

# THE IAS GAZETTE

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**APTI PLUS**

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



ND EDITION

## Viksit Bharat

Guarantee For Rozgar  
And Ajeevika Mission  
(GRAMIN)



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### Other topics

- India and New Zealand Free-Trade Agreement (FTA)
- Green Tug Transition Programme
- Indian Statistical Institute (ISI) Act, 1959

A MONTHLY PERIODICAL FOR ASPIRANTS OF UPSC CSE

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# 1. POLITY & GOVERNANCE

## 1.1 SUPREME COURT GUIDELINES ON CHILD TRAFFICKING

### Context

- The Supreme Court described child trafficking and commercial sexual exploitation as a "deeply disturbing reality," issuing guidelines for courts to treat trafficked children as injured witnesses.

### Child Trafficking in India

- Child trafficking involves the recruitment, transportation, and exploitation of children for purposes like forced labour, sexual exploitation, and organ removal.
- In **2022**, a total of **2,250 cases of human trafficking** were registered in the country (Source: NCRB)
- The National Human Rights Commission (NHRC) estimates that approximately 40,000 children are abducted in India annually, with roughly 11,000 remaining untraced.

### Recent Supreme Court's Pro-Victim Guidelines

The Supreme Court has directed all courts to adopt a more empathetic and realistic approach while handling cases of child trafficking. Key guidelines include:

- **Treating Victim as an Injured Witness:** The testimony of a trafficked child must be given significant weight, similar to that of an injured witness. Her sole testimony, if found credible, can be sufficient for a conviction.
- **Overlooking Minor Inconsistencies:** Considering the trauma and complexity of the crime, courts should not dismiss a victim's testimony due to minor inconsistencies or the inability to recall precise details of the trafficking chain.
- **Sensitivity to Vulnerability:** Judicial assessment must account for the victim's socio-economic background, cultural context, and the vulnerabilities that made her susceptible to trafficking.

- **Preventing Secondary Victimization:** The legal process must protect the victim from further trauma. This includes ensuring dignified treatment and avoiding insensitive questioning during court proceedings.

### Constitutional and Legal Framework to combat child trafficking

- **Constitutional Provision:** Articles 23 and 24 of the Constitution prohibit human trafficking and forced labor, making them punishable offenses, and also prohibit the employment of children under the age of 14 in factories, mines, or other hazardous work.
- **Bharatiya Nyaya Sanhita (BNS), 2023 (Sec 143 & 144):** Stricter penalties for trafficking, including life imprisonment; explicitly recognizes beggary as exploitation.
- **Immoral Traffic (Prevention) Act, 1956 (ITPA):** Primary law against trafficking for commercial sexual exploitation.
- **Protection of Children from Sexual Offences (POCSO) Act, 2012:** Special, child-friendly law protecting children from sexual abuse and exploitation.
- **Juvenile Justice (Care and Protection of Children) Act, 2015:** Framework for care and rehabilitation of vulnerable children, including trafficked victims.

### Key Challenges in Combating Child Trafficking

- **Socio-Economic Drivers:** Deep-rooted poverty, lack of educational and employment opportunities, and distress migration create a constant pool of vulnerable children for traffickers to exploit.
- **Organised and Covert Networks:** Trafficking rings operate through complex, layered structures across source, transit, and destination points, often exploiting porous

international borders (e.g., India-Nepal). This makes detection and prosecution difficult.

- **Misuse of Technology:** Traffickers increasingly use social media and online platforms for 'virtual recruitment'—luring children with false promises of jobs, modelling contracts, or relationships.
- **Data and Coordination Gaps:** Lack of real-time, integrated data on missing and trafficked children hampers effective tracking and rescue operations. Inter-state police coordination remains a significant hurdle.
- **Fear and Stigma:** Victims often remain silent due to fear of traffickers, social stigma, and trauma. Insensitive handling by authorities can lead to re-traumatisation and discourage them from seeking justice.

### National Commission for Protection of Child Rights (NCPCR) recommendations to prevent trafficking

- **Identify hotspots and vulnerable families** for welfare benefits (MGNREGA, PDS, etc.). Strengthen **Village Child Protection**

**Committees (VCPCs) under Mission Vatsalya** as local vigilance.

- Train Railway Protection Force (RPF), Government Railway Police (GRP), and transport staff to spot suspicious child movements. Display child helpline numbers **1098** and **112** at transit points like railway stations and bus stands.
- Regularly inspect exploitation sites (factories, brick kilns, placement agencies). Provide immediate care for rescued children under the JJ Act, 2015. Use the **GHAR – GO Home and Re-Unite** portal (NCPCR) for digital tracking and repatriation of children.

### Conclusion

- Combating child trafficking requires a multi-pronged strategy: sensitive justice, community vigilance, poverty reduction via welfare schemes, and technology for tracking/rehabilitation. This demands coordinated government, civil society, and community effort to protect children's rights.

## 1.2 VIKSIT BHARAT: G RAM G BILL

### Context

- The President of India has given assent to the Viksit Bharat—Guarantee for Rozgar and Ajeevika Mission (Gramin) (VB—G RAM G) Bill 2025.

### About VB—G RAM G Bill 2025

- It replaced the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005.
- The new framework introduces fundamental changes to the structure, financing, and implementation of rural employment generation.

	MGNREGA 2005	VB—G RAM G Bill 2025
<b>Nature of Guarantee</b>	<b>Rights-based &amp; Demand-Driven:</b> Legal right to 100 days of unskilled work upon demand.	<b>Supply-Driven &amp; Budget-Capped:</b> Work provided based on pre-planned projects and annual budget allocations by the Centre.
<b>Guaranteed Workdays</b>	<b>100 days</b> per rural household. Additional 50 days in notified drought/calamity areas.	Increases guarantee to <b>125 days</b> per household.
<b>Coverage</b>	<b>Universal:</b> Applies to all rural areas of the country by default.	<b>Conditional &amp; Selective:</b> Only in rural areas notified by the Union Government.

<b>Cost-Sharing Pattern</b>	Centre bears <b>100% of unskilled wage cost and 75% of material cost</b> . States cover 25% material cost and unemployment allowance.	Revised to <b>60:40 (Centre:State)</b> for most states and 90:10 for North-Eastern/Himalayan states for all components.
<b>Planning</b>	Bottom-up planning by Gram Panchayats based on local demand.	Mandates <b>Viksit Gram Panchayat Plans (VGPPs)</b> using spatial technology, integrated with <b>PM Gati Shakti</b> for planned asset creation.
<b>Flexibility</b>	Operates year-round based on demand.	States can pause the program for up to <b>60 days</b> during peak agricultural seasons to ensure farm labour availability.

### The new Framework introduces strategic improvements over the previous model:

- **Enhanced Asset Quality and Focus:** Shifts the focus from simple employment creation to generating durable, productive assets through strategic planning and synergy with national infrastructure initiatives like PM Gati Shakti.
- **Fiscal Management and Predictability:** It adopts a supply-driven, budget-capped expenditure model, giving the government greater control over spending, unlike the previous open-ended financial liability.
- **Balancing the Labour Market:** An "agricultural pause" provision is included to ensure the availability of rural labour for critical sowing and harvesting periods, addressing farm labour shortages.
- **Increasing State Accountability:** By raising the states' financial contribution (to 40%), it aims to promote greater ownership, supervision, and better quality control in project execution.
- **Technological Integration for Efficiency:** Advanced technology, including spatial planning, AI-based monitoring, and biometric attendance, will be utilized to reduce financial leakages and enhance administrative efficiency.

### Concerns raised over new framework

- **Dilution of Rights:** The shift from a legal entitlement to a supply-driven benefit diminishes workers' rights and deviates from the original "employment on demand"

principle, undermining the spirit of Article 41 (Right to Work).

- **Weakening of Safety Net:** A budget-capped model may lose the flexibility that the scheme historically had as a "shock-absorber" during crises like the COVID-19 pandemic.
- **Increased State Financial Burden:** The higher 40% financial contribution for states could strain poorer states, leading to delayed wages and a reduction in sanctioned work.
- **Risk of Exclusion:** This includes **Geographical Exclusion** by limiting the program to centrally designated areas, and **Technological Exclusion** due to over-reliance on digital systems in areas with poor connectivity, marginalizing vulnerable populations.

### Way Forward

- The reform aims to make rural employment proactive, creating productive assets instead of just acting as a passive safety net. However, it also risks undermining the rights-based guarantee.
- Achieving a balance that retains the demand-driven core for vulnerable households while integrating a planned, outcome-oriented approach for asset creation is crucial.
- The success of this transition will depend on transparent implementation, adequate safeguards against exclusion, and ensuring that poorer states are not fiscally disadvantaged.

## 1.3 SHORT ARTICLES

### Central Information Commission

#### Context

- The President appointed Raj Kumar Goyal as Chief Information Commissioner.

#### About the Central Information Commission (CIC)

- The CIC is a **statutory body established in 2005 under the Right to Information Act 2005**.
- Its **authority extends to all central public authorities**, including government offices, financial institutions, and public sector undertakings under the Central Government and Union Territories.
- It **functions as a quasi-judicial body**, with powers equivalent to a civil court to hear complaints and appeals related to information access.
- The Commission consists of one **Chief Information Commissioner (CIC)** and not more than **ten Information Commissioners (ICs)**, appointed by the **President of India**.
- As per the **RTI (Amendment) Act, 2019**, the tenure and service conditions of the Chief IC and ICs are for such a term as may be **prescribed by the Central Government** or until they attain the age of **65 years**, whichever is earlier.
- They are **not eligible for reappointment**.

#### Key Powers and Functions

- **Complaint & Appeal Adjudication:** To receive and inquire into complaints from citizens regarding non-disclosure, delayed, or misleading information.
- **Civil Court Powers:** Can summon individuals, demand documents, and conduct inquiries.
- **Record Examination:** Has the power to examine any record held by a public authority. No record can be withheld from it during an inquiry.
- **Reporting:** Submits an annual report to the Central Government on the implementation of the RTI Act, which is then laid before both Houses of Parliament.

### Denotified Tribes to be Enumerated in Census 2027

#### Context

- The Ministry of Social Justice and Empowerment recommended including Denotified Tribes (DNTs) in the Census 2027.

#### Who are Denotified Tribes (DNTs)?

- DNTs are communities that were notified as '**Criminal Tribes**' under the **Criminal Tribes Act of 1871** during the British colonial rule.
- This Act gave the police wide-ranging powers to arrest and monitor the movements of entire communities designated as "habitually criminal."
- After Independence, based on the recommendations of the **Ayyangar Committee (1949)**, this Act was repealed, and these communities were "de-notified" in **1952**.
- However, the historical stigma persists, and they are often stereotyped and face social exclusion.

#### Key Challenges and Status

- **Lack of Official Data:** DNTs lack official population data post-independence, last enumerated in colonial censuses (e.g., 1931). The Renke Commission (2008) estimated their population at 10-12 crore.
- **Issues with Classification:** Exclusion from SC/ST/OBC lists denies many communities reservation and affirmative action benefits, leading to further marginalization.
- **Socio-Economic Vulnerabilities**
  - **Social Stigma:** The "criminal" tag from the colonial era continues to fuel discrimination and police harassment.
  - **Economic Deprivation:** Lack of stable livelihood opportunities, landlessness, and limited access to financial credit.
  - **Exclusion from Services:** Their mobile lifestyle results in a lack of permanent address proof, hindering access to education, healthcare (like immunization), and social security schemes.

- **Low Literacy:** Constant migration disrupts children's education, leading to high dropout rates and low literacy levels.

#### Government Schemes for the welfare of DNTs

- **SEED Scheme:** The **Scheme for Economic Empowerment of DNTs (SEED)** was launched in 2022 by the Ministry of Social Justice and Empowerment. Its four key components are:
  - **Educational Empowerment:** Providing coaching for competitive exams.
  - **Health:** Health insurance through PM-JAY.
  - **Livelihoods:** Financial assistance for skill development and income generation.
  - **Housing:** Financial aid for housing under PMAY.
- **DWBDNCs:** The government established the **Development and Welfare Board for Denotified, Nomadic and Semi-Nomadic Communities** in 2019 to formulate and implement welfare and development programmes for these communities.

## Suspension of Sentence in Child Protection Cases

### Context

- The Supreme Court stayed a Delhi High Court judgment that had suspended the life sentence of former MLA Kuldeep Singh Sengar in the Unnao rape case (2017).

### About Suspension of a Sentence

- When a person is convicted, their sentence begins immediately, but a higher court can choose to suspend the sentence and grant bail while the appeal is pending.
- This power is outlined in **Section 432 of the Bharatiya Nagarik Suraksha Sanhita (BNSS) 2023**.

### Supreme Court guidelines for Suspension of a Sentence

- **For Short Sentences:** Suspension is generally the norm. The court should grant it unless there are strong reasons against it, as held in the *Bhagwan Rama Shinde Gosai vs State of Gujarat (1999)* case.
- **For Heinous Crimes (e.g., Life Imprisonment):** Suspension is a **rare exception**. It requires a

detailed assessment and the court must provide written reasons. Key conditions include:

- The convict must demonstrate a "**palpable error**"—a clear and obvious mistake in the trial court's judgment suggesting a high chance of acquittal (*Omprakash Sahni vs. Jai Shankar Chaudhary & Anr., 2023*).
- **Long incarceration alone is not sufficient grounds** for suspension in grave offences like rape and murder. The court must balance the convict's liberty with societal interest (*Kishori Lal vs. Rupa & Ors., 2004*).
- The **gravity and context of the crime** must be thoroughly considered.

## Mercy Petition

### Context

- The President of India rejected the mercy petition of a convict who was sentenced for the 2012 kidnapping, rape, and murder of a two-year-old girl in Maharashtra.

### About Mercy Petition

- It is a formal request made by a convict to the President or the Governor of a State to grant clemency.
- This power acts as a final safeguard against potential miscarriages of justice, particularly in cases involving the death penalty, upholding the spirit of **Article 21 (Right to Life)**.
- **Constitutional Basis:**
  - **Article 72:** Empowers the **President** to grant pardon, reprieve, respite, or remission of punishment, or to suspend, remit, or commute the sentence of any person convicted of any offense. This power is extensive and covers sentences by Court Martial and death sentences.
  - **Article 161:** Grants similar powers to the **Governor of a State** for offenses against any law relating to a matter to which the executive power of the State extends.
- **Executive Power:** The Supreme Court in *Maru Ram vs Union of India (1981)* clarified that the President and Governor exercise these powers based on the **aid and advice of the Council of Ministers**, not personal discretion.

- **Judicial Review:** The Supreme Court, in *Kehar Singh vs Union of India (1988)*, held that the President's decision is subject to limited judicial review. Courts can intervene if the decision is arbitrary, irrational, mala fide, or discriminatory, but cannot re-examine the merits of the case.

## SC declares Involuntary Narco Test as Unconstitutional

### Context

- The Supreme Court has clarified that forcing an individual to undergo Narcco test is unconstitutional as it violates core principles of personal liberty and self-incrimination.

### What is a Narco Test?

- It is a forensic investigative technique where psychoactive drugs, such as Sodium Pentothal or Sodium Amytal, are administered to a subject to induce a semi-conscious, hypnotic state.
- **Purpose:** Used in complex investigations to find leads or extract concealed information, it is an evidence collection tool, not a truth-telling device.

### Judicial Intervention

In *Selvi & Ors. vs State of Karnataka (2010)*, Supreme court laid down clear principles to balance the needs of investigation with the fundamental rights of the accused.

- **Consent is Mandatory:** No individual can be forced to undergo these tests. They can only be administered after receiving the **free and informed consent** of the person.
- **Violation of Rights:** The court held that forcing these tests is a violation of both **Article 20(3)** and **Article 21**.
  - The 'Golden Triangle' of the Constitution—**Articles 14, 19, and 21**—provides a strong defence against any arbitrary state action that curtails personal liberty.
- **Limited Evidentiary Value:** The results of a narco test are **not admissible as primary evidence** in court. The statement made by the accused during the test cannot be treated as a confession.

- However, any material evidence or facts discovered as a result of information obtained during a voluntary test may be admitted as evidence.

## Shanti Bill 2025

### Context

- The SHANTI Bill 2025 (Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India) received Presidential assent.

### Key Provisions of the SHANTI Bill 2025

It introduces several transformative changes to India's nuclear governance, replacing the **Atomic Energy Act, 1962**, and the **Civil Liability for Nuclear Damage (CLND) Act, 2010**.

- **Private Sector Inclusion:** Abolishes the operational monopoly of the state-owned NPCIL, allowing private Indian companies and joint ventures to build, own, and operate nuclear power plants to attract capital and improve efficiency.
- **Government's Strategic Oversight:** Government retains exclusive control over critical, sensitive areas essential for national security, including nuclear fuel production, heavy water manufacturing, and radioactive waste management.
- **Independent Regulator:** Atomic Energy Regulatory Board (AERB) will gain full statutory status, transitioning from the Department of Atomic Energy to become an independent body accountable directly to Parliament.
- **Revised Liability Structure:** Supplier liability under the CLND Act 2010 is eliminated. The new framework mandates sole and strict liability on the nuclear plant operator, aligning with international standards (Paris/Vienna Conventions). A liability cap, determined by the plant's capacity, is introduced to reduce investor financial risk.
- **Specialized Dispute Resolution:** An Atomic Disputes Tribunal to ensure swift, expert, and certain resolution of disputes, thereby improving the regulatory environment for investors.

- **Focus on Technological Advancement:**  
Accelerate the adoption of advanced technologies like Small Modular Reactors (SMRs) and indigenous reactor designs to help India meet its clean energy targets.

**India's nuclear energy sector**

- India currently has 25 operational nuclear reactors (7 plants, 8.88 GW capacity), with plans to increase capacity to **22.48 GW by 2031-32** and **100 GW by 2047**.
- **Nuclear power is the fifth-largest source of electricity in India** (after coal, hydro, solar, and wind), and accounting for about **3%** of the total power generation.
- Nuclear power program is largely indigenous and managed by the public sector enterprise, the **Nuclear Power Corporation of India Limited (NPCIL)**, under the Department of Atomic Energy (DAE).
- The Union Budget 2025-26 launched a "**Nuclear Energy Mission**" with a **₹20,000 crore allocation** for R&D and the goal of operationalizing at least five indigenous SMRs (Bharat Small Reactors or BSRs) by 2033.

**National Technology Readiness Assessment Framework (NTRAF)**

Context

- The office of the **Principal Scientific Adviser (PSA)** to the Government of India, in collaboration with the **Confederation of Indian Industry (CII)**, has unveiled the National Technology Readiness Assessment Framework (NTRAF).

About National Technology Readiness Assessment Framework (NTRAF)

- This framework establishes a unified, standardized methodology to assess the maturity level of indigenous technologies, from the initial research phase to their final commercial deployment.
- NTRAF is built upon the globally accepted **9-level Technology Readiness Levels (TRL)** scale, which was originally developed by NASA.
  - This scale provides a common and objective language for researchers, industries, and investors to understand the precise stage of a technology's development, moving away from subjective evaluations to an evidence-based system.

