

1. **INS Tamal**: Recently, in a significant step towards India's defence self-reliance, INS Tamal, a state-of-the-art stealth multi-role frigate, is scheduled to be formally commissioned into the Indian Navy at Kaliningrad, Russia.
   - **About INS Tamal**: Latest addition to India's naval fleet, embodying both advanced technology and symbolic heritage.
     - Stealth multi-role frigate is part of the Krivak class series acquired from Russia over the past two decades.
     - Named Tamal after the mythical weapon wielded by Indra, the king of gods in Indian mythology, the ship reflects strength and precision in combat.
     - It is the second vessel in the Tushil-class series—an enhanced successor to the Talwar and Teg classes, each comprising three frigates.
   - **Key Features: Indigenous Components:** 26% made in India, including BrahMos cruise missiles for land and sea targets.
     - **Enhanced Firepower:** Equipped with Vertical Launch Surface-to-Air Missiles (SAMs), upgraded 100 mm gun, Electro-Optical/Infrared (EO/IR) systems, Close-In Weapon System (CIWS), torpedoes, and anti-submarine rockets.
     - **Surveillance & EW Suite:** Advanced radars, fire control, and electronic warfare systems for superior situational awareness.
     - **Aerial Capability:** Supports Air Early Warning & Multi-Role helicopters for extended reach.
     - **High Performance:** Top speed over 30 knots, high tonnage-to-firepower ratio, and proven endurance through extensive sea trials.
2. **Quantum Communication :** Recently, a professor from the IIT Delhi projected that India could achieve satellite-based **quantum communication** within five years.
     - While progress under the **National Quantum Mission (NQM)** continues, experts stress the need for greater institutional support, funding, and technological advancement to achieve this goal.
   - **About Quantum Communication:** Involves transmitting secure information using principles of quantum mechanics.

- Uses techniques like Quantum Key Distribution (QKD), quantum teleportation, and dense coding.
- Supports secure, long-distance communication through methods like free-space optics, quantum repeaters, and decoherence-free subspaces.
- Strategically important for defence, cybersecurity, and critical infrastructure.

- **Quantum Key Distribution (QKD):** Core technique using photons to generate encryption keys that cannot be intercepted without detection.
  - One of the most secure but technically complex forms of QKD **involves quantum entanglement**, where two photons remain connected such that any change to one instantly affects the other.
- **About NQM :** Launched in 2023 to advance India's capabilities in quantum technologies. Part of PM-STIAC (PM-Science, Technology, and Innovation Advisory Council).
  - **Key Objectives**: Build quantum computers with 50–1000 qubits using superconducting and photonic systems.
  - Enable satellite-based quantum communication across 2000+ km within India and with global partners.
  - Develop precision tools like atomic clocks and magnetometers.

3. **Kabini Reservoir :** Recently, the Cauvery Neeravari Nigama Limited (CNNL) reported that the **Kabini Reservoir** site was inspected, and the resulting report confirmed that there is no risk to its structural integrity.
   - **Kabini Reservoir:** Located in **Heggadadevanakote Taluk**, **Mysuru district**, **Karnataka**, India.
     - Built across the **Kabini River**, a major **tributary of the Cauvery River**.
     - Commissioned in **1974** under the **Cauvery Water Project** to augment irrigation and water management.
     - **Purpose**: Irrigation , drinking Water Supply , flood Control and support for Kabini Wildlife Sanctuary's ecology.
   - **Kabini River:** Also known as Kabani or Kapila) is a significant tributary of the River Cauvery.
     - It originates in the Pakramthalam Hills of Wayanad district, Kerala.
     - Formed by the confluence of the Panamaram River and the Mananthavady River.

- Flows eastward from Kerala into Karnataka and joins the Cauvery River at Tirumakudalu Narasipura in Mysuru district, Karnataka.

4. **e-Rakt Kosh:** Recently, in a significant move to enhance access to life-saving blood for individuals with rare blood types, the Union Health Ministry announced plans to integrate the **Rare Donor Registry of India (RDRI)** with the national blood management portal, **e-Rakt Kosh.**
   - This integration is expected to save time, reduce costs, and improve outcomes during medical emergencies.

