and storage of CO_2.
Intercrystals	• Researchers at Rutgers University have discovered a new class of materials known as "intercrystals." • Intercrystals are made by **piling ultrathin, 2D layers of different materials, such as graphene and hexagonal boron nitride,** twisting these layers at specific angles, creating a unique, larger-scale interference pattern called a moiré pattern. • They can be used for tunable electronics, switching between being a conductor, an insulator, or even a superconductor, eliminating the need for complex and often toxic chemical modifications. • They are made from abundant and non-toxic elements like carbon, boron, and nitrogen, making them a sustainable alternative to current technologies that rely on rare-earth metals.
EOS-09 Mission	• The Indian Space Research Organisation (ISRO) mission failed during the launch of the PSLV-C61 vehicle intended to place the EOS-09 into orbit. • The launch proceeded perfectly through its first and second stages. However, a serious technical issue occurred during the third stage burn. This is **only the third failure for the PSLV in 63 launches since 1993.** • EOS-09 was an Earth observation satellite equipped with a **C-band Synthetic Aperture Radar (SAR)**. Unlike optical satellites that require clear daylight, SAR allows the satellite to capture high-resolution images of Earth's surface regardless of weather conditions (like clouds or rain) or time of day.
Kosmos 482	• Kosmos 482, a Soviet-era spacecraft launched in 1972, is currently in a decaying orbit and is expected to crash back to Earth soon. • Kosmos 482 was **part of the Soviet Union's Venera program, aimed to explore the environment of Venus.** It was a sister probe to **Venera 8, which successfully landed on Venus and transmitted data.** • The mission failed shortly after its launch. This left the spacecraft and its landing module stuck in an elliptical orbit around Earth. While other parts of the spacecraft have since burned up in the atmosphere or re-entered, the hardy Venus landing module has survived.

6.3 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topics	Date
DO PUBLIC R&D UNITS INNOVATE ENOUGH?	5th May, 2025
ARE VACCINE-PREVENTABLE DISEASES RISING?	5th May, 2025

7. CULTURE & HISTORY

7.1 SHORT ARTICLES

Lairai Devi Temple

Context

- A tragic stampede during the annual LairaiJatra at the Shree Lairai Devi shrine in Shirgaon, Bicholim (North Goa), claimed at least six lives and injured over 70 in the early hours of Saturday.

Location Overview:

- The Lairai Devi Temple is located in Shirgaon village of Bicholim Taluka, North Goa, and is a key spiritual site known for its deep cultural roots and large pilgrim turnout during festivals.

About Lairai Devi and Temple Significance

Religious Significance:

- Goddess Lairai, an incarnation of Parvati, is worshipped as a Kalash, symbolizing the Adishakti, the source of creation. The Kalash in the sanctum signifies the womb of existence. Jasmine flowers (Mogra) are offered to the Devi during rituals, emphasizing purity and devotion.

Temple Architecture:

- Built in traditional Goan style, the temple is painted yellow with saffron hues. A large Mandapam was added later. A 240-year-old painting of the Goddess in a green saree inside a Kalash adorns the wall, predating Raja Ravi Varma's style.

Key Festivals and Rituals:

- The ShirgaoJatra or LairaiJatra, held on Vaishakh Shukla Panchami, features a fire-walking ritual (Agnidivya) by devotees called Dhonds. Rituals begin with drumming and processions, followed by a midnight bonfire and fire walk. Devotees believe the righteous emerge unharmed.

Symbolism and Syncretism:

- Lairai Devi symbolizes religious harmony. Hindus and Catholics regard Lairai Devi and Virgin Mary of Mapusa as sisters, showcasing deep cultural and religious integration in the region.

Heritage and Artistic Legacy:

- The 240-year-old temple painting of the Devi reflects early divine feminine iconography in Goa. Though stylistically similar to Raja Ravi Varma's works, it predates them, showing Goan artistry's evolution.

Piprahwa Relics

Context

- India issued a court notice to Sotheby's and the Peppé family to halt the auction of Piprahwa relics, believed to contain Buddha's cremated remains.