Stage	TRL Levels	Description
1. Basic Research	TRL 1-3	Covers basic scientific research, formulation of the concept, and analytical or experimental proof-of-concept.
2. Technology Development	TRL 4-6	Involves validating the component/prototype in a laboratory environment, followed by validation in a relevant, simulated operational environment.
3. System Development & Deployment	TRL 7-9	Focuses on demonstrating the system prototype in an operational environment, proving the actual system, and its successful deployment in a real-world mission.

Significance: Why India Needs a Standardized Framework

- **Bridging the 'Valley of Death':** India's innovation ecosystem struggles with the '**Valley of Death**'—the gap between lab validation (TRL 4) and operational demonstration (TRL 7). Many promising technologies fail here due to a lack of funding.

- NTRAF provides a trusted language for innovators and investors, thereby **de-risking investments** in deep-tech and making it easier to secure funding.
- **Addressing Low R&D Expenditure:** India's Gross Expenditure on R&D (GERD) has been stagnant at around **0.6% of its GDP**, which is lower than major economies like the USA (3.45%) and China (2.4%).
  - The private sector's contribution to GERD is only around **36%**, compared to over 70% in developed countries.
  - NTRAF aims to boost private R&D investment by offering a clear and transparent assessment of technology risk and potential.
- **Strengthening Lab-to-Market Linkages:** While India excels in academic research, it faces challenges in commercializing products due to institutional silos.
  - NTRAF provides a structured pathway for technology transfer, making the process more efficient and transparent for organizations like **DRDO** and industry partners.
- **Boosting 'Aatmanirbhar Bharat':** To achieve self-reliance in critical and emerging technologies, it is essential to nurture indigenous innovation.
  - NTRAF acts as a catalyst for the **Aatmanirbhar Bharat** and **Make in India** initiatives by creating a robust mechanism to identify, validate, and scale indigenous technologies for industrial adoption.

## 1.4 SNIPPETS

Topics	Details
Viksit Bharat Shiksha Adhishtan (VBSA) Bill, 2025	<ul style="list-style-type: none"> <li>● The Viksit Bharat Shiksha Adhishtan (VBSA) Bill, 2025, introduced in the Lok Sabha, and was referred to a Joint Parliamentary Committee.</li> <li>● The VBSA Bill proposes a unified apex regulatory body—the <b>Viksit Bharat Shiksha Adhishtan</b>—as the overarching commission for higher education in India. <b>Aligned with NEP 2020's vision</b> of a "light but tight" framework, it <b>replaces fragmented regulators by repealing the UGC Act (1956), AICTE Act (1987), and NCTE Act (1993)</b>. The <b>new structure features three independent councils</b>: Viksit Bharat Shiksha Viniyaman Parishad (for regulation and enforcement), Viksit Bharat Shiksha Gunvatta Parishad (for accreditation), and Viksit Bharat Shiksha Manak Parishad (for setting academic standards).</li> </ul>
India Tops Global Doping Violations in 2024	<ul style="list-style-type: none"> <li>● India tops the global doping violations list for the third consecutive year, recording a record 260 adverse findings in 2024 per WADA's Testing Figures Report.</li> <li>● World Anti-Doping Agency (WADA) is the <b>independent global body leading the fight against doping in sport through coordination</b>, research, education, and monitoring. It operates via equal partnership between sports movements and governments, with the World Anti-Doping Code as its core harmonizing framework and the annually updated Prohibited List defining banned substances/methods across all competition levels.</li> </ul>
National Mathematics Day	<ul style="list-style-type: none"> <li>● Dr. Alexander Smith of Northwestern University received the 2025 SASTRA Ramanujan Prize on National Mathematics Day.</li> <li>● The SASTRA prize is an annual \$10,000 award established in 2005 to honor young mathematicians under the age of 32 for outstanding work in areas influenced by the legendary Indian mathematician Srinivasa Ramanujan (1887–1920), the self-taught Indian genius born in Erode, Tamil Nadu, <b>often called "the man who knew infinity,"</b> produced thousands of original theorems from his teenage years. He became the <b>youngest Fellow of the Royal Society</b></li> </ul>

<b>Karnataka Bill on Hate Speech</b>	<p><b>and first Indian Fellow of Trinity College, Cambridge.</b> National Mathematics Day, marked annually on his birthday (December 22) since 2011, honors his legacy.</p> <ul style="list-style-type: none"> <li>Karnataka became India's first state to pass dedicated legislation against hate speech and hate crimes.</li> <li>The Karnataka Hate Speech and Hate Crimes (Prevention) Bill, 2025, defines hate speech as any public expression—spoken, written, signed, visual, or electronic—intended to cause injury, disharmony, enmity, hatred, or ill-will against individuals or groups based on religion, race, caste, gender, sexual orientation, place of birth, disability, or other protected traits. It <b>introduces organisational liability, holding leaders accountable</b> unless they prove ignorance or due diligence to prevent offences, while <b>empowering authorities to order blocking or removal of online hateful content.</b></li> </ul>
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## 1.5 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
Quick Delivery Apps Exploiting Gig Workers	30 <sup>th</sup> December
Child Marriage In India	29 <sup>th</sup> December
Government Link NATGRID With The National Population Register	26 <sup>th</sup> December
Right To A Healthy Environment	23 <sup>rd</sup> December
Vb-G Ram G Bill To Replace MGNREGA	17 <sup>th</sup> December
Citizenship & Voting Rights	10 <sup>th</sup> December

## 2. INTERNATIONAL RELATIONS

### 2.1 INDIA AND NEW ZEALAND FREE-TRADE AGREEMENT (FTA)

#### Context

- India and New Zealand concluded an agreement for a comprehensive Free Trade Agreement (FTA) to eliminate trade barriers, boost investment, and enhance economic cooperation.

#### Key Provisions of the Agreement

- **Trade Liberalisation (Goods):**
  - **New Zealand's Commitment:** Grants **100% duty-free access** to all Indian exports, completely removing its current average tariff of 2.2%.
  - **India's Commitment:** India will liberalize duties on **70% of its tariff lines**, which covers 95% of New Zealand's exports by value. Duties will be gradually reduced over 10 years.
  - **Protection for Sensitive Sectors:** India has excluded nearly **30% of its tariff lines** from the agreement to protect sensitive domestic industries. This includes key sectors like **dairy**, certain animal products, vegetables, and almonds.
- **Investment Commitment:** New Zealand has committed to facilitating **\$20 billion in investment** into India over the next 15 years. The agreement includes a unique **rebalancing mechanism**, allowing India to suspend FTA benefits if this investment target is not met.
- **Mobility and Services:**
  - **Students:** Indian students in New Zealand face **no numerical caps** and are guaranteed at least 20 hours of work per week. Post-study work visas are extended (up to 3 years for STEM graduates).
  - **Professionals:** A new visa pathway allows up to **5,000 Indian professionals** to work in New Zealand at any given time. This covers sectors like AYUSH, yoga, IT, engineering, and healthcare.
  - **Services Trade:** The FTA includes India's most ambitious services offer to date, covering **118 services sectors** to promote trade and professional mobility.
- **Intellectual Property Rights (IPR):** New Zealand will amend its laws to allow the registration of Indian **Geographical Indications (GIs)** for goods beyond just wines and spirits, bringing it on par with the benefits granted to the European Union.

#### Strategic Significance for India

- **Economic Diversification:** This is India's third trade deal with a member of the **Five Eyes** intelligence alliance (after Australia and the UK), signalling a strategic pivot to build stronger economic ties with developed nations.
- **Regional Influence:** The agreement provides Indian companies a strategic foothold to access markets across the **Pacific island economies**.
- **Protection of Key Industries:** By successfully excluding the dairy sector and other sensitive agricultural items, India has demonstrated its ability to negotiate FTAs that balance market access with the protection of vulnerable domestic producers.
- **Enhanced Export Competitiveness:** Indian sectors like **textiles, apparel, leather, and auto components** will gain immediate duty-free access, making them more competitive in the New Zealand market where they previously faced tariffs of up to 10%.
- **Balanced Liberalisation:** The use of **Tariff-Rate Quotas (TRQs)** and seasonal tariffs for sensitive imports like apples and kiwifruit allows for managed market access without harming domestic producers.

## Key Challenges Associated with India's FTAs

- **Threat to Domestic Industry:** A primary concern is that cheaper imports from partner countries can harm India's **Micro, Small & Medium Enterprises (MSMEs)** and sensitive sectors like agriculture and textiles. Critics note that FTAs have often led to a wider trade deficit for India.
- **Limited Gains in Services:** Despite its strength in the services sector, India often fails to secure meaningful market access due to strict visa rules, licensing hurdles, and other **non-tariff barriers (NTBs)** in partner nations.
- **Impact on Policy Sovereignty:** Modern FTAs often include chapters on investment, IPR, and labour/environmental standards, which can potentially limit India's policy space to enact laws in the public interest (e.g., for affordable medicines).

## Way Forward to Improve the Effectiveness of India's FTAs

- **Strategic Negotiation:** India must prioritize **reciprocal market access** for its strengths in services and digital trade, while using strong

safeguards like TRQs to protect sensitive sectors.

- **Strengthening Domestic Competitiveness:** Focus on improving domestic infrastructure (logistics, ports) and manufacturing capabilities through schemes like the **Production-Linked Incentive (PLI)** to help industries benefit from FTAs.
- **Leveraging New-Age Trade Elements:** Negotiate chapters on cross-border data flows, green technology partnerships, and sustainable sourcing. Linking trade deals to **binding investment commitments**, as seen in the NZ FTA, should be a standard practice.
- **Addressing Non-Tariff Barriers:** Future FTAs must include strong and enforceable chapters on technical standards and mutual recognition agreements to prevent NTBs from undermining the benefits of tariff reduction.

## Conclusion

- The India-New Zealand FTA serves as a modern template for India's trade policy, effectively balancing offensive interests in services and investment with defensive compulsions in agriculture.

## 2.2 INDIA- ETHIOPIA RELATIONS

### Context

- Ethiopia and India signed three MoUs for cooperation in customs administration, establishing a data centre at the Ethiopian embassy, and UN peacekeeping.

### About India-Ethiopia Relations

- **Ancient Era:** Civilizational links established during the **Aksumite Empire**. Indian merchants traded silk and spices for Ethiopian gold and ivory.
- **Colonial Era:** Indian soldiers played a key role in British campaigns in Ethiopia, notably in the **1868 expedition** and the **1941 campaign** to end Italian occupation.
- **Post-Independence:** Formal diplomatic relations were established in 1948.

Relationships expanded into defence, technology, and economic sectors.

### Why Ethiopia is Important for India?

- **Geostrategic Location:** Ethiopia is a stabilizing force in the **Horn of Africa**. Its capital, Addis Ababa, hosts the **African Union (AU) Headquarters**, making it the political capital of Africa and a crucial hub for India's pan-Africa diplomacy.
- **Growing Economy:** With a population exceeding **126.5 million** and one of Africa's fastest-growing economies, Ethiopia is a major market for Indian goods, services, and investments.
- **Gateway to Africa:** A strong partnership with Ethiopia serves as a reliable anchor for India to

expand its economic and political footprint across Eastern Africa and the wider continent.

### India's Role in Ethiopia's Development

- **Investment Hub:** India is the **second-largest foreign investor** in Ethiopia. Over 650 Indian companies have invested approximately **\$5 billion**.
- **Trade Partnership:** Bilateral trade stood at **\$660 million** in 2022-23. The trade balance is heavily in India's favour.
  - **India's Exports:** Pharmaceuticals, iron and steel, machinery, and paper products.
  - **India's Imports:** Pulses, oilseeds, vegetables, leather, and spices.
- **Development Finance:** India has extended over **\$1 billion in Lines of Credit (LoCs)** to Ethiopia for developing sectors like rural electrification and the sugar industry.
- **Capacity Building:** Under the **Indian Technical and Economic Cooperation (ITEC)** program, thousands of Ethiopian officials have received training in India.

### Challenges in the India-Ethiopia Relationship

- **Trade Imbalance:** The trade relationship is heavily skewed in India's favour, as Ethiopia's export basket lacks diversification and value-added products.
- **Economic Bottlenecks:** Ethiopia faces a severe **foreign exchange (forex) shortage**, which makes it difficult for Indian companies to repatriate profits and import necessary materials.
- **Regional Instability:** Internal political conflicts and instability in the Horn of Africa can disrupt the business and investment climate.

- **Geopolitical Competition:** India faces competition from other global players, particularly **China**, which has a deep economic footprint in Ethiopia through large-scale infrastructure projects.

### Way Forward

- **Enhance Trade and Investment:** Facilitate the renewal of the **Bilateral Investment Treaty (BIT)** and **Double Taxation Avoidance Agreement (DTAA)** to provide legal certainty for investors.
- **Introduce Financial Innovation:** Explore a **Local Currency Settlement (LCS) mechanism** to bypass forex challenges, similar to agreements India has with other countries.
- **Deepen Digital Cooperation:** Fast-track collaboration on Digital Public Infrastructure (DPI), focusing on linking platforms like **UPI with Ethiopia's Ethswitch** to modernize its financial ecosystem.
- **Leverage Multilateral Platforms:** Use Ethiopia's BRICS membership to align strategies on reforming global financial institutions and advancing the agenda of the Global South.
- **Focus on Strategic Sectors:** Shift investment towards high-growth areas like renewable energy, agro-processing, and IT, which align with both countries' long-term economic goals.

### Conclusion

- The India-Ethiopia relationship exemplifies South-South cooperation, and strengthening collaboration in finance, digital technology, and security can unlock their strategic partnership's potential for regional stability and prosperity in the Horn of Africa and the Indo-Pacific.

## 2.3 INDIA-OMAN COMPREHENSIVE ECONOMIC PARTNERSHIP AGREEMENT

### Context

- India and Oman have officially implemented the Comprehensive Economic Partnership Agreement (CEPA) to strengthen economic and strategic ties.

### About India-Oman Comprehensive Economic Partnership Agreement (CEPA)

- This is India's second CEPA with a Gulf Cooperation Council (GCC) member, following the agreement with the UAE in 2022.
- This pact aims to strengthen India's economic and strategic footprint by boosting trade, investment, and professional mobility.

### Key Features of the India-Oman CEPA

- Duty-Free Market Access:** Oman has granted zero-duty access to 98.08% of its tariff lines, which covers 99.38% of India's exports by value.
- Boost to Key Sectors:** The agreement offers full tariff elimination for labour-intensive Indian products, including textiles, leather, footwear, gems & jewellery, engineering goods, plastics, pharmaceuticals, and automobiles.
- Balanced Concessions by India:** India has offered tariff liberalisation on 77.79% of its tariff lines. Sensitive sectors like agriculture, bullion, and select industrial goods are protected through exclusion lists and Tariff Rate Quotas (TRQs).
- Services Liberalisation:** Oman has committed to opening up 127 services sub-sectors, including IT, business services, R&D, education, and healthcare.
- Enhanced Professional Mobility (Mode 4):** For the first time, Oman has offered wide-ranging

commitments under GATS Mode 4 (movement of natural persons). Key changes include:

- Increasing the quota for **Intra-Corporate Transferees** from 20% to 50%.
- Extending the stay for **Contractual Service Suppliers** from 90 days to **two years**.
- Investment Opportunities:** The CEPA allows **100% Foreign Direct Investment (FDI)** for Indian companies in major service sectors in Oman, enabling them to establish a commercial presence in the Gulf.
- Provision on Traditional Medicine:** The agreement includes the world's first comprehensive commitment on Traditional Medicine (AYUSH), creating new avenues for India's wellness sector and promoting medical tourism.
- Trade Facilitation:** The CEPA addresses non-tariff barriers by fast-tracking pharmaceutical approvals, mutually recognising **Halal certification**, and accepting India's organic certification (NPOP).

### Significance of the CEPA for India

- Strategic Gateway:** Oman's strategic location makes it a gateway for India to access markets in the **GCC, Eastern Europe, Central Asia, and Africa**.
- Strengthened Regional Presence:** The agreement reinforces India's economic and strategic footprint in the crucial West Asian region.
- Supply Chain Resilience:** It enhances trade facilitation and investment confidence, contributing to more resilient and efficient supply chains.

### India-Oman Relations

- Oman is India's oldest strategic partner in the Gulf and a key interlocutor at forums like the GCC, Arab League, and the Indian Ocean Rim Association (IORA).
- Oman is the first Gulf nation to conduct tri-service military exercises with India, reflecting deep defence ties. These exercises are: **Army:** Al Najah, **Air Force:** Eastern Bridge, **Navy:** Naseem Al Bahr
- Bilateral trade between India and Oman crossed **\$10.6 billion** in FY 2024–25.
  - **India's Exports to Oman:** Petroleum products, aluminium oxide, rice, machinery, electronics, plastics, and steel.
  - **India's Imports from Oman:** Crude oil, LNG, fertilisers, ammonia, chemicals, sulphur, and iron ore.

### Key Challenges

- **Trade Imbalance:** The trade relationship is dominated by energy, leading to a structural trade deficit for India.
- **Underutilised Services Potential:** Despite Oman's large services import market, India's share is only 5.31%, indicating room for growth.
- **Regional Geopolitical Risks:** Instability in West Asia and disruptions to maritime routes pose a threat to energy security and trade.
- **Omanisation Policy:** Oman's policy of workforce nationalisation creates uncertainty for the large Indian diaspora and professionals in the country.

- **Deepen Services Engagement:** Leverage the CEPA to expand India's presence in Oman's IT, education, healthcare, and R&D sectors.
- **Boost Investment Partnerships:** Encourage Indian firms to utilize Oman as a manufacturing and logistics hub for the Gulf and Africa, especially in sectors like green hydrogen and renewables.
- **Enhance Maritime Cooperation:** Strengthen collaboration in the Blue Economy, focusing on sustainable fisheries, marine research, and joint efforts to secure vital energy sea lanes.

### Way Forward to Strengthen Relations

- **Diversify Trade:** Promoting exports of high-value manufactured goods, pharmaceuticals, and agricultural products to reduce the trade deficit.

### Conclusion

- The India-Oman CEPA is a forward-looking agreement enhancing India's strategic and economic engagement in the Gulf by addressing market access, services, and investment to promote a balanced, diversified economic partnership, supporting resilient global trade and inclusive growth.

## 2.4 SHORT ARTICLES

### Israel Recognize Somaliland

#### Context

- Israel became the first UN member state to formally recognise the Republic of Somaliland as an independent and sovereign state.

#### About Somaliland

- British Somaliland gained independence in 1960 and merged with Italian Somaliland to form Somalia. After the 1991 collapse of the Siad Barre regime and a civil war, it declared independence from Somalia.
- **Location:** Located in the Horn of Africa, an East African peninsula extending into the Gulf of Aden, Somali Sea, and



Guardafui Channel.