- **About e-Rakt Kosh:** Official online blood bank management system of India, implemented under the National Health Mission (NHM).
  - **Coverage:** Over 3,800 blood centers across the country are registered on the platform.
  - **Developer:** Developed by the Centre for Development of Advanced Computing (C-DAC).
  - **Architecture:** Built with a modular, scalable, and rule-based architecture to accommodate the diverse needs of stakeholders nationwide.
  - **Purpose:** Acts as a central hub for blood-related services including availability, donor details, and donation camp information.
  - **Objectives:** Ensure safe and adequate blood supply, minimize turnaround time for blood services, prevent wastage of blood and components, curb professional (paid) blood donations, create a national network of blood banks and maintain a comprehensive donor repository
- **About RDRI**: Created by the ICMR – National Institute of Immunohematology (ICMR-NIIH) in collaboration with four partner institutes.
  - **Database:** Maintains a screened database of approximately 4,000 donors tested for over 300 rare blood group markers.
  - **Purpose:** Helps in promptly locating compatible rare blood donors, ensuring safer and more effective blood transfusions.
  - **For Alloimmunised Patients:** Especially beneficial for individuals whose immune systems reject common blood antigens, by providing access to highly specific matches.
  - **Technological Advancement:** Utilises a DNA-based multiplex PCR test to rapidly identify rare blood types, customised for the Indian population.

5. **Sariska Tiger Reserve :** Recently, in a controversial move that could significantly impact both conservation efforts and mining policy in Rajasthan, the state government has initiated plans to redraw the boundaries of the **Critical Tiger Habitat (CTH)** within the **Sariska Tiger Reserve.**



   - **About Sariska Tiger Reserve :** Located in Rajasthan, in the Aravalli mountain range (world's oldest mountain range).
     - Originally the hunting grounds of the Maharaja of Alwar and declared a wildlife reserve in 1955 and a national park in 1979.
     - **Tourist Attractions**: Known for ancient temples, forts, and lakes like Pandu Pol, Bhangarh Fort, Ajabgarh, Pratapgarh, Siliserh Lake, and Jai Samand Lake.
     - **Landscape & Vegetation**: Rocky terrain with arid scrub, grasslands, hilly cliffs, and semi-deciduous forests.
       - ✓ Falls under Northern Tropical Dry Deciduous and Thorn Forest types.
     - **Flora**: Dominated by Dhok trees and other species: Salar, Kadaya, Gol, Ber, Banyan, Gugal, Bamboo, Kair, and Adusta.
     - **Fauna**: Apart from tigers, home to leopards, sambhars, chitals, nilgais, wild boars, and four-horned antelopes.

6. **Agarwood:** Recently, the global surge in demand for agarwood has led to excessive harvesting, pushing wild agarwood trees to the brink of extinction.
   - **About Agarwood**: Aquilaria malaccensis, or agarwood, is a tree from the Thymelaeaceae family.
     - It produces a fragrant resin, highly valued for perfumes and incense, known as Oud, Gaharu, or Agar.
     - This resin forms when the tree is infected by a specific mould (Phaeoacremonium, previously Phialophora parasitica), which stresses the tree.
     - Naturally, it takes nearly 10 years for the tree to mature in the wild.
     - **Found:** Mainly in Northeast India – Assam, Tripura, Arunachal Pradesh, Nagaland, Mizoram, and Manipur.

- Tripura's capital, Agartala, gets its name from the abundance of agarwood trees once found there.
- **Significance**: Revered in ancient Ayurvedic texts like Charaka Samhita for its healing properties and one of the costliest natural products globally.
- Used in religious rituals, medicines, and premium perfumes across the world.
- **IUCN Red List**: Critically Endangered
- **CITES**: Listed in Appendix II (regulated trade)
- **Wildlife Protection Act (India)**: Schedule IV
- India has submitted a Non-Detriment Finding (NDF) to prevent agarwood from stricter trade scrutiny under CITES.

7. Global Drought Outlook Report : The OECD (Organisation for Economic Co-operation and Development) has recently released the Global Drought Outlook Report.

- **About the Report**: Focuses on how countries can improve drought management in the face of climate change.
  - Highlights the growing impact of droughts on people, ecosystems, and economies.
  - Offers practical policy ideas to reduce losses and support long-term adaptation to drier conditions.
- **Key Findings**: **Global Threat**: 40% of the world's land is now facing more frequent and intense droughts.
  - **Economic Losses**: Drought-related economic damage is rising by 3% to 7.5% annually.
  - By 2035, drought losses are expected to grow by at least 35%.
  - Since 1980, 37% of land has dried, with falling river and groundwater levels.
- **About OECD** : Group of **38 countries** that believe in democracy and free-market economies.
  - Most member countries are developed and support open, competitive economies.
  - **Formed : December 14, 1960**, by 18 European nations + **USA + Canada** ; **HQ**: Paris, France.
  - **Goal:** Create policies t promote prosperity, equality, opportunity, and well-being for everyone.
  - The OECD publishes **economic reports, data, and forecasts** on global growth trends.
  - **India is not a member**, but it closely works with the OECD on many issues.