About Piprahwa Relics:

- Discovered in 1898 by British engineer William Claxton Peppé in UP's Siddharthnagar near Nepal, the relics included bone fragments, gold, gemstones, and ancient coffers from a hidden stupa. The British claimed them under the Indian Treasure Trove Act. Most relics were sent to the Indian Museum in Kolkata.

Historical Importance:

- The Piprahwa Stupa likely housed a portion of Buddha's cremated remains, built by the Sakya clan around 480 BCE. It's considered among the original eight stupas safeguarding his relics, held sacred by Buddhists worldwide.

Stupas with Buddha's Relics:

- After Buddha's Mahaparinirvana, his remains were divided among eight kingdoms. Each built a stupa—turning them into key pilgrimage sites. These include Kushinagar, Vaishali, Kapilavastu, Rajagriha, and others.

Original 9 Stupas Locations:

- The original stupas were located in Rajagriha, Vaishali, Kapilavastu, Allakappa, Ramagrama, Vethadipa, Pava, Kushinagar, and Pippalivana.

Ashoka's Role (3rd century BCE):

- Emperor Ashoka redistributed relics across thousands of stupas throughout his empire, spreading Buddhism widely.

Unique Feature of Ramagrama Stupa:

- Ramagrama is believed to be the only untouched stupa that still holds its original relics, maintaining sacred continuity.

Structure of Early Buddhist Stupa:

- Early stupas had a dome (anda), a square railing (harmika), a central pillar (yashti) with umbrellas (chatra), and a path (pradakshinapatha) for circumambulation, forming the core of Buddhist architectural design.

Buddhavanam

Context

- Miss World 2025 contestants from 22 countries visited Buddhavanam, Telangana, to mark Buddha Purnima, highlighting its global significance.

Location

- Buddhavanam is a Buddhist theme park on the northern bank of the Krishna River, near Nagarjuna Sagar in Telangana, designed to honour Buddha's life and teachings.

Historical Significance

- Located near Nagarjunakonda—once the capital of the Ikshvaku dynasty during the 3rd–4th centuries CE—Buddhavanam honours Acharya Nagarjuna, a prominent Mahayana philosopher. Excavations revealed stupas, monasteries, and temples reflecting rich Buddhist heritage.

Development Significance

- Approved as part of India's integrated Buddhist Circuit, Buddhavanam spans 279 acres. It aims to attract tourists, especially from Southeast Asia, promoting spiritual and cultural tourism.

Architectural Significance

- The site features an Entrance Plaza, Buddhacharitha Vanam (life of Buddha), Jataka Park (past lives), Dhyana Vanam (meditation zone), Stupa Vanam (Maha Stupa), and a Buddhist museum. The Mahastupa showcases exquisite carvings and a symbolic sky with lotus motifs.

Agamas

Context

- The Supreme Court directed a committee to identify Agamic temples in Tamil Nadu within three months as part of a temple classification review.

What are the Agamas?

- Agamas are post-Vedic scriptures offering guidance on temple rituals, worship, yoga, architecture, and cosmology. They are sacred manuals passed down through tradition, often associated with Tantrism. Agamas combine philosophical depth with ritual instruction and have shaped temple practices across South India.

Focus on four aspects

- Agamas cover **Jnana** (knowledge), **Yoga** (meditation), **Kriya** (rituals), and **Charya** (devotional practices).

Main Branches:

- **Shaiva Agamas** – dedicated to Lord Shiva
- **Vaishnava Agamas** – dedicated to Lord Vishnu
- **Shakta Agamas** – dedicated to Goddess Shakti

Important Agamic texts:

- Include *Isvara-Samhita*, *Narada-Pancharatra*, *Spanda-Pradipika*, and *Mahanirvana-Tantra*.

Vedic Significance:

- While they are not directly Vedic, Agamas share the Vedic spirit. Some texts align with Vedic beliefs, others diverge.

Historic Significance:

- Agamas have existed since at least the Pallava era (mid-1st millennium CE). Many Tamil temples still follow Agamic traditions in daily rituals and festivals.

Rajon Ki Baoli

Context

- ASI, in collaboration with WMFI and TCS Foundation, completed the conservation of Rajon ki Baoli, a 16th-century stepwell in Delhi.