- **Geography:** Bordered by Djibouti to the northwest, Ethiopia to the south and west, and Somalia to the east.
- **Economy:** Highly dependent on livestock exports, remittances from the diaspora, and trade through the strategic Port of Berbera. The official currency is the Somaliland shilling.
- **Israeli Interests:** For Israel, this recognition offers a vital strategic foothold in the Horn of Africa, enabling Red Sea monitoring, Houthi threat countering, and expanded Abraham Accords alliances.

## Interpol Issues Blue Corner Notice

### Context

- INTERPOL issued a Blue Corner Notice for the absconding owners of the Goa nightclub to help trace their location globally after a fire killed 25 people.

### About INTERPOL

- International Criminal Police Organization (INTERPOL), established in 1923, an independent international organization to facilitate global police cooperation to combat transnational crime.
- It is the world's largest police organization, with **196 member countries**.
- Its agents do not have direct arrest powers; it functions as a communication and database network for law enforcement agencies worldwide.
- **Headquarters:** Lyon, France.
- **Official Languages:** Arabic, English, French, and Spanish.
- **General Assembly:** The supreme governing body where each member country has one vote. It meets annually to decide on policies, finances, and activities.
- Each member country operates a National Central Bureau (NCB), which serves as the central point of contact for INTERPOL. The **Central Bureau of Investigation (CBI)** is the designated NCB for India.
- INTERPOL issues colour-coded notices which are international alerts that allow police in member countries to share critical crime-related information.

### TYPES OF INTERPOL NOTICES

 <b>RED NOTICE:</b> To seek the location and arrest of wanted persons with a view to extradition or similar lawful action.	 <b>YELLOW NOTICE:</b> To help locate missing persons, often minors, or to help identify persons who are unable to identify themselves.
 <b>BLUE NOTICE:</b> To collect additional information about a person's identity, location or activities in relation to a crime.	 <b>BLACK NOTICE:</b> To seek information on unidentified bodies.
 <b>GREEN NOTICE:</b> To provide warnings and intelligence about persons who have committed criminal offences and are likely to repeat these crimes in other countries.	 <b>ORANGE NOTICE:</b> To warn of an event, a person, an object or a process representing a serious and imminent threat to public safety.
 <b>INTERPOL-UN SECURITY COUNCIL SPECIAL NOTICE:</b> Issued for groups and individuals who are the targets of UN Security Council sanctions committees.	 <b>PURPLE NOTICE:</b> To seek or provide information on modus operandi, objects, devices and concealment methods used by criminals.

## World Inequality Report 2026

### Context

- The **World Inequality Report 2026**, published by the **World Inequality Lab**, provides a comprehensive analysis of global inequality across multiple dimensions.

### Key Findings of the World Inequality Report 2026

- **Extreme Wealth Concentration:** The top **10%** of the global population owns **75%** of total wealth, while the bottom **50%** holds a mere **2%**. The wealth share of the richest **0.001%** grew from 4% in 1995 to over 6% in 2025.

- **Human Capital Inequality:** Average spending per child in Sub-Saharan Africa is €220, much lower compared to €7,430 in Europe and €9,020 in North America & Oceania.
  - **Climate Inequality:** The wealthiest 10% are responsible for 77% of global emissions linked to private capital ownership. The poorest 50% account for only 3% of these emissions but are the most vulnerable to climate shocks.
  - **Gender Inequality:** When unpaid domestic and care work is included, women earn only 32% of men's income. On average, women work 53 hours per week compared to 43 hours for men.
- Specific Findings for India**
- **Severe Income Inequality:** The top 10% of the Indian population earns 58% of the total national income, while the bottom 50%'s share is just 15%.
  - **High Wealth Concentration:** The richest 10% of Indians hold approximately 65% of the nation's total wealth. The top 1% alone controls about 40% of it.
- **Low Female Labour Participation:** India's female labour force participation rate is extremely low at 15.7%, among the lowest globally.
  - **Average Prosperity Levels:** The average annual income per capita is reported at €6,200 (PPP), with an average wealth of about €28,000 (PPP).
- Key Policy Recommendations**
- **Public Investment in Human Capital:** Invest in free, high-quality education, universal healthcare, and nutrition programs.
  - **Redistribution & Social Protection:** Implement cash transfers, pensions, and unemployment benefits.
  - **Advancing Gender Equality:** Provide affordable childcare, equitable parental leave, and enforce equal pay laws.
  - **Progressive & Green Taxation:** Enact progressive wealth and income taxes; use fiscal tools to promote green technology.
  - **Reforming Global Financial System:** Explore new global currency and financial arrangements to reduce unequal flows.

## 2.5 SNIPPETS

Topics	Details
UN Office for the Coordination of Humanitarian Affairs	<ul style="list-style-type: none"> <li>• The United States pledged \$2 billion for UN-coordinated humanitarian aid.</li> <li>• The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) was established in 1991 by <b>General Assembly Resolution 46/182 to strengthen coordinated responses to complex emergencies and natural disasters</b>. It manages key pooled funds including the Central Emergency Response Fund (CERF) for rapid global allocations and Country-Based Pooled Funds (CBPFs) for localized priorities.</li> </ul>
UN High Commissioner for Refugees	<ul style="list-style-type: none"> <li>• The United Nations General Assembly has elected former Iraqi President Barham Salih as the new UN High Commissioner for Refugees.</li> <li>• <b>Headquartered in Geneva</b>, UNHCR was established in 1950 to aid post-WWII displaced persons. It protects refugees, and stateless people via non-refoulement, humanitarian aid, and durable solutions like repatriation or resettlement. <b>Fully funded by voluntary contributions</b>, it operates globally under an Executive Committee and the elected High Commissioner. <b>UNHCR has twice won the Nobel Peace Prize (1954, 1981)</b>.</li> </ul>
US Operation Hawkeye Strike in Syria	<ul style="list-style-type: none"> <li>• The US launched Operation Hawkeye Strike in Syria, targeting Islamic State (IS) infrastructure and weapons sites.</li> <li>• Islamic State (IS), also known as ISIS (Islamic State of Iraq and Syria), is a Sunni terrorist group that <b>emerged from al-Qaeda</b> in Iraq, proclaiming a</li> </ul>

	<p>caliphate in 2014 across vast territories in Iraq and Syria. Banned in numerous countries, including India under UAPA as a terrorist organization. Syria, in the <b>Levant region of West Asia, is bordered by Turkey (north), Iraq (east), Jordan (south), Lebanon and Israel (west), with a Mediterranean coastline.</b></p>
<p><b>India–Netherlands Joint Trade and Investment Committee (JTIC)</b></p>	<ul style="list-style-type: none"> <li>• India and the Netherlands signed an MoU to establish the Joint Trade and Investment Committee (JTIC).</li> <li>• The JTIC aims to eliminate trade barriers, promote two-way investments, and enhance cooperation in technical know-how and technological innovation. India-Netherlands bilateral trade reached \$27.76 billion in FY 2024-25, with surplus for India. It is <b>India's largest export destination in Europe</b>, driven by petroleum products, pharmaceuticals, and telecom instruments. Geographically, the <b>Netherlands lies in Western Europe, bordered by Belgium and Germany.</b></li> </ul>
<p><b>Project Suncatcher</b></p>	<ul style="list-style-type: none"> <li>• Google unveiled Project Suncatcher, a moonshot research initiative exploring solar-powered orbital data centers, with two prototype satellites set for launch in early 2027.</li> <li>• Project Suncatcher plans to <b>launch constellations of small satellites in sun-synchronous low-Earth orbit to create a space-based digital ecosystem for AI.</b> These satellites will use Google's TPUs and optical laser links for high-bandwidth, low-latency distributed computing. By utilizing dawn-dusk orbits for near-constant sunlight, the <b>project aims to generate more power than on Earth, enabling clean, scalable AI infrastructure and reducing strain on terrestrial resources.</b></li> </ul>
<p><b>Asian Development Bank (ADB)</b></p>	<ul style="list-style-type: none"> <li>• ADB signed five loan agreements with India to fund development projects in skilling, renewable energy, healthcare, urban transport, and sustainable livelihoods.</li> <li>• ADB was founded in 1966 and <b>headquartered in Manila, Philippines</b>, is a regional multilateral institution promoting prosperous, inclusive, resilient, and sustainable growth across Asia and the Pacific. It offers loans, grants, technical assistance, and equity investments to <b>69 members (50 regional, 19 non-regional) and private entities, also holding UN observer status.</b> The <b>largest shareholders are Japan and the United States (15.6% each)</b>, followed by China (6.4%), India (6.3%), and Australia (5.8%).</li> </ul>
<p><b>Pax Silica Summit 2025</b></p>	<ul style="list-style-type: none"> <li>• India's exclusion from the US-led Pax Silica Summit in December 2025 caused sharp political criticism and debate regarding US-India relations.</li> <li>• Pax Silica is a US-led strategic initiative to <b>build a secure, resilient, and innovation-driven silicon supply chain</b>, spanning critical minerals, energy inputs, semiconductors, advanced manufacturing, AI infrastructure, and logistics. It aims to <b>reduce coercive dependencies on concentrated sources—particularly China's dominance in rare earths and chip production—</b>while promoting joint ventures, protecting sensitive technologies from countries of concern, and promoting trusted ecosystems among aligned partners. <b>Founding members include the US, Japan, South Korea, Singapore, the United Kingdom, Israel, and Australia, with participation from the Netherlands and UAE;</b> observers include Taiwan, the EU, Canada, and the OECD.</li> </ul>

<b>Benin</b>	<ul style="list-style-type: none"> <li>Benin witnessed a failed military coup attempt by a group of soldiers.</li> <li>Benin, a West African country, situated <b>along the Gulf of Guinea</b> with a narrow coastline on the Bight of Benin, shares borders with Togo to the west, Nigeria to the east, Burkina Faso to the northwest, and Niger to the north. The <b>Niger River</b> marks part of its northern boundary, the Atakora Mountains rise in the northwest.</li> </ul>
<b>Kimberley Process (KP)</b>	<ul style="list-style-type: none"> <li>India has assumed the chairmanship of the Kimberley Process (KP) for 2026, marking its third term after 2008 and 2019.</li> <li>The Kimberley Process (KP) is a UN-backed international initiative launched in 2003 to <b>eliminate 'conflict diamonds'</b>—rough diamonds used by rebel groups to finance armed conflicts against legitimate governments. It includes 60 participants representing 86 countries (with the EU counted as one), covering over 99.8% of global rough diamond trade and production. The core <b>Kimberley Process Certification Scheme (KPCS)</b> requires members to certify shipments as conflict-free.</li> </ul>

## 2.6 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
A Multipolar World With Bipolar Characteristics	31 <sup>st</sup> December
Jordan-India Bilateral Relations	20 <sup>th</sup> December
India-Africa Economic Relations 2025	22 <sup>nd</sup> December
India-Jordan Relations	20 <sup>th</sup> December
India-Italy Strategic Partnership	13 <sup>th</sup> December

## 3. ECONOMY

### 3.1 TRADE ENABLEMENT AND MARKETING SCHEME

#### Context

- The Minister of State for Micro, Small and Medium Enterprises (MSME) recently briefed the Rajya Sabha regarding the Trade Enablement and Marketing Scheme, highlighting ongoing efforts to strengthen MSME participation in digital and e-commerce markets.

#### About the Trade Enablement and Marketing Scheme:

- The Trade Enablement and Marketing Scheme functions as a sub-scheme under the Central Sector Scheme “Raising and Accelerating MSME Performance (RAMP)”. It is designed to equip MSMEs with digital capabilities and help them effectively use e-commerce platforms to expand market access.

#### Objective:

- The primary goal is to integrate MSMEs with online marketplaces and e-commerce ecosystems, thereby improving their visibility and enabling access to diverse domestic and global markets.

#### Eligibility:

- Available to Udyam-registered Micro and Small Enterprises (MSEs)
- Applies to both manufacturing and services sectors

**Target Beneficiaries:** Aims to support 5 lakh MSEs and 50% of the beneficiaries are intended to be women-owned enterprises

#### Key Components:

The scheme focuses on:

- connecting MSMEs with the ONDC network
- providing digital storefronts
- integrated payment solutions
- logistics and fulfilment support

- reducing operational barriers and expanding customer reach

It also promotes:

- formalisation of MSMEs
- creation of digital transaction histories
- enhancing trust and creditworthiness of enterprises

#### Why MSMEs need such a scheme?

- India has over 6.3 crore MSMEs (NSSO 73rd Round).
- MSMEs contribute around 30% of GDP, about 45–48% of total exports, and employ over 11–12 crore people.
- More than 95% of MSMEs are micro enterprises and most remain informal or semi-formal.
- Despite high production capacity, market access is weak, and only a small fraction sells online.

#### Significance for the Economy

- Encourages branding, packaging, and quality certification, improving export readiness.
- Supports cluster-based industries such as textiles, handicrafts, coir, leather, food processing, toys, and tribal products.
- Enhances India’s move toward a \$5 trillion economy by strengthening small enterprise competitiveness.

#### Inclusive Growth and Women Entrepreneurship

- The scheme intends to benefit 5 lakh MSMEs, with 50% earmarked for women-owned enterprises.
- Women-owned MSMEs currently form about 20% of total MSMEs, indicating a large scope for improvement.
- Digital platforms enable home-based women entrepreneurs to access markets without heavy capital investment.

### Digital Transformation Impact

- Promotes **formalisation** through Udyam registration and GST integration.
- Aligns with **ONDC architecture** which democratizes e-commerce beyond a few dominant platforms.
- Encourages adoption of **UPI, e-payments, logistics tracking, AI-based demand analysis.**

### Key Challenges

- **Digital divide:** India still has a **rural-urban digital gap**, with rural internet penetration around **38-40%** compared to **70%+ in urban areas.**
- **Low awareness and onboarding constraints:** Over **95%** of MSMEs are micro units, many operating informally and unaware of **ONDC/e-commerce onboarding procedures, GST norms, packaging and return policies.**
- **Language and usability barriers:** India has **22 official languages and hundreds of regional dialects**, while most digital commerce interfaces are still **English or Hindi centric.**
- **Cyber and data security risks:** MSMEs are increasingly targets for **phishing, fake orders,**

payment fraud, and data theft. India ranks among the **top three countries for cyber-attack volume**, and small enterprises lack cyber-security capacity.

### Way Forward

- **Strengthen ONDC integration:** Expand **sector-wise onboarding drives** for textiles, handicrafts, food processing, toys, tribal products. ONDC aims to enable **1 crore sellers and 30 crore buyers**, requiring structured training and awareness campaigns.
- **Promote vernacular digital literacy and hand-holding:** Establish **district-level digital facilitation centres** in line with **Digital Saksharta Abhiyan.**
- **Ensure fair digital marketplace governance:** Enforce **competition safeguards, anti-dumping norms, transparent rating systems, algorithmic fairness.**
- **Improve logistics ecosystem:** Leverage **PM Gati Shakti, National Logistics Policy and India Post network.** Provide **freight subsidies, packaging support, warehousing and cold-chain tie-ups**, especially for agri-MSMEs.

## 3.2 INDIAN STATISTICAL INSTITUTE (ISI) ACT, 1959

### Context

- More than **1,500 academics and researchers have voiced strong objections** and held protests in Kolkata against the **Central Government proposal to repeal the Indian Statistical Institute (ISI) Act, 1959**, expressing concern over its potential impact on academic autonomy and the status of the institute.

### Background of Indian Statistical Institute (ISI)

- The **Indian Statistical Institute (ISI)** was founded on **17 December 1931** in Kolkata by **Professor P.C. Mahalanobis**, a pioneer of statistics in India.
- It began as a **registered society** and evolved into a premier institution for **statistical research, teaching, data science, economics, and allied fields.**

- Recognising its national contribution, the **ISI Act, 1959** declared ISI as an **Institution of National Importance.**

### Purpose of the ISI Act, 1959

- The Act governs the **institute, governing body, faculty, staff, and students.**
- It was enacted to:
  - provide **legal status and autonomy**
  - strengthen **statistical education and research**
  - support **national planning and development through data and analytics**
- The Act falls under the **Ministry of Statistics and Programme Implementation (MoSPI).**

### Salient Features of the ISI Act, 1959

- **Degree-granting powers:** Enables ISI to award **degrees and diplomas** in statistics,

mathematics, quantitative economics, computer science, and related disciplines.

- **Financial support:** Provides for Central Government grants, loans, and assistance.
- **Audit provisions:** Makes auditing of ISI accounts mandatory by qualified auditors.
- **Committees and review:** Allows the Central Government to constitute committees to frame academic and research programmes and to periodically review institutional activities.
- **Power to issue directions:** Empowers the government to issue policy directions to the Institute.
- **Assumption of control:** Provides for temporary Central Government takeover of administration in exceptional circumstances.

### Why the repeal proposal is controversial?

- **Possible erosion of academic autonomy:** Repeal is feared to weaken ISI's freedom in faculty appointments, curriculum design, collaborations, and research agenda, increasing the scope for external interference. For an institution that often must

independently evaluate official statistics, autonomy is vital.

- **Dilution of "Institution of National Importance" status:** The ISI Act grants a special status comparable to IITs and IISc. Repeal may lower prestige, bargaining power, funding priority, and global recognition, affecting the institute's ability to attract top talent and sustain leadership in statistics.
- **Greater centralised control:** Academics worry that repeal may lead to tighter government oversight through new rules or executive control over governing bodies, finances, and appointments, shifting decision-making away from peer-led academic processes.
- **Impact on independent statistical research and data credibility:** ISI contributes to national surveys, GDP estimation, poverty and employment measurement, and statistical training. Any perception of reduced independence could undermine trust in official data and evidence-based policymaking.

## 3.3 RBI INTEGRATED OMBUDSMAN SCHEME

### Context

- According to the RBI Annual Report, complaints registered under the Reserve Bank's Integrated Ombudsman Scheme (RB-IOS) increased by 13.55% in FY25, indicating rising public reliance on institutional grievance-redressal mechanisms and greater use of digital financial services.

### About the RBI Integrated Ombudsman Scheme:

- Merged three earlier schemes:
  - Banking Ombudsman Scheme, 2006
  - Ombudsman Scheme for NBFCs, 2018
  - Ombudsman Scheme for Digital Transactions, 2019

The scheme follows a "One Nation - One Ombudsman" principle by removing jurisdictional barriers and bringing grievance redress under a single integrated framework.

### Objective:

- The scheme aims to offer fast, inexpensive, and impartial grievance redressal for customers of RBI-regulated entities by providing an alternative dispute-resolution platform outside courts.

### Key Features:

- Introduces "deficiency in service" as the primary basis for complaint filing, along with specified exclusions.
- Establishes a Centralised Receipt and Processing Centre (CRPC) in Chandigarh to receive and process complaints in any Indian language, via post or email.
- Allows complaints against Commercial banks, NBFCs, Regional Rural Banks, Primary Urban Cooperative Banks (deposit size  $\geq$  ₹50 crore),

### Payment System Participants and Credit Information Companies.

#### Compensation Provisions:

- Ombudsman may award **compensation up to ₹20 lakh** for losses suffered.
- Additional compensation of **up to ₹1 lakh** may be awarded for harassment, mental agony and time and expenses incurred by the complainant.