About Rajon ki Baoli:

- Located in Mehrauli Archaeological Park, this stepwell was built by Daulat Khan in 1506 CE under Sikander Lodi's rule. It functioned as a water source and summer retreat. Its name, meaning "stepwell of the masons," reflects its use by artisans.

Rajon ki Baoli Features:

- This rectangular stepwell spans 1,610 sq m and descends 13.4 meters. The four-tiered structure includes arched corridors, pillared verandas, medallions, and a mosque, tomb, and chhatri.

Lodi Dynasty:

- Ruling from 1451–1526, the Lodi dynasty was Delhi's last pre-Mughal rulers. Key figures include Bahlul Lodi (founder), Sikander Lodi (who founded Agra and enacted reforms), and Ibrahim Lodi, whose defeat in the First Battle of Panipat marked the rise of the Mughals.

Nagshankar Temple

Context

- Nagshankar Temple in Assam's Biswanath district has been declared a model temple for turtle conservation.

Location

- The temple is in Sootea, Biswanath district, about 70 km from Tezpur. Dedicated to Lord Shiva, it also honours turtles as Vishnu's avatars.

Historical context:

- Built in the 4th century CE by King Nagashankar of the Nagakha dynasty, the temple has both religious and ecological importance, blending tradition with conservation.

Key Features

- It houses a large pond with 250–300 turtles, including the critically endangered black softshell. The area also shelters peacocks, deer, and snakes, functioning as a wildlife refuge.

Turtle Conservation Efforts:

- The temple collaborates with TSA India, Help Earth, and Kaziranga National Park. Eggs are incubated by forest officials and hatchlings released into the wild. Around 25 temples in Assam, including Hajo's Hayagriva Madhav Temple, now serve as turtle conservation centres.

Safa Masjid

Context

- The ASI is beginning long-awaited repairs to the damaged mihrab structure near the water tank at Safa Masjid in Ponda, Goa, after months of inaction.

About Safa Masjid

- Also called Safa Shahouri Masjid, it is one of Goa's oldest mosques.
- Located in the village of Ponda.
- Recognized as a national monument by the Archaeological Survey of India for its cultural value.

Architecture and Historical Significance:

- Built in 1560 by Sultan Ibrahim Adil Shah I of Bijapur.
- Reflects Indo-Islamic style with a rectangular structure and terracotta roof.
- Minimalist design exudes simplicity and peace.
- No inscriptions found; adds historical mystery.
- Features a large water tank with intricate carvings, suggesting a larger water system.
- Surrounded by a Charbagh-style garden, enhancing its serene atmosphere
- Survived Portuguese colonization, making it a rare Islamic structure in Goa.
- Simple yet elegant, the mosque remains an architectural gem.

Dwarka

Context

- ASI has completed two underwater surveys off the Dwarka coast, Gujarat, and a third detailed study is planned to further validate the city's mythological roots.

Dwarka Location Significance

- Dwarka is a coastal town in Gujarat by the Arabian Sea. It forms part of the Krishna pilgrimage circuit, which includes Vrindavan, Mathura, Puri, etc.
- Believed to be the site of Lord Krishna's ancient kingdom.

- Bet Dwarka and Mul Dwarka nearby also feature in Krishna lore.
- Researchers have long debated its historical location using ancient texts and archaeological studies.

Dwarkadhish Temple Architecture:

- The temple is a five-story structure supported by 72 stone pillars.
- Follows the 16th-century Chalukya architectural style.
- Walls are richly carved with mythological scenes.

- Affiliated with the Pushtimarg sect, founded by Vallabhacharya.
- The sect follows the Shuddhadvaita philosophy (pure non-dualism).
- Managed by Vallabhacharya's descendants (Vallabha Kul).
- Closely connected with the Nathdwara temple in Rajasthan.
- Designated the 98th Divya Desam, praised by four Alwars and revered saints like Adi Shankara.

8. GEOGRAPHY AND DISASTER MANAGEMENT

8.1 SHORT ARTICLES

Turbidity Currents in Submarine Canyons

Context

- New research in *ACS Environmental Science & Technology* reveals that microplastics reach the deep sea via turbidity currents in underwater canyons—even in areas like Whittard Canyon off Ireland, which are not river-fed.

What are Turbidity Currents?

- Turbidity currents are underwater flows of dense, sediment-rich water that move rapidly downslope. Triggered by seismic activity, landslides, or slope collapses, they act like underwater avalanches. As sediments increase, water becomes heavier and more opaque. These currents shape the ocean floor by eroding it and forming submarine canyons. Sediments settle in layers—coarse to fine—playing a vital geological role in deep-sea sedimentation and seabed formation.

Factors Responsible for Turbidity Currents:

- **Hyperpycnal Plume:** Occurs when sediment-laden river water becomes denser than seawater.
- **Reservoir Sedimentation:** Turbidity currents can block reservoir inflows/outflows.
- **Underwater Earthquakes:** Tectonic movements disturb sediments, triggering flows.
- **Canyon-Flushing:** Older sediments can sustain turbidity flows.
- **Slumping:** Overloaded sediments slide off continental shelves.
- **Convective Sedimentation:** Dense river plumes create bottom-driven currents.

Submarine Canyons

- Submarine canyons are steep, V-shaped valleys stretching from continental shelves to deep ocean floors. Formed mainly by erosional forces like turbidity currents, they mirror river canyons on land. Globally, over 9,477 submarine canyons cover nearly 11% of continental slopes.

Axial Seamount

- ### Context
- Scientists are closely watching Axial Seamount, which may erupt soon for the first time in 10 years.

Axial Seamount: Key Facts

- Located 300 miles off Oregon's coast on the Juan de Fuca Ridge
- A shield volcano with a caldera at its summit, it sits 1,400 meters below sea level.
- Formed by a hotspot pushing magma upward through the crust.
- Known as the most active submarine volcano in the northeast Pacific, with eruptions in 1998, 2011, and 2015.
- Home to NeMO, the world's first underwater volcanic observatory.
- Integral to the Ocean Observatories Initiative.
- Not dangerous to humans but essential for studying marine geology.

Axial Seamount Features

- **Hydrothermal Vents:** Expel mineral-rich water from magma-heated sources.
- **Ecosystem Base:** Microbes feeding on gases sustain deep-sea life.
- **Marine Species:** Hosts tubeworms, crabs, clams, fish, and octopuses.
- **Scientific Importance:** Crucial for research on seafloor geology and ecosystems.

Alcatraz Island

Context

- The U.S. President has directed plans to reconstruct Alcatraz, the famed prison closed for over 60 years.

About Alcatraz Island

- Located in San Francisco Bay, the 22-acre island is nicknamed "The Rock."

- Sold to the U.S. in 1849 and home to California's first lighthouse (1854).
- Became a military fort and later a prison in 1861.
- Named the Pacific Branch of the U.S. Military Prison in 1907.
- Converted to a federal prison from 1934 to 1963 for high-risk criminals.
- Housed around 260 inmates in 10x4.5 ft cells.
- Known for its harsh conditions and strong currents that discouraged escape.
- Closed due to high maintenance costs in 1963.
- Since 1972, it's a key part of the Golden Gate National Recreation Area and a top tourist attraction.

Pakal Dul Project

Context

- India has fast-tracked transmission line clearance for the 1,000 MW Pakal Dul hydropower project in Jammu & Kashmir.

About Pakal Dul Project

- Located on the Marusudar River, a Chenab tributary, in Kishtwar.
- A run-of-the-river hydroelectric project with 1,000 MW capacity.
- Uses a concrete-face rockfill dam.
- Expected to generate ~3,330 million energy units yearly.
- Executed by CVPPL with NHPC and JKSPDC (49% each), PTC (2%).
- Offers 12% free power and waived water charges for J&K for 10 years.
- J&K holds the first right to purchase power generated.
- Aids India's goal of 450 GW renewable energy by 2030.
- Supports regional development and economic upliftment.

About Marusudar River

- The longest tributary of the Chenab, sourced from the Nunkun Glacier.
- Flows 133 km through Kishtwar before joining the Chenab at Bhandarkoot.

Shakargarh Bulge

Context

- Pakistan's army was recently found concentrating armored vehicles in the Shakargarh Bulge.