#### Significance of the RBI Integrated Ombudsman Scheme (RB-IOS)

- **Strengthens consumer protection architecture** by giving citizens a simple platform to resolve disputes against banks, NBFCs, and payment system participants.

- **Promotes financial inclusion** as even first-time users, small depositors, rural customers, and senior citizens get accessible grievance redressal without legal costs.
- **Builds trust in digital payments and fintech** at a time of rapid UPI, credit-card, prepaid wallet, and app-based lending expansion.
- **Reduces regional disparities** through the “One Nation–One Ombudsman” model, making grievance handling uniform, jurisdiction-neutral, and language-inclusive.
- **Enhances accountability of regulated entities (REs)** by creating time-bound redress and reputational consequences for repeated deficiencies in service.
- **Decreases burden on courts and consumer forums** by offering an alternate dispute-resolution mechanism that is quicker and less expensive.

## 3.4 INVESTOR EDUCATION AND PROTECTION FUND AUTHORITY (IEPFA)

### Context

- The Investor Education and Protection Fund Authority (IEPFA), in collaboration with the Securities and Exchange Board of India (SEBI), recently organised a “Niveshak Shivir” in Jaipur to promote investor awareness.

simultaneously spreading awareness about safe and informed investment practices. The Authority operates under the **Ministry of Corporate Affairs**.

### About IEPFA

- The Investor Education and Protection Fund Authority was created in **2016** under the provisions of the **Companies Act, 2013**. Its primary objective is to **enhance investor awareness and protect investor interests** through continuous outreach programmes, education initiatives, and institutional partnerships.

### Key Initiatives

- Through major initiatives such as **Niveshak Didi, Niveshak Panchayat, and Niveshak Shivir**, the IEPFA aims to empower citizens with financial knowledge and encourage informed decision-making in investments.

### Functions

- IEPFA administers the **Investor Education and Protection Fund (IEPF)** and works to promote **financial literacy and investor protection** across the country. It also facilitates the **refund of unclaimed shares, unpaid dividends, matured deposits, matured debentures, and other such dues** to rightful investors, while

### Composition of the IEPF

- The Fund consists of amounts that remain **unclaimed or unpaid for seven years**, including unpaid dividends, application money due for refund, matured deposits and debentures, interest earned on investments of the Fund, and grants or donations received from the government or other bodies.

### Importance of IEPFA

- **Safeguarding unclaimed investor assets:** IEPFA ensures that **unclaimed dividends, shares and other investor dues** are refunded

to rightful holders instead of remaining with companies or banks. This helps protect individual financial interests and legal entitlements of investors.

- **Investor awareness & financial literacy:** A core objective of IEPFA is to **enhance investor education and awareness**, helping people make informed investment decisions and understand their rights and obligations.
- **Mobilising dormant capital for public good:** The fund accumulates **unclaimed assets after 7 years**, and part of this pool is used for **financial education campaigns and outreach programs** such as *Niveshak Shivir*, *Niveshak Didi* and *Niveshak Panchayat*.
- **Massive accumulated value of unclaimed assets:** As of August 2024, the IEPF held shareholdings in **1,561 listed companies valued at around ₹82,199 crore**, including stakes in major firms like Reliance Industries Ltd.

## Challenges

- **Low awareness & complex procedures:** Many investors are **unaware of the IEPFA claim process**, leading to a backlog of unclaimed funds. Complex refund procedures and documentation requirements discourage many from filing claims.
- **Bottlenecks in claim verification:** Delays in *verification of claims*, incomplete KYC details in company records, and coordination issues between companies and IEPFA slow down refund processing.
- **Huge value locked without claimants:** Reports indicate that **over ₹11,000 crore worth of Reliance Industries shares remain unclaimed** and are stuck in the IEPF due to procedural bottlenecks and lack of investor action.

## Way Forward

- **Simplify the claim process:** A high-level committee has recommended **easing procedures for small-value investor claims** and speeding up refunds. If implemented, this can reduce delays and encourage more people to file claims.
- **Faster processing targets:** The IEPFA aims to **expedite transfer of unclaimed shares and dividends within 30–60 days** of claim filing, which would significantly cut turnaround times if operationalised.
- **Robust awareness campaigns:** Scaling up *Niveshak Shivir* camps and targeted outreach in regions with large volumes of unclaimed assets can improve investor education. Piloting awareness drives in tier-II and tier-III cities will bridge the information gap.
- **Technology-driven tracking tools:** Improving online search tools on the **IEPFA portal** and integrating them with depositories will help investors easily discover if they have **unclaimed dividends or shares**, enabling proactive claim filing.

## Conclusion

- The Investor Education and Protection Fund Authority play a crucial role in safeguarding unclaimed investor assets and strengthening financial literacy in India. However, large volumes of dormant funds, low public awareness, and procedural delays continue to pose challenges. Streamlining claim processes, expanding digital tools, and intensifying outreach initiatives are essential to ensure faster refunds and greater investor protection, thereby deepening trust and participation in India's financial markets.

## 3.5 SHORT ARTICLES

### Technology Development Fund (TDF) Scheme

#### Context:

- The Defence Research and Development Organisation (DRDO) has recently transferred

seven indigenously developed technologies to the armed forces under the **Technology Development Fund (TDF) Scheme**.

#### [About the Scheme:](#)

- The Technology Development Fund (TDF) Scheme was launched to **promote self-reliance in defence technology** as part of the 'Make in India' initiative. The scheme aims to build a strong defence innovation ecosystem by encouraging **active participation of public and private industries**, particularly **MSMEs and startups**, to develop **cutting-edge technologies** for the defence sector. The **Ministry of Defence** is the nodal ministry for implementing the scheme.

#### Eligibility Criteria

- Entities eligible to participate include **public and private limited companies, partnership firms, LLPs, one-person companies, and sole proprietorships** registered in India, with a focus on **MSMEs and startups**. The applicant entity must be **owned and controlled by resident Indian citizens**, and organisations with **more than 49% foreign investment** are not eligible.

#### Startup-Specific Conditions

- To qualify as a startup under TDF, the entity must be **recognized by DPIIT** in accordance with Government of India norms. Startups that have been incorporated for **less than three years** at the time of application are treated as **nascent startups**, and such startups must be **incubated in a government-supported incubator**.

## 'Your Money, Your Right' Movement

#### Context

- The Prime Minister has urged citizens to actively participate in the 'Your Money, Your Right' campaign.

#### What is the 'Your Money, Your Right' Movement?

- The initiative, launched by the Central Government in **October 2025**, focuses on helping people **retrieve unclaimed financial assets** such as dormant bank deposits, unpaid insurance claims, unclaimed dividends, and other similar amounts.
- The campaign brings together **banks, financial institutions, regulators, and government**

**departments** to trace long-forgotten funds and return them to their rightful owners.

#### Working mechanism:

To make the process easier, the government has introduced dedicated online platforms:

- **RBI - UDGAM Portal:** for unclaimed bank deposits
- **IRDAI - Bima Bharosa Portal:** for unclaimed insurance proceeds
- **SEBI - MITRA Portal:** for unclaimed mutual fund amounts
- **Ministry of Corporate Affairs - IEPFA Portal:** for unpaid dividends and unclaimed shares

## SAMPANN Portal

#### Context:

- The **Controller General of Communication Accounts (CGCA)** has recently launched the process of onboarding all **MTNL employees retiring in November 2025** onto the **SAMPANN portal** at the Office of the Principal CCA in Delhi.

#### What is the SAMPANN Portal?

- **SAMPANN (System for Accounting and Management of Pension)** is a **Comprehensive Pension Management System (CPMS)** developed to streamline pension-related services for **Department of Telecommunications (DoT) pensioners**.
- It is an initiative of the **Controller General of Communication Accounts (CGCA)** under the **Department of Telecommunications, Ministry of Communications**, and was formally launched on **29 December 2018**.
- The platform integrates all major pension functions—including **processing, sanctioning, authorization, and disbursement**—into a single digital system and enables **direct credit of pension** to beneficiaries' bank accounts. This has led to **faster pension settlement, better reconciliation and auditing, and simplified accounting procedures**.

#### Key Features of the SAMPANN Portal:

- Ensures **timely and direct disbursement** of pension without intermediaries
- Provides a **single-window digital platform** for the entire pension lifecycle

- Offers an **online grievance redressal mechanism**, minimizing paperwork
- Allows pensioners to **track the status of their pension claims from home**, enhancing transparency
- Enables **quicker revision and payment of arrears**

## Financial Fraud Risk Indicator (FRI)

### Context

- The **Department of Telecommunications (DoT)** announced that the **Financial Fraud Risk Indicator (FRI)** has **averted potential losses of about ₹660 crore** in the banking ecosystem within **six months of its launch**.

### What is the Financial Fraud Risk Indicator (FRI)?

- The **FRI** was launched in **May 2025** by the **DoT's Digital Intelligence Unit (DIU)**. It is a **risk-based metric** that categorises mobile numbers as **Medium, High, or Very High Risk** based on the likelihood of their involvement in **financial fraud**.

### Working Mechanism:

- Risk classification is based on **multi-source analysis**, drawing inputs from:
  - **National Cybercrime Reporting Portal (NCRP)** of the Indian Cybercrime Coordination Centre
  - **DoT's Chakshu platform**
  - intelligence shared by **banks and financial institutions**
- By flagging risky numbers early, the system helps **banks, NBFCs, and UPI providers** strengthen **transaction validation and customer protection**.
- The **Digital Intelligence Unit** regularly circulates a **Mobile Number Revocation List (MNRL)** containing numbers disconnected due to **cybercrime, failed KYC, or misuse**. Since fraud numbers are often **short-lived**, the **FRI** acts as a **proactive alert system**.
- Once a number is flagged, it undergoes **multidimensional risk analysis** and is categorised as **Medium/High/Very High Risk**. This information is then shared through the **DoT Digital Intelligence Platform (DIP)** with all stakeholders.

## Rapid Financing Instrument (RFI)

### Context

- The **International Monetary Fund (IMF)** has approved **USD 206 million** for **Sri Lanka** under the **Rapid Financing Instrument (RFI)** to meet **urgent balance-of-payments and humanitarian needs** following **Cyclone Ditwah**.

### What is the Rapid Financing Instrument?

- The **Rapid Financing Instrument (RFI)** provides **quick financial assistance** to IMF member countries facing an **urgent balance-of-payments (BoP) crisis**. It is part of the IMF's **General Resources Account (GRA)** and is used particularly in **emergencies and shocks**.

### Types of Access under RFI:

- Under the **Regular Window**, countries can receive assistance when the crisis arises from factors such as **domestic instability or external shocks**, with access limited to **50% of quota annually and 100% cumulatively**;
- **Large Natural Disaster Window** for countries hit by disasters causing damage equal to or exceeding **20% of GDP** can access up to **80% of quota annually and 133.33% cumulatively**.

### Policy Requirements

- RFI support is provided **without program-based ex-post conditionality or reviews** (though **prior actions may apply**). Recipient countries must adopt policies aimed at **addressing the balance-of-payments pressures** and restoring stability.

## Kimberley Process

### Context

- The **Kimberley Process (KP) Plenary** has selected **India** to chair the **Kimberley Process** from **1 January 2026**, marking the **third time** India will hold this position.

### What is the Kimberley Process?

- The **Kimberley Process** is a **tripartite initiative** involving **governments, the diamond industry, and civil society**, aimed at **preventing the trade in conflict diamonds**, rough diamonds used by rebel groups to finance wars and undermine legitimate governments, as defined by **UN Security Council resolutions**.

- **Governance Structure:** The KP operates on a consensus-based system, where the Vice-Chair automatically becomes Chair the following year. Currently, the Process includes 60 participants representing 86 countries, with the European Union counted as a single participant.
- **Kimberley Process Certification Scheme (KPCS):** The KPCS, launched in 2003, is the implementation mechanism of the Kimberley Process. It ensures that rough diamonds in international trade are conflict-free, through certification and national enforcement by member countries. India has been a participant since 2003.

#### India's Institutional Framework

- In India, the Department of Commerce serves as the nodal authority for KPCS. The Gem & Jewellery Export Promotion Council (GJEPC) functions as the importing and exporting authority, issuing KP certificates and serving as custodian of certificates received in the country.

## Shipbuilding Financial Assistance Scheme

### Context

- The Ministry of Ports, Shipping & Waterways (MoPSW) has issued operational guidelines for two major initiatives—the Shipbuilding Financial Assistance Scheme (SBFAS) and the Shipbuilding Development Scheme (SbDS).

### What is the Shipbuilding Financial Assistance Scheme (SBFAS)?

- The SBFAS aims to strengthen India's shipbuilding capacity and improve its global competitiveness. The scheme will remain valid till 31 March 2036 and is administered by the Ministry of Ports, Shipping & Waterways.

### Key Features of SBFAS

- The scheme provides financial assistance of 15%–25% per vessel, depending on vessel category. It introduces graded support for small, large, and specialised vessels, with stage-wise disbursement linked to defined milestones and safeguarded through security instruments.
- A unique feature is the Shipbreaking Credit Note, under which ship owners who scrap vessels in Indian shipbreaking yards will receive credits equivalent to 40% of the scrap value. The scheme also proposes the creation of a National Shipbuilding Mission for coordinated planning and execution.

### 3.6 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
Revival of Shipping corporation of India	1 <sup>st</sup> December
Masala Bond: meaning and challenges	2 <sup>nd</sup> December
New Cess on Pan Masala and Higher Tobacco Duty	2 <sup>nd</sup> December
Rupee crosses 90 marks against dollar	4 <sup>th</sup> December
RBI's 25 bps Repo Cut: Explained	6 <sup>th</sup> December
Health security to National security cess bill	6 <sup>th</sup> December
Pensions in India: Challenges and Reforms	8 <sup>th</sup> December
Hindu rate of growth and Indian economy growth after independence	8 <sup>th</sup> December
National mission on edible oil	9 <sup>th</sup> December
Benefits of neuro technology for India	9 <sup>th</sup> December
Handicrafts: The backbone of rural economy	10 <sup>th</sup> December

Fugitive Economic Offenders Act, 2018	10 <sup>th</sup> December
Reinventing Indian Banking: Deposit Challenges and Credit Opportunities	11 <sup>th</sup> December
Hybrid mutual fund	12 <sup>th</sup> December
PM Dhan Dhaanya Krishi Yojana	12 <sup>TH</sup> December
Poverty in India: Evidence, Challenges and Way Forward	13 <sup>TH</sup> December
Retail Inflation: Causes, Measurement and Policy Implications	13 <sup>th</sup> December
One Nation, One Port: Reducing Logistics Costs and Boosting Exports	16 <sup>th</sup> December
Insurance Laws (Amendment) Bill, 2025	16 <sup>th</sup> December
Electrification and Modernisation of Indian Railways	17 <sup>th</sup> December
VB-G RAM G Bill: Rationale, Features and Impact	18 <sup>th</sup> December
Deepening India's Corporate Bond Market for Long-Term Growth	20 <sup>th</sup> December
India-Oman CEPA Explained	20 <sup>th</sup> December

## 4. DEFENSE & SECURITY

### 4.1 SHORT ARTICLES

#### Dhruv NG Helicopter

##### Context

- Hindustan Aeronautics Limited (HAL) conducted the maiden flight of the Dhruv-New Generation (NG) helicopter in Bengaluru.

##### Details

- The Dhruv Civil NG is a 5.5-tonne, twin-engine, multi-role helicopter developed indigenously by HAL as a cost-effective alternative to imported helicopters. It features day-night, all-weather operational capability and is powered by the indigenous Shakti engines.

#### Pinaka Long Range Guided Rocket

##### Context

- DRDO conducted the maiden flight test of the indigenously developed Pinaka Long Range Guided Rocket (LRGR-120) in Chandipur, Odisha.

##### Details

- Pinaka LRGR-120 is an advanced, precision-guided variant of the Pinaka multi-barrel rocket launcher system, developed by DRDO's Armament Research and Development Establishment (ARDE). Equipped with inertial navigation, mid-course guidance updates, and terminal correction for pinpoint accuracy.

#### Bureau of Port Security

##### Context

- India establishes the Bureau of Port Security (BoPS) to strengthen risk-based security for ports.

##### Details

- The Bureau of Port Security (BoPS) is constituted under the Merchant Shipping Act, 2025, functioning as a statutory authority under the Ministry of Ports, Shipping and Waterways (MoPSW). Modelled on the Bureau of Civil Aviation Security (BCAS), it performs regulatory oversight, enforces

compliance with the International Ship and Port Facility Security (ISPS) Code, and coordinates intelligence sharing.

#### Exercise Desert Cyclone II

##### Context

- Indian Army and UAE forces conducted Joint Military Exercise "Desert Cyclone II," in December 2025.

##### Details

- Exercise Desert Cyclone is a **bilateral Army drill between India and the UAE**, first conducted in Rajasthan in 2024.. Other joint engagements include Exercise Gulf Waves (formerly Zayed Talwar) for naval cooperation, multilateral Exercise Milan 2024 where UAE observed, and Exercise Desert Flag and Tarang Shakti 2024 for air forces with UAE participation.

#### Diving Support Craft (DSC)

##### Context

- The Indian Navy commissioned its first indigenously built Diving Support Craft, DSC A20, at Naval Base Kochi.

##### Details

- DSC A20 is designed under Indian Register of Shipping rules for optimal stability and manoeuvrability, it **supports critical missions like harbour clearance, underwater maintenance, and diver training** while enhancing operational self-reliance.

#### Exercise Ekatha 2025

##### Context

- The Deputy Chief of the Naval Staff attended the closing ceremony of the 8th edition of Exercise Ekatha 2025 in Maldives.

##### Details

- Exercise Ekatha, established in 2017, is an **annual bilateral maritime exercise between the Indian Navy's marine commandos**

(MARCOS) and the Maldives National Defence Force (MNDF). The exercise aligns with India's MAHASAGAR vision and Neighbourhood First policy, boosting joint operational synergy in the Indian Ocean Region. Other India-Maldives exercises include Ekuverin (army), while trilateral Dosti involves Sri Lanka and MILAN is multilateral.

## Exercise Harimau Shakti 2025

### Context

- The 5th edition of India-Malaysia joint military Exercise Harimau Shakti 2025 commenced at Mahajan Field Firing Range in Rajasthan.

### Details

- Exercise Harimau Shakti is an **annual bilateral army drill between the Indian Army and Royal Malaysian Army, initiated in 2012** to sharpen skills in jungle warfare, counter-terrorism, and sub-conventional operations under UN Chapter VII mandate. It complements other bilateral exercises such as Samudra Laksamana (naval) and Udara Shakti (air force).

## Indian Maritime Doctrine 2025

### Context

- The Chief of the Naval Staff released the Indian Maritime Doctrine 2025.

### Details

- The Doctrine outlining strategic principles, roles, force employment, capability development, and operational approaches across the full spectrum of maritime conflict. First published in 2004, revised in 2009, and amended in 2015, the 2025 edition formally **recognises "no-war, no-peace" to address grey-zone tactics**, hybrid warfare, and sub-threshold actions. The doctrine emphasises **tri-service jointness and interoperability to enable theaterisation, integrates multi-domain threats** including space, cyber, and cognitive warfare, and promotes the adoption of uncrewed systems, autonomous platforms, and emerging technologies.

## 4.2 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
What are the Security & Social implications of AI- Generated Content?	29 <sup>th</sup> December
Uniform Anti-Terrorism Squad (ATS) Structure	27 <sup>th</sup> December

## 5. ENVIRONMENT & ECOLOGY

### 5.1 GREEN TUG TRANSITION PROGRAMME (GTTP)

#### Context

- The Union Minister for Ports, Shipping and Waterways has virtually flagged off the steel-cutting ceremony for India's first all-electric green tug at Deendayal Port Authority, marking a major milestone under the Green Tug Transition Programme (GTTP) aimed at decarbonising port operations.

#### About the Green Tug Transition Programme

- The programme aims to replace conventional diesel-driven harbour tugs with green alternatives to reduce emissions from Indian ports.
- It was launched by the Ministry of Ports, Shipping and Waterways (MoPSW) in 2024.
- The transition is planned through five phases between 2024 and 2040.

#### Implementation Plan

- A total of 50 green tugs will be inducted by 2030, replacing conventional diesel tugs in a phased manner.
- Phase-1 (2024–2027) will deploy 16 green tugs across major ports.
- In this phase, two green tugs each will be deployed at Deendayal Port Authority, Paradip Port Authority, Jawaharlal Nehru Port Authority, and V.O. Chidambaranar Port Authority.
- During the same phase, one green tug each will be deployed at the remaining eight major ports, ensuring wider national coverage from the outset.

#### Technology

- The programme will initially introduce Green Hybrid Tugs powered by hybrid propulsion

technology, reducing dependence on conventional marine diesel.

- Over time, these tugs will transition to cleaner non-fossil fuels such as green methanol, ammonia, and hydrogen, aligning with emerging maritime fuel technologies.
- The long-term objective is to progressively move toward fully electric and zero-emission harbour tug operations, significantly lowering the carbon footprint of Indian ports.

**Nodal Agency:** The National Centre of Excellence in Green Port & Shipping (NCoEGPS) serves as the nodal implementing entity for the programme.

#### Significance of GTTP

- Supports India's Net-Zero 2070 pledge:** Ports handle 95% of India's trade volume, and harbour crafts consume large quantities of diesel; replacing tugs can prevent thousands of tonnes of CO<sub>2</sub> annually, directly aiding COP26 commitments.
- Cuts air pollution in port cities:** Green tugs reduce NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>2.5</sub> and black carbon, improving air quality in cities like Mumbai, Chennai, Paradeep and Vizag, benefitting dock workers and nearby coastal populations.
- Drives National Green Hydrogen Mission demand:** By shifting to green methanol, ammonia and hydrogen, the programme supports the ₹19,744-crore mission targeting 5 MMT green hydrogen by 2030, and helps ports emerge as green fuel bunkering hubs.
- Boosts indigenous maritime clean-tech manufacturing:** Encourages domestic production of batteries, fuel cells, propulsion systems and power electronics, strengthening Make in India, reducing engine imports, and creating high-skill marine jobs.

## 5.2 SHORT ARTICLES

### International Fund for Agricultural Development (IFAD)

#### Context

- At the IFAD-India Day event in Rome, the Government of India showcased the country's leadership in rural transformation, highlighting achievements in agricultural growth, poverty reduction, and inclusive rural development.

#### About IFAD

- The International Fund for Agricultural Development (IFAD) is both an international financial institution and a specialized UN agency, created in 1977 through a UN General Assembly resolution. Its core mandate is to eliminate rural poverty and hunger in developing countries.
- The organisation funds research, innovation, institutional reform, and pro-poor technologies. It provides two main types of grants global or regional grants for broader initiatives and country-specific grants tailored to national priorities
- Objective:** IFAD works to empower rural communities by enhancing food security, nutrition, and livelihoods, especially among smallholders and marginal farmers. Its projects are concentrated in remote, fragile, and climate-vulnerable regions, including least developed countries and Small Island Developing States.
- Membership and Governance:** IFAD currently has 180 member countries, with India as a founding member. Its Governing Council serves as the highest decision-making body and convenes every three years.

### New Ramsar Sites

#### Context

- Siliserh Lake in Alwar, Rajasthan, and Kopra Jalashay near Bilaspur, Chhattisgarh, have recently been designated as Ramsar Sites, recognising their international importance as wetlands.

#### Siliserh Lake (Rajasthan):

- Location:** Siliserh Lake is a man-made waterbody located in Alwar, Rajasthan, situated within the buffer zone of Sariska Tiger Reserve. It was constructed in 1845 by Maharaja Vinay Singh to supply drinking water to Alwar city and lies in a semi-arid region
- The lake supports 149 bird species and 17 mammal species, including the vulnerable river tern and the endangered tiger.

#### Kopra Jalashay (Chhattisgarh)

- Location:** Kopra Jalashay is a reservoir in Chhattisgarh, located in the upper catchment of the Mahanadi River. Its strong hydrological and ecological connectivity sustains diverse wetland habitats across the region.
- The site supports over 60 migratory bird species that use it for nesting, feeding, and stopovers. Key species include the vulnerable greater spotted eagle (*Aquila clanga*) and the endangered Egyptian vulture (*Neophron percnopterus*).

### Project Mausam

#### Context

- The Archaeological Survey of India (ASI) recently organised a National Workshop on Project Mausam titled "Islands at the Crossroads of Maritime Networks within the Indian Ocean Region," focusing on heritage linkages across Indian Ocean islands.

#### About Project Mausam

- Project Mausam is a Government of India cultural diplomacy and maritime heritage initiative launched in 2014 by the Ministry of Culture. It seeks to explore the Indian Ocean world, documenting the cultural, commercial, and religious exchanges that historically connected countries across the region. So far, 39 Indian Ocean countries have been identified under this programme.

- **Structure:** Project Mausam operates through two key units: **Project Research Unit** and **World Heritage Nomination Unit**.
- The project is implemented by the **Archaeological Survey of India (ASI)**, with research support from the **Indira Gandhi National Centre for the Arts (IGNCA)** and the **National Museum**.
- **Objective:** The objectives of Project Mausam are to **map and document maritime cultural and trade linkages across the Indian Ocean**, prepare **transnational World Heritage nominations** of identified sites for **UNESCO's World Heritage List**, promote **multidisciplinary research** on maritime routes through seminars, workshops, and academic collaboration, and **encourage specialised publications and public outreach** to build awareness of a **shared heritage and multiple identities**.

## Kolleru Lake

### Context

- Kolleru Lake, long known for its ecological richness, has recently drawn attention for a distinctive product: **black dried fish**.

### Physical Setting

- Kolleru is a **large freshwater lake in Andhra Pradesh**. It lies between the **Krishna and Godavari river deltas**, close to Eluru. The lake acts as a **natural flood buffer** for both river systems.
- Kolleru receives inflows from several small rivers such as **Budameru, Ramileru, Tammileru and Errakalva**, along with numerous drainage channels. The lake ultimately **drains into the**

**Bay of Bengal** through an outlet locally known as **Upputeru**.

### Significance

- The lake supports **millions of migratory birds every year**, including pelicans, painted storks, and open-billed storks.
- **Conservation Status:** Kolleru Lake was notified as a **Wildlife Sanctuary in 1999**. In **2002**, it was recognized as a **Ramsar Site**, acknowledging its status as a wetland of international importance.

## Industrial Hemp

### Context

- **Himachal Pradesh** has announced a policy initiative to **legalise and regulate cultivation of industrial hemp** for commercial use.

### About

- Industrial hemp belongs to the species **Cannabis sativa L**. Although it is botanically similar to marijuana, the **chemical profiles of the two are markedly different**. Hemp varieties are specifically bred to contain **very low levels of tetrahydrocannabinol (THC)**.

### Economic Importance:

- **Fibre and stalk uses:** The stalk of the hemp plant yields strong fibre that can be used to manufacture **textiles and garments, ropes, carpets, canvas, paper and specialty paper products, automobile components and bioplastics**
- **Seeds and oil use:** Hemp seeds are nutritionally rich and commercially valuable. They can be used for **edible seed consumption, hemp seed oil extraction, animal and poultry feed, protein supplements**.

## 5.3 SNIPPETS

### SPECIES IN NEWS

Species	Context	Description
<b>Protosticta sooryaprakashi</b>	A new species of damselfly, <b>Protosticta sooryaprakashi</b> , has been documented from the Western Ghats.	The species belongs to the genus <b>Protosticta</b> and is commonly called the <b>Kodagu Shadowdamself</b> . The presence of <b>Protosticta sooryaprakashi</b> is considered a <b>bio-indicator species</b> . Its survival depends on <b>unpolluted streams and intact forest ecosystems</b> .
<b>Bamboo Shrimp</b>	After a gap of <b>72 years</b> , researchers have <b>rediscovered populations of the Bamboo Shrimp</b> in India, specifically in <b>Karnataka and Odisha</b> .	The <b>Bamboo Shrimp</b> is a <b>medium-sized freshwater invertebrate</b> native mainly to <b>Southeast Asia</b> . <b>Features</b> <ul style="list-style-type: none"> <li>• Its <b>body colour varies with physiological condition</b>.</li> <li>• It is an <b>amphidromous species</b>—larvae develop in <b>brackish water</b> before migrating back to freshwater environments as adults.</li> <li>• Primarily <b>nocturnal</b>.</li> </ul> <b>Distribution:</b> Found across <b>Southeast Asian countries</b> such as <b>Malaysia, Singapore, and Thailand</b>
<b>Svalbard</b>	Scientists have recently reported an <b>unusual congregation of walrus</b> along the remote coastline of <b>Svalbard</b> .	<b>Svalbard</b> is a <b>Norwegian Arctic Archipelago</b> situated in the <b>Arctic Ocean</b> , lying roughly midway between <b>northern Norway and the North Pole</b> . It is recognized as the <b>northernmost permanently inhabited region on Earth</b> . <b>Svalbard</b> experiences an <b>Arctic climate</b> , but temperatures are relatively milder than other regions at similar latitudes due to oceanic influence. <ul style="list-style-type: none"> <li>• <b>Midnight sun</b> occurs during summer</li> <li>• <b>Polar night</b> occurs during winter</li> </ul>
<b>Rock Eagle Owl</b>	Quarrying activities in Telangana were <b>temporarily suspended</b> after the discovery of a <b>Rock Eagle Owl nest</b> , highlighting the ecological sensitivity of the area and the need to protect breeding raptors.	The <b>Rock Eagle Owl</b> is also known as the <b>Indian Eagle-Owl or Bengal Eagle-Owl (<i>Bubo bengalensis</i>)</b> . It is a <b>large, horned owl species</b> commonly found in <b>rocky and scrub forest habitats</b> across India. It was earlier classified as a <b>subspecies of the Eurasian Eagle Owl</b> , but is now recognised as a distinct species. <b>Distribution</b> <ul style="list-style-type: none"> <li>• Widely distributed <b>south of the Himalayas</b> across the Indian subcontinent.</li> <li>• Found mainly in <b>India, Nepal, and Pakistan</b>.</li> </ul> <b>Conservation Status:</b> IUCN Status: Least Concern and CITES Appendix: II.
<b>Humpback Whale</b>	Recent assessments show that <b>global Humpback whale populations</b> have	It is a <b>baleen whale</b> belonging to the <b>rorqual family Balaenopteridae</b> . They are known for <b>long-distance migrations</b> , moving from <b>polar feeding grounds in summer to tropical/subtropical</b>

	rebounded dramatically from around 10,000 individuals to nearly 80,000.	<p>breeding areas in winter.</p> <p><b>Distribution</b></p> <ul style="list-style-type: none"> <li>Found in all major oceans.</li> <li>Range extends from sub-polar waters to near the equator depending on migration season.</li> </ul> <p><b>Conservation Status</b></p> <ul style="list-style-type: none"> <li><b>IUCN Red List:</b> Least Concern</li> </ul>
<b>Western Tragopan</b>	The population of the western tragopan in India has stabilised through captive breeding efforts.	<p>The western tragopan, also called the <b>western horned tragopan</b>, is among the <b>rarest pheasants in the world</b>. It is a <b>shy, ground-dwelling species</b>, generally active during dawn and dusk as it moves quietly through dense undergrowth, and is also the <b>state bird of Himachal Pradesh</b>.</p> <p><b>Distribution:</b> The species is <b>endemic to the north-western Himalaya</b>, occurring from <b>Hazara in northern Pakistan</b> through <b>Jammu &amp; Kashmir and Himachal Pradesh</b> up to <b>western Garhwal</b>.</p> <p><b>Conservation Status:</b></p> <p>The western tragopan is listed as <b>Vulnerable on the IUCN Red List</b>.</p>
<b>Black-Capped Capuchin Monkey</b>	The <b>Bannerghatta Biological Park (BBP)</b> has recently imported <b>eight black-capped capuchin monkeys (Sapajus apella)</b> from <b>South Africa</b> under an animal exchange programme.	<p>The <b>black-capped capuchin</b>, also called the <b>tufted capuchin</b>, is a <b>New World monkey species</b> scientifically known as <b>Sapajus apella</b>.</p> <p><b>Distribution:</b> The species is <b>native to South America</b> and is widely found across the <b>Amazon River Basin</b>.</p> <p><b>Habitat:</b> It occupies diverse ecosystems including <b>tropical and subtropical forests, dry forests, savannas, mangroves, and sub-montane forests</b>.</p> <p><b>Conservation Status:</b> They are classified as <b>Least Concern</b> by the <b>IUCN Red List</b>.</p>
<b>Freshwater Sponge</b>	Scientists from the <b>Bose Institute</b> have studied <b>freshwater sponges in the Sundarban delta</b> and highlighted their <b>potential use</b> .	<p>Freshwater sponges are among the <b>earliest multicellular eukaryotes</b>. They filter <b>large volumes of water</b>, playing a crucial role in <b>maintaining aquatic ecosystem health</b>.</p> <p><b>Habitat:</b> They typically grow on <b>submerged, sturdy surfaces in clean streams, rivers, and lakes</b>.</p> <p><b>Ecological Role:</b> Freshwater sponges function as <b>bioindicators and natural absorbents of toxic metals</b> such as <b>arsenic, lead, and cadmium</b>, making them promising for <b>bioremediation</b>. They are effective for <b>monitoring water quality in freshwater and estuarine ecosystems</b>.</p>
<b>Three New Moth Species</b>	Researchers have identified <b>three previously unknown moth species</b> hidden in the <b>high-altitude Himalayan landscapes</b> , expanding knowledge of India's alpine	<p><b>Gelechia bilobuncusa</b></p> <p>This species was discovered in <b>Himachal Pradesh</b>. Its name refers to the <b>bilobed shape of the uncus</b>—a structure in the male genitalia used for scientific identification. It has <b>pale brown wings with irregular black scales</b>.</p> <p><b>Gelechia adi</b></p> <p>Found in the <b>Ramsing area of Arunachal Pradesh</b>, it is named after the <b>Adi tribe</b> of Upper Siang district. It is visually</p>

	biodiversity.	<p>striking with <b>ivory-white forewings</b> marked by a <b>bold black streak</b> and <b>triangular spots</b>.</p> <p><b>Istrianis ladakhensis</b></p> <p>Named after <b>Ladakh</b>, its type locality, this species is adapted to <b>cold, high-altitude conditions</b>. It has <b>light brown wings</b> mottled with <b>dark grey, white, and orange scales</b>, distinguishing it from related species.</p>
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## NATIONAL PARK AND SANCTUARY IN NEWS

National Park/ wildlife sanctuary/ Tiger Reserves	Context	Description
Chaprala Wildlife Sanctuary	<p>A <b>rare striated (striped) grassbird</b> has been recorded in the <b>Chaprala Wildlife Sanctuary</b> in <b>Gadchiroli, Maharashtra</b>, marking a <b>significant range expansion</b> of the species within the state and highlighting the sanctuary's rich avifaunal diversity.</p>	<p>Located in <b>Gadchiroli district, Maharashtra</b>.</p> <p>The sanctuary is geographically characterised by:</p> <ul style="list-style-type: none"> <li><b>Markhanda and Pedigundam hills</b> on two sides</li> <li><b>Pranhita River</b> forming its western boundary</li> <li>Location near the <b>confluence of the Wardha and Wainganga rivers</b></li> </ul> <p><b>Ecosystem</b></p> <ul style="list-style-type: none"> <li>Dominated by <b>Southern tropical dry deciduous forests</b></li> <li>Interspersed with <b>grasslands and riparian stretches</b></li> </ul> <p><b>Dominant flora includes:</b></p> <ul style="list-style-type: none"> <li>teak, arjun, salai, mahua, bel, dhawda, tendu, sissoo, semal</li> </ul> <p>The riparian ecosystem supports <b>aquatic fauna such as fish, prawns, and turtles</b>, making it an ecologically diverse landscape.</p>
Sultanpur National Park	<p>Sultanpur National Park is once again witnessing a <b>significant rise in migratory bird arrivals</b> as temperatures decline, and the wetland is echoing with their calls during the ongoing winter season.</p>	<p>Sultanpur National Park, earlier known as <b>Sultanpur Bird Sanctuary</b>, is located in <b>Gurugram district of Haryana</b>. Its core area of <b>1.21 sq. km</b> includes the main <b>Sultanpur Lake (Jheel)</b>, a <b>seasonal freshwater wetland</b> whose water level changes through the year.</p> <p>It was designated a <b>Ramsar Site in 2021</b> and is also recognised as an <b>Important Bird Area (IBA)</b> by <b>BirdLife International</b>.</p> <p><b>Flora</b></p> <p>The park's vegetation is largely <b>tropical dry deciduous</b>, supporting species such as <b>dhok, khair, tendu, ber, jamun, neem, banyan, berberis, Acacia nilotica, and Acacia tortilis</b>, along with extensive grasslands.</p> <p><b>Fauna and Avifauna</b></p> <p>More than <b>320 bird species</b> have been recorded here, making it an important <b>wintering habitat</b> along the <b>Central Asian Flyway</b>. Thousands of migratory birds from <b>Russia, Turkey, Afghanistan, and parts of Europe</b> arrive during winter.</p>