What is the Shakargarh Bulge?

- The Shakargarh Bulge is a flat, strategically significant land area in Pakistan's Sialkot region, flanked by the Ravi and Chenab Rivers. Its terrain, with easy road and rail access, enables large-scale troop movement and offers operational depth. Capturing this region would have disrupted Indian connectivity with Jammu and Kashmir, shifting the balance on the western front.

Significance of Shakargarh Bulge

- India's defense of the Jammu–Pathankot axis was crucial during conflicts to maintain regional control. The area was the site of one of the largest post-WWII tank battles. Strategically, the bulge remains sensitive due to its location, access routes, and historical military relevance in Indo-Pak conflicts.

Madku Island

Context

- The Chhattisgarh High Court is overseeing the preservation and development of MadkuDweep, an island of historical and spiritual importance.

Location:

- Madku Island lies on the Shivnath River in Bilaspur, Chhattisgarh. Also known as Harihara-Kshetra and Kedar Dweep, it holds mythological value for being where Lord Vishnu and Lord Shiva are believed to have met. It's associated with Sage Mandukya, author of the *Mandukya Upanishad*.

Archaeological Significance:

- Excavations in 2011 revealed Kalachuri-era temples, inscriptions, and Brahmi/Shankhalipi scripts. The site features 20 reconstructed temples with ancient Shivlings, idols, and temple ruins. Portrait sculptures and 9th-century relics reinforce its spiritual legacy.

Cultural Significance:

- Since 1909, Madku hosts the Masihi Mela, reflecting Hindu-Christian harmony. George E. Miller's novel *Prem Masih of Damoh* is based on the fair's vibrancy.

Protective Status:

- Declared a state-protected archaeological site by the Chhattisgarh government.

Yala Glacier

Context

- On May 12, 2025, plaques by authors Manjushree Thapa and Andri Snaer Magnason were placed near Nepal's rapidly melting Yala Glacier in Langtang Valley, symbolizing the threat to one of the Himalaya's most studied glaciers.

Features of Yala Glacier:

- Located in Langtang Valley, Yala is monitored by the World Glacier Monitoring Service.
- It's vital for studying the Himalayan cryosphere and water supply for 240 million people.
- Due to rapid mass loss, it no longer qualifies for observation.
- **Glacier Retreat:** Yala has shrunk 36% and retreated 680 meters (1974–2021). Hindu Kush glaciers are melting twice as fast as the global average.
- **Endangered Glaciers:** Venezuela's Pico Humboldt and France's Glacier Sarenne have vanished. China's Dagu Glacier may disappear by 2030.

- **Melting Glacier Impacts:** Include disrupted ecosystems, glacial lake outburst floods, and a climate feedback loop accelerating global warming.
- **Initiatives:** The UN's 2025 Glacier Year, India's Himalayan Mission, and global efforts like WWF's Living Himalayas aim to protect the cryosphere.

Palaeofires

Context

- Scientists uncovered evidence of **palaeofires** from the **Permian Period (~250 million years ago)** in the **Godavari Basin**, offering insights into prehistoric wildfire patterns.

What are Palaeofires?

- Palaeofires are ancient wildfires recorded in geological history, influencing vegetation, climate, and coal formation since the Late Silurian.

Features of Palaeofires:

- Using techniques like Raman and FTIR spectroscopy, scientists identified charcoal types and confirmed high oxygen levels in the Permian made Earth fire-prone.

Ancient Palaeofires in the Godavari Basin:

- The study differentiated in situ and ex situ charcoal and linked fire patterns to sea-level changes.

Role of Palaeofires in Earth's Past:

- They influenced Gondwana's coal, vegetation, climate, and long-term carbon storage.

9. GOVERNMENT SCHEMES

9.1   SHORT ARTICLES

Modified Interest Subvention Scheme (MISS)

Context

- The Union Cabinet has approved the continuation of the Interest Subvention (IS) component of the Modified Interest Subvention Scheme (MISS) for 2025-26.

About Modified Interest Subvention Scheme

- It is a **Central Sector Scheme launched in 2006-07** to **provide short-term credit** to farmers at subsidised interest rates.
- It is **implemented by the Reserve Bank of India (RBI) and the National Bank for Agriculture and Rural Development (NABARD)** through a network of public and private sector banks, regional rural banks, and cooperative banks.

> In the Union Budget 2025-26, the loan limit under the KCC was increased from ₹3 lakh to ₹5 lakh. This enhanced limit is structured to cover **₹3 lakh for crop-related expenses and an additional ₹2 lakh for allied agricultural activities.**

How the Scheme Benefits Farmers?

- Farmers can avail of short-term **agricultural loans up to ₹3 lakh for activities such as purchasing seeds and fertilisers.**
- These loans are provided through the Kisan Credit Card at a **subsidised interest rate of 7%.**
- The **government provides a 1.5% interest subsidy directly to the lending institutions,** which in turn pass on the benefit to the farmers.
- To encourage financial discipline, the scheme includes a Prompt Repayment Incentive (PRI). **Farmers who repay their loans on time receive an additional 3% interest subvention,** effectively reducing their interest rate to just 4%.

- For loans related to animal husbandry and fisheries, the interest subvention is applicable for credit up to ₹2 lakh.

National Apprenticeship Promotion Scheme (NAPS) and National Apprenticeship Training Scheme (NATS)

Context

- The Central Apprenticeship Council (CAC) has recommended a 36% increase in the stipends for apprentices under two central government schemes: the National Apprenticeship Promotion Scheme (NAPS) and the National Apprenticeship Training Scheme (NATS)

National Apprenticeship Promotion Scheme (NAPS)

- Overseen **by the Ministry of Skill Development and Entrepreneurship (MSDE),** NAPS was launched in 2016 to promote apprenticeship training across the country.
- **Eligibility Criteria:** It is inclusive, covering candidates with qualifications ranging from 5th grade to graduates.
- It places a special emphasis on encouraging Micro, Small, and Medium Enterprises to hire apprentices.
- The **government reimburses 25% of the stipend paid to apprentices**, up to a maximum of ₹1,500 per month per apprentice.

It also shares the cost of basic training, covering up to ₹7,500 per fresher apprentice.

- The government's portion of the stipend is transferred directly to the apprentice's bank account.
- Training includes a short basic training component followed by on-the-job training for a duration of 6 to 36 months, depending on the trade.

National Apprenticeship Training Scheme (NATS)

- **Managed by the Ministry of Education,** NATS focuses on technically qualified youth.

- The scheme is designed for students holding a degree or diploma in engineering, technology, or vocational courses.
- The **government contributes 50% of the minimum stipend amount paid to the apprentices,** which is reimbursed to the employer.
- The training duration is between six months and one year, after which apprentices receive a Certificate of Proficiency from the Government of India, which is recognised as valid work experience.
- **Eligibility Criteria:** Candidates must be at least 16 years old, hold the requisite educational qualifications, be Indian citizens, and have no prior work experience.
- Training is provided at Central and State PSUs, as well as private companies with robust training facilities.

Credit Guarantee Scheme for Startups (CGSS)

Context

- The Union government has expanded its Credit Guarantee Scheme for Startups (CGSS) to ease access to credit for budding entrepreneurs.

Credit Guarantee Scheme for Startups (CGSS)

- It was **launched in October 2022 under the Startup India initiative** to help young and innovative businesses to secure loans without the need for collateral.
- It encourages banks and financial institutions to lend to startups by covering a portion of the loan if the borrower defaults. This reduces the risk for lenders, making them more willing to finance new and unproven ventures.
- The scheme is managed by the National Credit Guarantee Trustee Company Ltd. (NCGTC).

Recent Development

- The government has **doubled the loan guarantee limit from ₹10 crore to ₹20 crore per startup**.
- To de-risk lending to startups, the government has increased its guarantee coverage. For loans up to ₹10 crore, the coverage is now 85% of the default amount. For loans

exceeding ₹10 crore, the guarantee stands at 75%.

- The **Annual Guarantee Fee (AGF), which startups pay to avail the benefits of the scheme, has been halved from 2% to 1% for startups operating in 27 "Champion Sectors".** These sectors, identified under the 'Make in India' initiative, include high-growth areas like biotechnology, renewable energy, and advanced manufacturing.