<p><b>Charaichung Royal Bird Sanctuary</b></p>	<p>The '<b>Charaichung Festival</b>' was recently celebrated on <b>Majuli Island in Assam</b> to revive and highlight <b>Asia's first protected royal bird sanctuary</b>.</p>	<p>Charaichung is recognised as <b>Asia's earliest protected bird sanctuary</b>. It was established in <b>1633 AD</b> by the Ahom ruler <b>Swargadeu Pratap Singha</b>. The sanctuary is situated in <b>Majuli, the world's largest river island</b>. <b>Charaichung Festival</b></p> <ul style="list-style-type: none"> <li>• The festival is in its <b>second edition</b></li> <li>• Organized with the support of <b>Majuli Sahitya</b> and local communities</li> <li>• Seeks to promote Charaichung as a <b>major eco-tourism destination</b> and build conservation awareness</li> </ul>
<p><b>Coringa Wildlife Sanctuary</b></p>	<p>The <b>40th Asian Waterbird Census</b> and <b>60th International Waterbird Census</b> will soon <b>enumerate waterbird species</b> in the <b>Coringa Wildlife Sanctuary and adjoining wetlands</b>.</p>	<p><b>Coringa Wildlife Sanctuary</b> is located in <b>Andhra Pradesh</b> and forms part of the <b>Godavari estuary</b>, where the <b>Coringa River meets the Bay of Bengal</b>. The sanctuary supports <b>extensive mangrove forests</b> along with <b>dry deciduous tropical forests</b> and represents the <b>second-largest stretch of mangroves in India</b>. The mangrove ecosystem includes species such as <b>Rhizophora, Avicennia, and Sonneratia</b>, which stabilise the coastline and support rich biodiversity. Coringa is home to endangered mammals including the <b>smooth-coated Indian otter, fishing cat, and jackal</b>. It provides excellent bird habitat, hosting species such as the <b>black-capped kingfisher, Brahminy kite, sea gulls, reef heron, and sandpiper</b>. The coastal belt serves as a nesting ground for <b>Olive Ridley turtles</b>.</p>
<p><b>Kanger Valley National Park</b></p>	<p>The <b>Chhattisgarh government</b> has intensified efforts to obtain <b>UNESCO World Heritage Site status</b> for <b>Kanger Valley National Park</b> in Bastar.</p>	<p><b>Kanger Valley National Park</b> is situated near <b>Jagdalpur in Bastar district, Chhattisgarh</b>. The park is named after the <b>Kanger River</b>, which flows through it from <b>north-west to south-east</b> before joining the <b>Kolab River</b>, a tributary of the <b>Godavari</b>. The vegetation is predominantly <b>moist mixed deciduous forest</b>, with major species such as <b>sal, teak and bamboo</b>, forming dense forest cover. The park contains <b>over 15 limestone caves</b>, including the well-known <b>Kotumsar, Kailash and Dandak caves</b>.</p>
<p><b>Parvati–Arga Bird Sanctuary</b></p>	<p>The <b>Parvati–Arga Bird Sanctuary</b> in <b>Uttar Pradesh</b> has recently been notified as an <b>Eco-Sensitive Zone (ESZ)</b>.</p>	<p>The sanctuary is located in the <b>Gonda district of Uttar Pradesh</b> and comprises <b>two oxbow lakes, Parvati and Arga</b>, which together form a <b>permanent freshwater wetland environment</b>. Parvati–Arga Bird Sanctuary has been designated as a <b>Ramsar Site</b>. The sanctuary supports several <b>threatened vulture species</b>, as the <b>critically endangered white-rumped vulture (Gyps bengalensis)</b> and <b>Indian vulture (Gyps indicus)</b>, along</p>

		with the endangered Egyptian vulture ( <i>Neophron percnopterus</i> )
<b>Pench Tiger Reserve</b>	A long-billed vulture (tagged J132) that had been under observation by researchers was recently released into the wild inside the Pench Tiger Reserve in Maharashtra.	<p>The Pench Tiger Reserve is situated in the southern part of the Satpura hill ranges.</p> <p>Pench was initially declared a National Park in 1983, and later, in 1992, it received the status of Tiger Reserve under Project Tiger.</p> <p>The forests of Pench exhibit considerable ecological diversity and fall mainly within the tropical deciduous forest category.</p> <p>Pench supports rich vegetation that includes teak (<i>Tectona grandis</i>) as the dominant species along with saal, mahua, tendu, bija, and numerous shrubs and grasses.</p> <p>The reserve is well known for its large herbivore populations, particularly chital (spotted deer), sambar, nilgai, gaur (Indian bison) and wild boar.</p>

#### 5.4 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
Taxing Meat for Climate Justice: Rationale and Challenges	1 <sup>st</sup> December
Bioremediation: Meaning, issues and way forward	2 <sup>nd</sup> December
Africa's Forest Decline and Global Climate Consequences	4 <sup>th</sup> December
The New Air Pollutant: Inhalable Microplastics in Indian Cities	4 <sup>th</sup> December
Biostimulants: Green solution for sustainable agriculture	9 <sup>th</sup> December
Black Band Disease and Coral Bleaching: Great barrier reef	11 <sup>th</sup> December
Air Pollution linked to 9 million deaths annually	11 <sup>th</sup> December
Graded response action plan – IV	15 <sup>th</sup> December
Mangroves: Nature's Coastal Defence System	17 <sup>th</sup> December
Methane emission and government initiatives	17 <sup>th</sup> December
Waste management innovations in Himalayan state	18 <sup>th</sup> December
Protecting India's Oldest Mountains: The Aravalli	19 <sup>th</sup> December
Agroforestry as a Nature-Based Solution to Climate Change	20 <sup>th</sup> December

## 6. SCIENCE & TECHNOLOGY AND HEALTH

### 6.1 SHORT ARTICLES

#### Centre for Chronic Disease Control (CCDC)

##### Context

- A recent study conducted by the Centre for Chronic Disease Control (CCDC) has, for the first time, simultaneously assessed **daily salt intake and iodine consumption among Indian adults**.

##### About Centre for Chronic Disease Control (CCDC):

- Founded in **2000** and headquartered in **New Delhi**, the Centre for Chronic Disease Control is an **independent, not-for-profit biomedical research institution** dedicated to addressing the rising burden of chronic diseases in India and other low- and middle-income countries.
- **Objectives:** The organisation's mandate and objectives are to strengthen surveillance systems, enhance capacity-building initiatives, and promote translational research in cardio-metabolic and other chronic diseases.

##### Institutional Status and Recognition

- Recognized as a **Scientific & Industrial Research Organization (SIRO)** by the Department of Scientific & Industrial Research, Ministry of Science and Technology
- Designated as a **WHO Collaborating Centre** for Surveillance, Capacity Building, and Translational Research in Cardio-Metabolic Diseases
- Recently acknowledged as a **Centre of Excellence (CoE)** by the Indian Council of Medical Research (ICMR)
- Registered under the **Foreign Contribution (Regulation) Act, 1976 (FCRA)**

##### Core Areas of Work

- CCDC conducts extensive **clinical and public health research** with a primary focus on **non-communicable diseases (NCDs)** such as cardiovascular disorders, diabetes and metabolic diseases, vascular conditions, cancer, mental health disorders.

#### AstroSat

##### Context

- The Indian Institute of Astrophysics (IIA) has recently marked the completion of **ten years of successful operation** of the **UltraViolet Imaging Telescope (UVIT)**, one of the key instruments onboard AstroSat.

##### About AstroSat

- AstroSat is **India's first dedicated multi-wavelength space observatory**, designed to observe celestial objects simultaneously in **X-ray, ultraviolet (UV), and optical bands**. Its instruments cover **near-UV, far-UV, limited optical ranges, and X-ray energies from about 0.3 keV to 100 keV**. The mission enables coordinated observations of diverse astronomical sources using a **single satellite platform**.

##### Payloads on AstroSat

The major scientific instruments onboard AstroSat include:

- **UltraViolet Imaging Telescope (UVIT)**
- **Large Area X-ray Proportional Counter (LAXPC)**
- **Cadmium-Zinc-Telluride Imager (CZTI)**
- **Soft X-ray Telescope (SXT)**
- **Scanning Sky Monitor (SSM)**

The UVIT comprises **two separate telescopes**—one dedicated to **near-UV and visible wavelengths**, and the other designed for **far-UV observations**.

##### Objectives of AstroSat:

- The objectives of AstroSat are to **investigate high-energy phenomena in binary star systems containing neutron stars and black holes**, measure the magnetic fields of neutron stars, study star-forming regions and energetic processes in stellar systems beyond the **Milky Way**, **identify new transient X-ray sources**, and conduct **deep-field ultraviolet surveys of selected regions of the Universe**.

## Agentic AI

### Context

- Microsoft Chairman and CEO **Satya Nadella** recently noted that India is experiencing **rapid growth in the adoption of AI and agentic AI applications**, reflecting rising innovation and deployment across sectors.

### What is Agentic AI?

- Agentic AI refers to **advanced artificial intelligence systems capable of autonomous decision-making and action**. These systems operate through **AI agents** that mimic human decision processes to solve problems in real time. Unlike traditional AI, which mainly analyses data or responds to prompts, **agentic AI can set goals, plan steps, execute tasks, and adapt with minimal human intervention**, demonstrating genuine **agency** in a goal-oriented manner.

### Core Components of Agentic AI:

- **Perception:** Collects information from sensors, databases, and user interfaces to understand the environment.
- **Reasoning:** Uses large language models to interpret context, analyze data, and evaluate possible options.
- **Planning:** Sets goals, divides them into smaller tasks, and decides the best steps to achieve them.
- **Action:** Performs tasks, makes decisions, or interacts with external tools and systems to execute the plan.
- **Reflection:** Learns from results, evaluates success or failure, and improves future plans and actions accordingly.

**Relation to Generative AI:** Agentic AI is built on **generative AI and large language models**, but moves beyond content creation. While generative models produce text, images, or code, **agentic AI uses these outputs to autonomously complete complex, goal-driven tasks**, including calling tools or systems in real time.

## India International Science Festival (IISF)

### Context

- The **11th India International Science Festival** is currently being held in **Panchkula, Haryana**.

### About IISF

- The India International Science Festival was launched in **2015** to create a large national platform that brings together the **scientific community and the public** from India and abroad.
- **Mission:** The mission of IISF is to **connect India's traditional knowledge systems with modern scientific research**, thereby strengthening the relationship between indigenous knowledge heritage and contemporary scientific inquiry.
- **IISF 2025:** The 2025 edition is being organised by the **Ministry of Earth Sciences (MoES)** and coordinated by the **Indian Institute of Tropical Meteorology (IITM), Pune**. The theme of IISF 2025 is **"Vigyan Se Samruddhi: for Aatmanirbhar Bharat."** The event will host **over 150 technical and thematic sessions** covering various fields of science, technology, and innovation.

## Large Language Models (LLMs)

### Context

- A recently released government working paper has suggested that **AI Large Language Models (LLMs) such as ChatGPT should by default be allowed access to freely available online content**, and that publishers should not be permitted an **opt-out option** for such publicly available material.

### About LLMs

- A Large Language Model is a type of **artificial intelligence system** capable of **understanding, interpreting, and generating human-like text**. These models are trained on **massive volumes of data**, which is why they are termed "large." LLMs are based on **machine learning techniques**, particularly **transformer-based neural networks**, which are highly effective at handling long sequences of words and detecting relationships and patterns in text.

### Application of Large Language Models (LLM)

- Perform **language tasks** such as answering questions, writing text, summarising content, translating languages, and generating creative material
- Power major **generative AI systems** such as ChatGPT, Claude, Microsoft Copilot, Gemini, and Meta AI
- Function as **multimodal foundation models** capable of working with **text, images, audio, and other media**

## Swasthya Portal

### Context

- In a reply to a starred question in the **Rajya Sabha**, the **Minister of Tribal Affairs** clarified that there is **no proposal to expand the Swasthya Portal**.

### What is the Swasthya Portal?

- The **Swasthya Portal** serves as a **comprehensive digital platform** that compiles and presents the **health and nutrition profile** but also curates 'innovative practices, research briefs, case studies and best practices from across India **for tribal communities**. It functions as a single-point reference system for data, knowledge, and interventions.
- The portal has been developed under the **Central Sector Scheme "Tribal Research Information, Education, Communication and Events (TRI-ECE)"** of the **Ministry of Tribal Affairs**.

### Functional Segments

- Swasthya Portal includes an interactive **dashboard**, a **knowledge repository**, a **partner segment** and a **Sickle Cell Disease (SCD) support corner**. The dashboard aggregates data from diverse sources for **177 high-priority tribal districts**, helping visualize trends and gaps.

## Ekam AI & SAMBHAV

### Context

- During **Vijay Diwas celebrations**, the **Indian Army** showcased indigenous defence technologies, including **Ekam AI** and the **SAMBHAV communication system**,

underscoring strides in self-reliance and digital security.

### About Ekam AI

- **Ekam AI** is a **fully indigenous, secure artificial intelligence platform** built specifically for **sensitive military and national security environments**.

### Key Features

- enables **information analysis, document management, and decision support** without reliance on foreign software or external clouds
- allows use by personnel at various levels **without specialised technical skills**

### Significance

- It ensures **complete data security and sovereignty**, marking a major step toward **trusted national digital ecosystems**.

### About SAMBHAV

- **SAMBHAV** is a **portable satellite-supported communication system** that delivers **mobile connectivity** in challenging environments.

### Key Features

- can be **rapidly deployed** in remote locations or disaster-hit areas
- strengthens communication for **soldiers and civilians alike**

### Significance

- The project demonstrates how **defence innovations** can **reinforce national communication infrastructure**.

## Annatto

### Context

- The **CSIR-Central Food Technological Research Institute (CFTRI)**, Mysuru has undertaken **four grant-in-aid projects** focused on the **research and development of annatto**, as informed by **CSIR**.

### What is Annatto?

- **Annatto** is a **natural food colour and flavouring agent** derived from the seeds of the **achiote tree (Bixa orellana)**, native to **tropical America**. Nearly **70% of natural food colours** worldwide are obtained from annatto. Annatto imparts a **yellow to orange hue** to foods such as **cheese, butter, yoghurt, sausages, smoked fish, ice cream, and baked products**.

## Health Benefits

Annatto has been associated with:

- anti-inflammatory and anticancer properties
- better eye and heart health
- antimicrobial activity against bacteria, fungi, and parasites

- strong antioxidant content, reducing cell damage from free radicals
- tocotrienols (vitamin E form) that may support bone health

Ground annatto seeds are also used topically in traditional practices for skin health.

## INS Hansa

### Context

- The Indian Navy has commissioned its second MH-60R helicopter squadron, INAS 335 ('Ospreys') at INS Hansa, Vasco da Gama, Goa, significantly enhancing anti-submarine and maritime surveillance capability.

### About INS Hansa

- INS Hansa is a major Indian naval air station located near Dabolim, Goa, and is the largest naval airbase in India. It hosts several frontline naval air squadrons and also contains a civil enclave functioning as Dabolim Airport, which handles round-the-clock domestic and international flights.
- Originally commissioned on 5 September 1961 at Sulur (Tamil Nadu) alongside the IAF base there, INS Hansa was relocated to Dabolim in June 1964, after the liberation of Goa, when the Navy took control of the Dabolim airfield.

#### MH-60R Seahawk Helicopter

INAS 335 is the second squadron to operate the MH-60R Seahawk, following the first squadron commissioned at Kochi in March 2024.

The MH-60R is a multi-role, all-weather, day-night helicopter capable of operating from both ships and shore bases. It is optimised for:

- Anti-Submarine Warfare (ASW) – detecting, tracking, and engaging submarines
- Anti-Surface Warfare (ASuW) – targeting enemy surface vessels
- Search and Rescue (SAR) and Medical Evacuation (MEDEVAC)
- Vertical Replenishment (VERTREP) – supporting logistics at sea

The induction of INAS 335 significantly strengthens India's naval aviation capability on the western seaboard, an area of major economic and strategic importance.

## SabhaSaar Initiative

### Context

- The Union Minister informed the Rajya Sabha about the progress of the SabhaSaar initiative, highlighting its growing adoption across Gram Panchayats.

### What is SabhaSaar?

- SabhaSaar is an AI-enabled voice-to-text meeting-summarisation tool launched by the Ministry of Panchayati Raj. It is being progressively adopted by Gram Panchayats across all States and UTs for routine Gram Sabha and Panchayat meetings.

### Key Features

- converts video/audio recordings of Gram Sabha meetings into structured minutes

- brings uniformity in recording minutes across the country
- enables transcription, translation, and summarisation of recordings
- accessible through e-GramSwaraj login credentials for uploading files
- supports major Indian languages such as Hindi, Bengali, Tamil, Telugu, Marathi, Gujarati, and English

### Significance

- SabhaSaar streamlines meeting documentation, improves transparency and accessibility, and provides instant summaries and insights—making it valuable for panchayats, local administration, and rural development programmes.

## TIDE 2.0 Scheme

### Context

- The Union Minister for Electronics and Information Technology informed the Rajya Sabha about progress under the TIDE 2.0 Scheme, highlighting its role in nurturing technology-driven startups.

### What is the TIDE 2.0 Scheme?

- The Technology Incubation and Development of Entrepreneurs 2.0 (TIDE 2.0) Scheme was launched in 2019 to promote technology-based entrepreneurship. It supports ICT startups using emerging technologies such as AI, IoT, Blockchain, and Robotics by providing financial and technical assistance through incubators.

### Implementation Framework

- The scheme is implemented through 51 incubators across India, located in premier academic and R&D institutions. Over five years, it aims to support nearly 2,000 tech startups through mentoring, funding, and market linkages.
- Under the scheme, Centres of Excellence in Intellectual Property Rights (CoE-IP) have been set up to assist startups, MSMEs, academia, and innovators in the Electronics and IT sectors. These centres offer IP services, training, and awareness programmes.

## Autophagy

### Context

- Researchers have identified a new regulator in the autophagy pathway, offering potential for future therapies targeting Alzheimer's, Parkinson's, cancer, and other diseases.

### What is Autophagy?

- Autophagy is a fundamental cellular process in which cells remove damaged or unwanted components. It acts as the body's cellular recycling system, breaking down defective parts and reusing useful components to maintain cell health.

### Significance of Autophagy:

- recycles damaged cell parts into new functional components

- removes non-functional structures that hinder performance
- destroys invading pathogens such as viruses and bacteria
- contributes to healthy aging and longevity

When autophagy fails, waste accumulates, particularly harming long-lived neurons, and contributing to neurodegenerative diseases.

### Autophagy and Disease

- Disruption of autophagy is linked to Alzheimer's, Huntington's, and other neurological disorders. Autophagy has a dual role in cancer, initially suppressing tumour formation by maintaining genomic stability and cellular balance, but in later stages, some cancer cells exploit autophagy to survive and grow.

## Ghost Pairing

### Context

- The Indian Computer Emergency Response Team (CERT-In) has warned of an active cyber-threat campaign targeting WhatsApp users through a new technique called "GhostPairing."

### What is GhostPairing?

- GhostPairing is a WhatsApp account-takeover technique where attackers secretly pair their own device to a victim's WhatsApp account. It allows cybercriminals to gain nearly full access without the user noticing, and does not require a password or SIM swap. Attackers typically trick users into sharing pairing codes, enabling unauthorised linking.

## Directed Energy Weapons (DEWs)

### Context

- Apollo Micro Systems has received DRDO approval to access Directed Energy Weapon technologies from two DRDO laboratories, strengthening India's capabilities in next-generation defence systems.

### What are Directed Energy Weapons?

- Directed Energy Weapons are systems that use concentrated energy—electromagnetic radiation or particle beams—rather than kinetic projectiles to disable, damage or

destroy targets. Most DEW systems employ **high-power lasers** that heat and neutralise targets with focused beams of energy.

**Working Mechanism:**

- Directed energy is **focused onto a target**, causing **intense heating** that can damage structures, sensors, electronic components, and airframes, thereby neutralising the threat **without physical impact or explosives**.

**Key Features:**

- High precision & minimal collateral damage:** DEWs can strike **specific weak points** of enemy equipment such as sensors, engines or electronics

- Speed-of-light engagement:** enables **instant response** against fast-moving threats
- Lower operational cost:** requires primarily **electrical power** rather than ammunition
- Effective against drone swarms:** suitable for **counter-UAV operations** and offers **stealth action** with no blast or sound signature

**Applications**

- Directed Energy Weapons provide **rapid, accurate engagement** against threats such as **drones (UAVs), missiles, small vehicles, rockets and artillery**, and can be deployed across **land, air and naval combat environments**.

**6.2 SNIPPETS**

**VIRUS IN NEWS**

Virus	Context	Description
Norovirus	Health authorities in the <b>United States</b> have reported a recent surge in <b>norovirus infections</b> , commonly called the <b>“winter vomiting disease.”</b>	Norovirus is a <b>highly contagious virus</b> that infects the <b>stomach and intestines</b> , leading to <b>acute gastroenteritis</b> , it is sometimes referred to as the <b>“winter vomiting bug”</b> or <b>“stomach flu”</b> . <b>Transmission:</b> <ul style="list-style-type: none"> <li>direct contact with an <b>infected person</b></li> <li>consumption of <b>contaminated food, water or contaminated surfaces</b></li> </ul> Outbreaks are most common in <b>closed, crowded environments</b> such as schools, cruise ships, hospitals, and care homes. <b>Symptoms:</b> vomiting, watery diarrhoea, stomach cramps, nausea, fever, headache, and fatigue Norovirus outbreaks are <b>most frequent during colder months</b> .

**MISSILES / UAV IN NEWS**

Missiles/ UAV	Context	Description
Heron Mk II	In the aftermath of <b>Operation Sindoor</b> , India is strengthening its unmanned surveillance capability. The armed forces have reportedly <b>contracted additional Heron Mk II UAVs</b> through emergency procurement, according to inputs from Israel’s defence	Heron Mk II is a <b>Medium-Altitude Long-Endurance (MALE) Unmanned Aerial Vehicle (UAV)</b> developed by <b>Israel Aerospace Industries (IAI)</b> . <b>Technical Specifications:</b> <ul style="list-style-type: none"> <li><b>Maximum take-off weight:</b> around <b>1,430 kg</b></li> <li><b>Endurance:</b> approximately <b>45 hours</b></li> <li><b>Top speed:</b> nearly <b>150 knots</b></li> <li><b>Operating range:</b> over <b>1,000 km</b></li> </ul> <b>Operational Capabilities:</b> Heron Mk II is designed for <b>persistent intelligence</b> ,

	industry.	surveillance, target acquisition, and reconnaissance (ISTAR) roles.
<b>ICGS Vigraha</b>	Indian Coast Guard Ship (ICGS) Vigraha has undertaken an <b>operational visit to Indonesia</b> as part of its overseas deployment to ASEAN countries.	<b>Type:</b> Offshore Patrol Vessel (OPV) of the Indian Coast Guard <b>Commissioned:</b> 2021 <b>Key Features of ICGS Vigraha</b> <ul style="list-style-type: none"> <li>• <b>Aviation capability:</b> can carry one twin-engine helicopter</li> <li>• <b>Interception capacity:</b> equipped with four high-speed boats for boarding/search operations</li> <li>• <b>Displacement:</b> around 2,200 tonnes.</li> </ul>
<b>Dark Eagle Hypersonic Missile System</b>	The US Army and Navy have successfully completed <b>integrated testing</b> of the <b>Dark Eagle Long-Range Hypersonic Weapon (LRHW)</b> , marking a key milestone in its development.	The <b>Dark Eagle</b> is a <b>non-nuclear, ground-launched hypersonic missile system</b> being developed for the <b>United States Army</b> . It is designed for <b>strategic strike missions</b> , intended to penetrate <b>anti-access/area-denial (A2/AD) environments</b> , suppress long-range hostile systems, and deliver <b>rapid precision effects</b> . <b>Hypersonic Glide Vehicle</b> The system includes a <b>Common Hypersonic Glide Body (C-HGB)</b> —an <b>unpowered, maneuverable glider</b> capable of achieving <b>very high hypersonic speeds (reported up to Mach 17)</b> .
<b>K-4 Missile</b>	India has <b>successfully tested the K-4 intermediate-range ballistic missile</b> from the nuclear-powered submarine <b>INS Arighaat</b> in the <b>Bay of Bengal</b> , marking a major milestone in strengthening India's sea-based deterrence capability.	The <b>K-4 (Kalam-4)</b> is a <b>submarine-launched intermediate-range ballistic missile (SLBM)</b> developed indigenously by the <b>Defence Research and Development Organisation (DRDO)</b> . It is designed primarily for deployment on <b>Arihant-class nuclear submarines</b> , each of which can carry up to <b>four K-4 missiles</b> . <b>Features:</b> The K-4 uses a <b>two-stage solid-fuel propulsion system</b> . It has an approximate <b>range of 3,500 km</b> , representing a significant enhancement over the earlier <b>K-15 (750 km range)</b> system. The missile is designed to carry <b>payloads up to 2 tonnes</b> , including nuclear warheads. <b>Significance:</b> The K-4 strengthens India's <b>second-strike capability</b> by enabling <b>sea-based deterrence</b> .

## ELEMENTS IN NEWS

Elements	Context	Description
<b>Fluoride</b>	A recent assessment by an NGO has reported that <b>several villages in the Mayurbhanj district of Odisha</b> are	Fluoride is a <b>negatively charged ion of fluorine (F<sup>-</sup>)</b> and is <b>highly reactive</b> , which is why it is not found in its elemental form in nature. It occurs widely in minerals and the environment. <b>Sources:</b>

	<p>experiencing <b>widespread fluorosis</b> due to <b>excessive fluoride levels in drinking water</b>.</p>	<p>Fluoride is naturally present in the Earth's crust (<math>\approx 0.3</math> g/kg) and occurs in minerals such as: <b>fluorspar, cryolite and fluorapatite</b></p> <p><b>Uses of Fluoride</b></p> <ul style="list-style-type: none"> <li>• aluminium manufacturing</li> <li>• as a <b>flux</b> in the <b>steel and glass industries</b></li> <li>• certain <b>industrial processes and chemical production</b></li> </ul>
<b>Nitrofurans</b>	<p>The <b>FSSAI</b> has launched an <b>egg safety drive</b> following public concern over the <b>detection of nitrofurans residues</b>, prompting stricter monitoring of poultry products.</p>	<p><b>Nitrofurans</b> are <b>synthetic broad-spectrum antibiotics</b>. The class includes four main compounds—<b>furazolidone, furaltadone, nitrofurazone, and nitrofurantoin</b>—all characterised by a <b>furan ring with a nitro group</b>. They were earlier widely used in <b>poultry, pigs, shrimp, and other livestock</b> because of their low cost and strong antimicrobial activity.</p> <p><b>Impacts on Human Health</b></p> <p>Some nitrofurans have shown <b>carcinogenic potential in animal studies</b>, raising safety concerns.</p>
<b>Nitrate</b>	<p>The <b>Central Ground Water Board</b> has reported that <b>over 20% of Delhi's groundwater samples in 2023</b> showed <b>nitrate concentrations above the permissible limit of 45 mg/l</b>.</p>	<p><b>Nitrate</b> is a chemical compound consisting of <b>nitrogen and oxygen</b>. It occurs <b>naturally in air, soil, water, and food</b>, and is essential for <b>plant and animal growth</b>.</p> <p><b>Applications</b></p> <p>Nitrates are widely used in:</p> <ul style="list-style-type: none"> <li>• <b>fertilisers</b> for agriculture and lawns</li> <li>• <b>food preservation</b> (as curing agents in processed foods)</li> <li>• <b>pharmaceuticals</b></li> <li>• <b>manufacture of explosives and munitions</b>.</li> </ul>

## DISEASES IN NEWS

Disease	Context	Description
<b>Onchocerciasis</b>	<p>Niger has become the first country in the African Region to successfully eliminate onchocerciasis (river blindness).</p>	<p>Onchocerciasis, commonly known as <b>river blindness</b>, is an infectious disease caused by the parasitic worm <b>Onchocerca volvulus</b>. Humans acquire the infection through <b>repeated bites from infected blackflies</b> belonging to the <i>Simulium</i> species. These flies typically breed near <b>rapidly flowing rivers and streams</b> found in remote tropical agricultural regions.</p> <p><b>Symptoms</b></p> <p>The condition can lead to <b>itchy and disfiguring skin rashes</b>, visual impairment, and in severe cases, <b>complete blindness</b>.</p>
<b>Shingles (Herpes Zoster)</b>	<p>A recent study has shown that receiving the <b>shingles vaccine</b> is associated with a <b>reduced risk of death related to dementia</b>.</p>	<p>Shingles is a <b>viral illness</b> characterized by a <b>painful blistering rash</b>. It is caused by the <b>varicella-zoster virus</b>, the same virus responsible for <b>chickenpox</b>. After a person recovers from chickenpox, the virus remains inactive in the nerve cells and may reactivate later in life, particularly when the <b>immune system becomes weak</b>.</p> <p><b>Symptoms</b></p> <p>Shingles usually begins as pain or tingling followed by a <b>band</b></p>

		<p>or strip of blisters on one side of the body, commonly on the torso, neck, or face.</p> <p><b>Treatment</b> A vaccine known as <b>Shingrix</b> is available and significantly reduces the risk of shingles and its complications. Antiviral medications may also be used to shorten the duration and intensity of symptoms when given early.</p>
<b>Haemorrhagic Septicaemia</b>	In Jharkhand's Jamshedpur Zoological Park, ten blackbucks have recently died due to suspected Haemorrhagic Septicaemia.	<p>Haemorrhagic Septicaemia, also called <b>pasteurellosis</b>, is a bacterial infection caused by specific serotypes of <i>Pasteurella multocida</i>.</p> <p>It is a serious disease of cattle and buffaloes and is characterised by acute, highly fatal septicaemia, leading to very high illness and death rates</p> <p><b>Treatment:</b> The disease can be controlled through vaccination, and early intravenous administration of appropriate antimicrobials after the onset of symptoms can significantly reduce mortality.</p>
<b>Buccal Mucosa Cancer</b>	A recent study reports that alcohol consumption—even in small amounts—significantly increases the risk of Buccal Mucosa Cancer (BMC).	<p><b>Buccal Mucosa Cancer</b> is a type of oral cancer that begins in the inner lining of the cheeks (buccal mucosa). It usually arises from squamous cells, and therefore most cases are classified as Squamous Cell Carcinoma (SCC). It is the predominant oral cancer in the Indian subcontinent.</p> <p><b>Treatment</b> Diagnosis involves clinical examination, biopsy, and imaging. Treatment depends on the stage and may include surgery, radiation therapy, chemotherapy.</p>
<b>Spinal Muscular Atrophy</b>	Abu Dhabi's Sheikh Khalifa Medical City has become the first hospital in the world to administer ITVISM, a single-dose gene therapy designed for the treatment of spinal muscular atrophy (SMA).	<p>Spinal muscular atrophy is a rare, inherited neuromuscular disease in which muscles gradually become weak and waste away. The condition primarily affects motor neurons, which are the nerve cells in the spinal cord and brainstem responsible for controlling voluntary muscle movement.</p> <p><b>Treatment</b> At present, there is no complete cure for spinal muscular atrophy. Treatment focuses on managing symptoms, preventing complications, supporting mobility and respiration.</p>

## VITAMINS/PROTEINS IN NEWS

Vitamins/ Proteins	Context	Description
<b>GlowCas9 Protein</b>	Scientists at the Bose Institute, Kolkata have developed a new	<p>GlowCas9 is a CRISPR-based protein that emits light while editing genes.</p> <p>It is essentially a bioluminescent form of Cas9, allowing researchers to visually monitor gene-editing inside living</p>

	protein named <b>GlowCas9</b> that enables real-time tracking of gene-editing activity.	systems. <b>Applications</b> GlowCas9: <ul style="list-style-type: none"> <li>improves <b>monitoring accuracy</b> of gene-editing</li> <li>can enhance <b>Homology-Directed Repair (HDR)</b> efficiency</li> <li>supports correction of genetic disorders linked to faulty DNA repair, such as <b>sickle cell anaemia and muscular dystrophy</b></li> <li>opens new possibilities in <b>theratracking</b>—visualizing gene therapy as it occurs</li> </ul>
<b>Vitamin C</b>	Recent research indicates that high intake of vitamin C may help protect the lungs from damage caused by fine particulate air pollution (PM) by reducing oxidative stress	<b>Vitamin C (ascorbic acid)</b> is a water-soluble vitamin essential for normal growth, tissue repair, and immune function. Because the human body cannot produce or store it, vitamin C must be obtained regularly through diet. <b>Deficiency:</b> Since vitamin C is not stored in the body, deficiency can develop quickly. Severe deficiency leads to scurvy, characterised by <b>fatigue, anemia, swollen or bleeding gums, tooth loss, joint pain, poor wound healing, and skin changes.</b>

### 6.3 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
World AIDS Day	1 <sup>st</sup> December
Sanchar Saathi: A New Layer of Digital Public Security	2 <sup>nd</sup> December
WHO's guidance on GLP-1 therapy for Obesity	5 <sup>th</sup> December
India's TB Burden Remains Alarmingly High	6 <sup>th</sup> December
Gallbladder Cancer in the Gangetic Belt	10 <sup>th</sup> December
Navara: Kerala rare medicinal rice	12 <sup>TH</sup> December
ICMR's Zero Snakebite Death Initiative	15 <sup>th</sup> December
National Supercomputing Mission	16 <sup>th</sup> December
Global Capability Centres	16 <sup>th</sup> December
MahaCrimeOS AI and the Future of AI-Driven Policing in India	17 <sup>th</sup> December
India's Biosecurity Challenges and initiatives	18 <sup>th</sup> December
Project Suncatcher and the Rise of Space-based Digital Infrastructure	18 <sup>th</sup> December
DHRUV64 microprocessor	19 <sup>th</sup> December
Understanding Superkilonova	24 <sup>TH</sup> December
MAVEN Mission	24 <sup>TH</sup> December
LVM3-M6 Mission Explained	25 <sup>TH</sup> December
Micrometeoroids and Orbital Debris: A Rising Challenge for Space Safety	27 <sup>th</sup> December

## 7. CULTURE & HISTORY

### 7.1 SHORT ARTICLES

#### National Film Heritage Mission

##### Context

- In a recent reply in the Lok Sabha, the Minister of State for Information & Broadcasting informed that 1,469 film titles amounting to nearly 4.3 lakh minutes of footage have been digitised under the National Film Heritage Mission (NFHM).

##### About the National Film Heritage Mission

- The National Film Heritage Mission was launched in 2015 by the Ministry of Information & Broadcasting to preserve, restore, and digitise India's film heritage.
- The mission is implemented by the National Film Archive of India (NFAI), Pune.

##### Objective

- The National Film Heritage Mission aims to assess the condition of film reels, undertake 2K/4K picture and sound restoration of landmark films, and digitise films for long-term preservation. It also focuses on creating specialised archival vaults for safe storage, conducting training and workshops to build professional capacity, and developing a web-based, end-to-end IT system for archival management, thereby safeguarding India's cinematic heritage for future generations.

#### Uchi Pillaiyar Temple

##### Context

- The Tamil Nadu government informed the Madurai Bench of the Madras High Court that the traditional Karthigai Deepam lamp was lit this year at the Uchi Pillaiyar Temple mandapam on Thirupparankundram hill, continuing an unbroken practice of over 150 years.

##### Uchi Pillaiyar Temple

- The Uchi Pillaiyar Temple, also called the Rockfort Temple, is situated atop Rockfort Hill in Tiruchirappalli (Trichy), Tamil Nadu, and is dedicated to Lord Ganesha. The shrine

dates back to the 7th century CE and is perched at a height of about 83 metres (272 ft) above ground level.

##### Temple Complex

The Rockfort complex houses three closely located temples:

- **Maanikka Vinayakar Temple** at the foothill, dedicated to Lord Ganesha
- **Uchchi Pillaiyar Temple** at the summit, also dedicated to Lord Ganesha
- **Thayumanaswamy Temple**, dedicated to Lord Shiva, located en route up the hill

The smooth rock surface was initially carved by the Pallavas, while the Nayaks of Madurai, under the Vijayanagara Empire, later completed the temple complex that stands today.

#### Rohtasgarh Fort

##### Context

- An under-construction ropeway meant to improve tourist access to the historic Rohtasgarh Fort in Bihar's Rohtas district collapsed during a trial run recently.

##### About Rohtasgarh Fort

- The fort stands on a hilltop and is regarded as one of the largest and oldest hill forts in India.
- The fort complex includes grand gateways, palaces, temples, mosques, reservoirs, and administrative structures, exhibiting a blend of Indo-Afghan architectural styles.
- According to tradition, the fort is associated with Raja Harishchandra of the Solar Dynasty.
- It remained largely abandoned until the Revolt of 1857, when Amar Singh, brother of freedom fighter Kunwar Singh, used it as a base.

#### Ramappa Temple

##### Context

- The Ambassador and Permanent Representative of India to UNESCO in Paris recently visited the Ramappa Temple to

review the **preservation and conservation measures** being implemented by the **Archaeological Survey of India (ASI)**

#### Historical Background

- The **Ramappa Temple**, also called the **Rudreshwara Temple**, is located in **Telangana**. It was built in **1213 CE** during the **Kakatiya dynasty** by **Recharla Rudra**, a general under **King Ganapati Deva**. The presiding deity is **Ramalingeswara Swamy**.

#### Architectural Features

- The temple stands on a **six-foot-high, star-shaped platform**, with its **pillars, walls, and ceilings richly carved**.
- **Lightweight, earthquake-resistant construction:** Bricks used in the **gopuram** were made from a mixture of **clay, acacia wood, chaff, and myrobalan fruit**, making them so light that they can **float on water**. This lightweight structure reduces the risk of collapse during earthquakes.
- **Sandbox technique:** The foundation was built using the **sandbox technique**, where a pit was filled with **sand, lime, jaggery, and black myrobalan fruit**.
- In **2021**, the temple was inscribed as a **UNESCO World Heritage Site** under the title "**Kakatiya Rudreshwara (Ramappa) Temple, Telangana.**"

## **OI Chiki Script**

#### Context

- The **President of India** recently participated in the **centenary celebrations of the OI Chiki script** of the **Santali language**, held in **Jamshedpur, Jharkhand**.