National Scheme for Industrial Training Institute (ITI) Upgradation and Setting Up Of Five National Centres Of Excellence For Skilling

Context

- The Union Cabinet has approved a ₹60,000 crore scheme to upgrade Industrial Training Institutes (ITIs) and establish five National Centres of Excellence for Skilling.

Details

- This **Centrally Sponsored Scheme,** titled the "National Scheme for ITI Upgradation and Setting up of Five National Centres of Excellence for Skilling," aims to align the country's vocational education system with the dynamic needs of the industry and train a future-ready workforce.
- The initiative, announced in the Union Budgets of 2024-25 and 2025-26, will be implemented over five years with a total outlay of ₹60,000 crore, will be collaboratively funded by the Central Government (₹30,000 crore), State Governments (₹20,000 crore), and the industry (₹10,000 crore).
- **50% of the central government's share will be co-financed by the Asian Development Bank and the World Bank.**
- The initiative builds on the foundations of earlier skill development programs like the National Skill Development Corporation (NSDC), which has trained millions of individuals.

Key Pillars of the Scheme

- Upgrade 1,000 government ITIs using a "hub-and-spoke" model; 200 ITIs developed as

hubs, with the remaining 800 acting as spokes.

- Strengthen five existing National Skill Training Institutes (NSTIs) in Bhubaneswar, Chennai, Hyderabad, Kanpur, and Ludhiana, transforming them into National Centres of Excellence (NCOEs).
- The NCOEs will offer advanced training programs aligned with the National Skill Qualification Framework (NSQF) levels 5 to 8. The focus will be on high-end technical skills in emerging sectors like Artificial Intelligence (AI), cybersecurity, and digital pattern-making, which are currently in high demand.
- Train 20 lakh youth over the next five years to meet the specific skill demands of high-growth sectors such as electronics, automotive, and renewable energy.

Cashless Treatment Scheme

Context

- The Union Government has launched the Cashless Treatment of Road Accident Victims Scheme, 2025.

Cashless Treatment of Road Accident Victims Scheme

- It **guarantees free and immediate medical treatment for any person injured in a road accident** involving a motor vehicle, anywhere in India.
- It is a universal scheme, meaning its benefits extend to all victims, irrespective of their nationality, income level, or insurance status.
- The scheme provides cashless treatment up to a cap of **₹1.5 lakh per person per accident**, applicable for a maximum of **seven days** from the time of the accident.
- It also enhances compensation for victims of hit-and-run accidents, providing **₹2 lakh to the family in case of death** and **₹50,000 for grievous injuries**.

Governance

- A robust, technology-driven ecosystem monitors the scheme's implementation, led by the **National Health Authority (NHA)**.
- **National Level:** A **17-member steering committee**, chaired by the Union Road

Secretary, provides overall direction and oversight. This committee includes the CEO of the NHA and representatives from the Ministries of Home Affairs, Finance, and Health, as well as state representatives, insurance bodies, and NGOs. It is mandated to meet at least twice a year.
- **State Level:** Each state's **State Road Safety Council** acts as the nodal agency. Its responsibilities include onboarding hospitals, managing records, and ensuring timely payments.

Jal Jeevan Mission (JJM)

Context

- The Union government has initiated a large-scale, nationwide inspection of the **Jal Jeevan Mission (JJM)**.

About Jal Jeevan Mission

- It was **launched in 2019, by the Ministry of Jal Shakti, with the aim to provide 55 litres of tap water to every rural household per capita per day regularly by 2024**, with an initial budget of **₹3.6 lakh crore**. This was to be shared between the Centre (₹2.08 lakh crore) and the States (₹1.52 lakh crore).
- The total cost of the approved 6.4 lakh water supply schemes has increased to **₹8.29 lakh crore**—more than double the original estimate.
- The Jal Shakti Ministry requested an additional ₹2.79 lakh crore to complete the mission by an extended deadline of 2028. However, the Expenditure Finance Committee (EFC), led by the Union Expenditure Secretary, raised serious concerns and approved only ₹1.51 lakh crore, this 46% cut was prompted by the Finance Ministry questioning cost inflations.

A Nationwide Inspection

- **100 teams of Central Nodal Officers (CNOs)**, comprising senior bureaucrats like Joint Secretaries and Directors, will scrutinise 183 JJM schemes across 135 districts in 29 states and Union Territories.
- **The mandate of the Inspection:**
  - o **Verify Costs:** Compare the original sanctioned costs with the revised estimates and demand written

justifications from state officials for any increases.

- o **Assess Quality:** Check if the quality of work and materials used (like pipelines) matches the approved plans. This will involve physical verification, including on-site excavations.
- o **Evaluate Functionality:** Confirm that the installed taps are functional and deliver the promised **55 litres of water per capita per day (lpcd)**.

- The teams will investigate public grievances regarding delays or poor execution and will use a detailed questionnaire prepared by the Jal Shakti Ministry to ensure a uniform and comprehensive assessment.

Samridh Scheme
Context
- The recent arrest of an individual for allegedly defrauding the Ministry of Electronics and Information Technology (MeitY) of over ₹3 crore under the SAMRIDH scheme.

About SAMRIDH Scheme
- SAMRIDH, which stands for **Startup Accelerator of MeitY for Product Innovation, Development, and Growth**, was launched by MeitY in August 2021. It was established under the broader vision of the **National Policy on Software Products, 2019**.
- The goal is to support **300 tech startups over three years**, propelling India towards global leadership in technology and entrepreneurship.

Key Objectives
- It strengthens both existing and upcoming accelerators (organizations that specialize in nurturing startups) by providing them with the necessary resources to select and groom high-potential IT startups.
- It helps startups transition from the proof-of-concept stage to a scalable business model by connecting them with customers, investors, and international markets.
- It offers crucia**l early-stage funding of up to ₹40 lakh per startup.**

- It encourages startups to develop cutting-edge solutions across a wide range of critical sectors, including health tech, ed-tech, agri-tech, fintech, Software as a Service (SaaS), and sustainability.

Gyan Bharatam Mission
Context
- The Prime Minister launched the revamped National Manuscripts Mission (NMM) through the new Gyan Bharatam Mission.

National Manuscripts Mission (NMM)
- It was **originally established in 2003 by the Ministry of Culture**. Its primary mandate was to locate, document, preserve, and provide access to the Indian manuscripts.
- A manuscript is a handwritten document of significant scientific, historical, or cultural value that is at least **75 years old**. These are written on various materials like palm leaves, paper, birch bark, or cloth.
- India is home to an estimated **10 million manuscripts**, one of the largest and most diverse collections in the world. These texts cover an astonishing range of subjects, including philosophy, medicine (Ayurveda), mathematics, astronomy, art, and literature.

Gyan Bharatam Mission
- It will conduct extensive pan-India surveys to locate and identify manuscripts lying in various repositories and private hands.
- It will create a detailed **digital catalogue** or a national register for every manuscript, documenting its script, language, subject matter, age, and physical condition.
- It will employ a blend of **modern scientific techniques** and **indigenous conservation methods** to treat and preserve fragile manuscripts. This includes processes like lamination, restoration, de-acidification, and pest control.
- A dedicated cadre of trained **conservationists and linguists** will work to restore damaged texts and preserve the invaluable knowledge contained within them.

Campus Calling

Context

- The National Commission for Women (NCW) has launched the 'Campus Calling' programme'.

About 'Campus Calling' Programme

- It is a comprehensive sensitization and awareness campaign launched at Swami Vivekanand Subharti University (SVSU) in Meerut, the programme is set to be rolled out in over **1,000 universities and colleges** across India.
- The goal is to create safe and inclusive educational environments by empowering young people and college students with knowledge about gender sensitivity, sexual harassment prevention, and cyber safety.
- To maximize its reach and impact, the **NCW is collaborating with Yuvamanthan**, a youth development platform, to engage students effectively.
- **Each participating institution will select four students (two male and two female) to act as ambassadors**, trained to lead peer-to-peer sensitization efforts on their campuses, organizing workshops, discussions, and campaigns to drive change from within the student community.