#### About the OI Chiki Script

- The **OI Chiki script** was **invented in 1925** by **Pandit Raghunath Murmu**, who was a writer and teacher belonging to the region of the former **Mayurbhanj State** (now in **Odisha**). **OI Chiki** was designed **exclusively to match Santali sounds and grammar**, making it structurally well suited to the language.
- The script has **30 letters** and is **entirely phonetic**, meaning each character corresponds directly to a distinct sound, which simplifies reading and writing. The script was publicly demonstrated for the first time in **1939** during the **Mayurbhanj State exhibition**.

#### **Santali Language**

- Santali belongs to the **Munda branch of the Austroasiatic language family**, one of the oldest language families of **South and Southeast Asia**. The language is spoken primarily in **Jharkhand and West Bengal**, and also by communities in **Odisha, Assam, northwestern Bangladesh, eastern Nepal and Bhutan**.

## **United Nations Alliance of Civilizations (UNAOC)**

#### Context

- India reaffirmed its commitment to **Vasudhaiva Kutumbakam**, religious harmony, and peaceful coexistence at the **11th UNAOC Forum in Riyadh**.

#### Background

- UNAOC was established in **2005** as a political initiative of **former UN Secretary-General Kofi Annan** and was **co-sponsored by Spain and Türkiye**. It was conceived as a **soft-power tool** of the UN Secretary-General for **conflict prevention and conflict resolution**.

#### Functions

- UNAOC works through a **global network of partners** including governments, regional and international organisations, civil society, foundations, and the private sector to **promote cross-cultural dialogue and improve relations among diverse communities and nations**.

#### Funding Mechanism

- A **voluntary Trust Fund** supports UNAOC projects, outreach activities, and operational needs. It is administered by the **UN Secretariat**.

## Natyashastra

### Context

- The Indira Gandhi National Centre for the Arts (IGNCA) recently organised an academic programme titled “Natyashastra – Synthesis of Theory and Praxis” during the 20th Session of UNESCO’s Intergovernmental Committee for Safeguarding of Intangible Cultural Heritage held at the Red Fort, Delhi.

### What is the Natyashastra?

- The Natyashastra is an ancient Sanskrit treatise on performing arts, combining *Natya* (drama and dance) and *Shastra* (science). It was composed by sage Bharata Muni and is dated between the 2nd century BCE and 2nd century CE, making it the earliest known comprehensive text on performance traditions in South Asia.

### Significance

- The text contains about 36,000 verses detailing drama (*natya*), acting (*abhinaya*), music (*sangita*), emotions (*bhava*), and aesthetic experience (*rasa*). It presents drama as a medium for spiritual and moral upliftment. One of its greatest contributions is the theory of *Rasa*, the core emotional essence underlying artistic experience.

### Global Recognition

- The Natyashastra has been inscribed in UNESCO’s Memory of the World Register, acknowledging its universal cultural value.

## Battle of Adwa

### Context

- The Prime Minister of India recently laid a wreath at the Adwa Victory Monument in Addis Ababa, honouring Ethiopia’s historic triumph in the Battle of Adwa (1896).

### Overview of the Battle

- The Battle of Adwa was fought on 1 March 1896 between the Ethiopian Empire (Abyssinia) and Italy, marking the decisive encounter of the First Italo-Ethiopian War (1895–1896). The conflict was rooted in Italy’s colonial ambitions in Africa during the wider “Scramble for Africa.”

- The Ethiopian forces were led by Emperor Menelik II, who mobilised an army of around 100,000 soldiers. They confronted approximately 17,000 Italian troops, ultimately inflicting a decisive defeat on Italy and safeguarding Ethiopia’s sovereignty.

### Significance of the Victory

- Adwa became a symbol of African resistance, representing the first major defeat of a European colonial power by an African army in the colonial era. The victory inspired anti-colonial movements across Africa and the Black diaspora.

## Thanjavur Painting

### Context

- The Department of Posts recently transported a priceless Thanjavur painting of Shri Ram from Bengaluru to Ayodhya through its Logistics Post service, highlighting the secure movement of valuable cultural artefacts.

### What is a Thanjavur (Tanjore) Painting?

- Thanjavur painting is a classical South Indian art tradition that originated around 1600 CE in Thanjavur, Tamil Nadu. The art form flourished under the Nayaka rulers and later Marathas of Thanjavur and has been awarded a Geographical Indication (GI) tag. These paintings are typically made on wooden panels (*palagai padam*).

### Technique

- Thanjavur paintings are generally created on canvas mounted on wooden boards made from jackfruit or teak and fixed with Arabic gum. Artists employ *gesso work*—a mixture of chalk, gypsum, and glue—to create raised, embossed designs that add depth and relief to the figures.

### Distinctive Features

- Thanjavur paintings are famous for rich, vibrant colours such as deep red, blue, and green and extensive use of gold leaf or foil, giving the works a brilliant, jewel-like appearance.
- Themes:** The themes are predominantly religious, depicting Hindu deities such as Lord Krishna, Lord Rama, Lord Ganesha, and

Goddess Lakshmi, often surrounded by attendants or floral motifs in ornate arches.

## 7.2 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
Durand Line Dispute: Historical Roots and Contemporary Challenges	1 <sup>st</sup> December
Ambedkar's legacy and modern-day significance	4 <sup>th</sup> December
Mahad Satyagraha: The First Rehearsal of India's Constitution	5 <sup>th</sup> December
Legacy of Vande Mataram	9 <sup>th</sup> December
Assam Movement	10 <sup>th</sup> December
C. Rajagopalachari and his contributions	11 <sup>th</sup> December
Bengal's Multidimensional Contribution to Indian Independence	13 <sup>th</sup> December
Deepavali inscribed as UNESCO Intangible cultural heritage	13 <sup>th</sup> December
How Delhi became the new capital of British India	15 <sup>th</sup> December
1971 Bangladesh Liberation War and Vijay Diwas	19 <sup>th</sup> December
Balidan Diwas	22 <sup>ND</sup> December
Communist Party of India at 100	27 <sup>TH</sup> December

## 8. GEOGRAPHY AND DISASTER MANAGEMENT

### 8.1 SHORT ARTICLES

#### Southern Ocean Carbon Anomaly

##### Context

- A Nature Climate Change study shows the Southern Ocean has continued to absorb more carbon dioxide since the early 2000s, revealing a striking carbon anomaly, contrary to earlier models predicting a weakening.

##### About Carbon Anomaly

- **Previous Predictions vs Reality:** For years, climate models predicted that warming and ozone depletion would intensify westerly winds.
  - This was expected to increase the upwelling of deep, carbon-rich waters, causing the Southern Ocean to release more CO<sub>2</sub> and weaken as a carbon sink.
  - However, long-term observations show the opposite.
- **Role of Ocean Stratification:** The key mechanism behind this anomaly is increased ocean stratification.
  - Increased freshwater from melting glaciers and higher rainfall forms a lighter, less dense layer on the ocean surface.
  - This stable surface layer acts like a 'lid', trapping the carbon-heavy deep waters **100-200 metres below the surface** and preventing CO<sub>2</sub> from escaping into the atmosphere (Source: Nature Climate Change).
- **A Temporary Buffer:** Scientists caution this enhanced sink effect may be temporary. If ocean mixing strengthens in the future, this trapped carbon could be rapidly released, accelerating climate change.

##### About Southern Ocean

- The Ocean is defined by all waters south of 60 degrees South latitude, is the fourth-largest ocean, and formed 30 to 34 million years ago when Antarctica separated from South America and Australia.

- **Climate Regulator:** Acts as a massive carbon and heat sink, absorbing about 40% of human-produced CO<sub>2</sub> and over 70% of the excess heat trapped by greenhouse gases.
- **Extreme Weather:** Known for having the strongest average winds and largest waves on Earth, sailors often refer to its latitudes as the "Roaring Forties," "Furious Fifties," and "Shrieking Sixties".

#### Pamir-Karakoram Anomaly

##### Context

- Scientists are studying deep ice cores from Tajikistan's Kon-Chukurbashi ice cap to understand the Pamir-Karakoram anomaly, where glaciers remain stable or grow despite global warming, unlike most other glaciers

##### About Pamir-Karakoram Anomaly

- **Primary Cause:** The anomaly is strongly linked to **Western Disturbances**, cyclonic storms originating in the Mediterranean region that bring heavy winter snowfall to the Karakoram. This replenishes the glaciers, offsetting summer melt.
- **Cooler Summers:** A unique weather pattern, sometimes called the 'Karakoram vortex', creates cooler summer temperatures over the region, which reduces ice melt compared to the rest of the Himalayas.
- **High Altitude Topography:** The Karakoram mountains are high and steep, which helps in the accumulation of snow at higher altitudes where it is too cold to melt.
- **Debris Cover:** A thick layer of rock and debris covers many glaciers in the region. This debris acts as an insulator, protecting the ice underneath from direct sunlight and warmer air temperatures.

##### About Karakoram

- **Location:** Spans the borders of **Pakistan, China, and India**, with extremities reaching into Afghanistan and Tajikistan.

- **Boundaries:** Bounded to the north by the Pamir Mountains and the Kunlun Mountains, and to the south by the Indus and Shyok rivers, which separate it from the Himalayas.
- **Highest Peak:** K2 (Mount Godwin-Austen), the world's second-highest mountain at 8,611 m.
- **Glaciation:** The range is the most glaciated part of the world outside the polar regions. Notable glaciers include: Siachen Glacier, Biafo Glacier, Baltoro Glacier.
- **Eight-Thousanders:** Contains four of the world's 14 peaks above 8,000 meters: K2, Gasherbrum I, Broad Peak, and Gasherbrum II.

## Cannabis Cultivation

### Context

- Kandhamal district in Odisha has become a major hub for illegal cannabis (ganja) cultivation, driven by a combination of geographical advantages and economic distress.

### About Cannabis

- **Cannabis** is a genus of flowering plants in the family **Cannabaceae**, widely known for its psychoactive and medicinal properties.
- It consists of three primary species: *Cannabis sativa*, *Cannabis indica*, and *Cannabis ruderalis*.
- The plant contains over 540 chemical substances, including more than 100 **cannabinoids**.
  - **THC (Tetrahydrocannabinol):** The main psychoactive compound responsible for the "high".
  - **CBD (Cannabidiol):** A non-intoxicating cannabinoid often used for its therapeutic potential.
- Cannabis is used recreationally (marijuana/weed), medically (pain/nausea/epilepsy), and industrially (low-THC hemp for fiber/paper).
- Short-term Health effects include relaxation, altered sensory perception, increased appetite, anxiety, and impaired motor coordination, while long-term risks involve respiratory issues from smoking, and impacts on adolescent brain development.

### Narcotic Drugs and Psychotropic Substances (NDPS) Act 1985

- It criminalises the cultivation, production, possession, sale, and transport of cannabis **resin (charas)** and **flowering/fruiting tops (ganja)**.
- The Act excludes the leaves and seeds, **allowing states to frame their own rules for the consumption of products like bhang**.
- The **central government can issue licenses for cultivating cannabis** for industrial purposes (hemp) to produce fibre, seeds, or for horticultural use.

## 8.2 SNIPPETS

Topics	Details
Subansiri Lower Hydroelectric Project	<ul style="list-style-type: none"> <li>• The Union Minister of Power, Housing &amp; Urban Affairs inaugurated the commercial operation of Unit-2 (250 MW) of India's largest hydropower project.</li> <li>• Approved in 2003, the Subansiri Lower Hydroelectric Project is a run-of-the-river scheme with 2000 MW capacity (8×250 MW), <b>located at Gerukamukh on the Arunachal Pradesh-Assam border</b>. Built on the <b>Subansiri River—the largest trans-Himalayan tributary of the Brahmaputra</b> originating in Tibet.</li> </ul>
Superkilonova	<ul style="list-style-type: none"> <li>• An international team, including scientists from IIT Bombay and the Indian Institute of Astrophysics, Bengaluru, reported evidence for a possible</li> </ul>

	<p>superkilonova in a transient event 1.3 billion light-years away.</p> <ul style="list-style-type: none"> <li>• A superkilonova is a rare, high-energy cosmic event that combines two types of stellar explosions: a supernova (the death of a massive star) and a kilonova (the collision of two neutron stars).</li> <li>• Unlike typical events, a <b>superkilonova occurs when a massive, rapidly spinning star explodes as a supernova and its core splits into two low-mass neutron stars</b>. These "twin" neutron stars then spiral inward and collide almost immediately, triggering a kilonova. It <b>appears brighter, bluer, and lasts longer than a standard kilonova</b> due to additional energy from the preceding supernova or "fallback heating" from ejected material.</li> </ul>
Shyok Tunnel	<ul style="list-style-type: none"> <li>• The Defence Minister inaugurated the Shyok Tunnel in eastern Ladakh.</li> <li>• The Shyok Tunnel built on the strategic DS-DBO Road - <b>India's only surface link to Daulat Beg Oldie (DBO), the northernmost military outpost near the Line of Actual Control (LAC) with China</b> and a key access route to Siachen Glacier. It ensures all-weather connectivity by bypassing avalanche- and landslide-prone sections, enabling reliable troop mobility and logistics even in extreme winters.</li> </ul>
Nahargarh Biological Park	<ul style="list-style-type: none"> <li>• A safari bus carrying 15 tourists caught fire during a lion safari at Nahargarh Biological Park in Jaipur, Rajasthan.</li> <li>• Nahargarh Biological Park, spread over 720 hectares in the Aravalli hills about 12 km from Jaipur, forms part of Nahargarh Wildlife Sanctuary and is <b>renowned for its lion and tiger safaris</b>. The sanctuary, named after 18th-century Nahargarh Fort, features dry deciduous forests, scrublands, and grasslands supporting Asiatic lions, Bengal tigers, leopards, sloth bears, crocodiles, hyenas, and wild boars.</li> </ul>

### 8.3 ADDITIONAL TOPICS FOR READING FROM IASGYAN WEBSITE

Topic Name	Date
Saudi Arabia Snowfall 2025 : Why Is The Desert Turning White?	24 <sup>th</sup> December
Disaster Risk Reduction: Govt Approves ₹507 Cr for Resilient Panchayats	19 <sup>th</sup> December

## 9. GOVERNMENT SCHEMES

### 9.1 SHORT ARTICLES

#### Rashtra Prerna Sthal

##### Context

- Prime Minister inaugurated the Rashtra Prerna Sthal in Lucknow on the 101st birth anniversary of former PM Atal Bihari Vajpayee.

##### Details

- Rashtra Prerna Sthal transformed from a former garbage dump site, featuring towering 65-foot bronze statues of Atal Bihari Vajpayee, Pandit Deendayal Upadhyaya, and Dr. Syama Prasad Mookerjee. **Atal Bihari Vajpayee served as Prime Minister three times (1996, 1998–1999, 1999–2004)**, renowned for landmark initiatives in infrastructure and telecom reforms; awarded Padma Vibhushan (1992) and Bharat Ratna (2015), **his birth anniversary on December 25 is celebrated as Good Governance Day.**

#### PRAGATI Platform

##### Context

- The Prime Minister urged states to replicate the PRAGATI platform at state level for enhanced technology-driven monitoring of projects and reforms.

##### Details

- PRAGATI (Pro-Active Governance and Timely Implementation) is an innovative ICT-enabled multi-modal platform **launched in 2015 for proactive oversight of key government programmes**, timely project execution, and efficient public grievance redressal. It **promotes cooperative federalism through the "Team India" concept**, enabling direct Centre-State collaboration to resolve bottlenecks and inter-departmental issues. Key features include a **three-tier structure involving the PMO, Union Secretaries, and State Chief Secretaries for real-time interaction**; integration of video conferencing, geo-spatial technology, drone inputs, and data analytics;

and linkages with portals like CPGRAMS, PM Gati Shakti, PARIVESH, and the Project Monitoring Group for seamless tracking.

#### Rashtriya Vigyan Puraskar

##### Context

- President conferred the second edition of the Rashtriya Vigyan Puraskar, honoring 24 scientists and one team for contributions across 13 scientific domains.

##### Details

- Instituted by the Ministry of Science and Technology and **modeled on Padma Awards**, the Rashtriya Vigyan Puraskar spans four categories—Vigyan Ratna (lifetime distinction), Vigyan Shri (distinguished contributions), Vigyan Yuva–Shanti Swarup Bhatnagar (young talent under 45), and Vigyan Team (collaborative innovation).

#### Rare Earth Permanent Magnet Manufacturing Scheme

##### Context

- Union Cabinet has approved a ₹7,280 crore scheme to establish domestic manufacturing of integrated Rare Earth Permanent Magnets (REPM).

##### Details

- The **seven-year scheme** (two-year setup + five-year incentives) allocates capacity to up to five beneficiaries (1,200 MTPA each via competitive bidding), offering ₹6,450 crore in **sales-linked incentives** and ₹750 crore in **capital subsidies** to cover the full value chain from rare-earth oxides to finished magnets. **India currently imports nearly all REPMs**, with China dominating 60-90% of global supply.

#### Reservation for Agniveers in CAPFs

##### Context

- Union Home Ministry raises reservation for ex-Agniveers in CAPF Group C posts from

10% to 50%, with exemptions from physical tests.

#### Details

- The Agnipath scheme, launched in 2022, is a **short-term recruitment program** enrolling youth as Agniveers for **four years (including training) in the Army, Navy, and Air Force** to build a younger, tech-savvy force while reducing long-term pension costs. Eligibility requires Indian citizenship, prescribed education (minimum Class 10), physical, and medical standards; **age 17.5–21 years**. Agniveers serve as Personnel Below Officer Rank, with up to **25% retained permanently based on merit**; others exit with skill certificates, a tax-free Seva Nidhi package of about ₹11.71 lakh (from matched contributions), **₹48 lakh insurance cover, but no pension**.

## **Bharat Taxi**

#### Context

- Bharat Taxi, India's first driver-owned cooperative ride-hailing platform, officially launched nationwide on January 1, 2026.

#### Details

- Bharat Taxi is a national mobility app operated by Sahakar Taxi Cooperative Limited, promoted by major cooperatives like Amul,

NABARD, with advisory support from NeGD under MeitY. It **features a zero-commission model where drivers (called 'Saarthis') retain nearly 100% of fares**, with profits redistributed as dividends and incentives. **No surge pricing in normal conditions ensures predictable**, affordable fares for passengers, while integrations with DigiLocker, UMANG, Metro systems, and police for real-time tracking enhance safety and convenience.

## **DHRUVA Framework**

#### Context

- Draft amendments to the Post Office Act, 2023, were released by the Department of Posts to enable the nationwide implementation of the DHRUVA digital addressing system.

#### Details

- DHRUVA, or Digital Hub for Reference and Unique Virtual Address, is a proposed Digital Public Infrastructure (DPI) modeled on Aadhaar and UPI, developed by India Post to **standardize and digitize physical addresses**. It enables users to share "label" (like name@dhruva) instead of full addresses with e-commerce, logistics, and gig platforms; upon consent, the platform accesses the descriptive address and precise geo-coded DIGIPIN.