

1. **Saola (Pseudoryx nghetinhensis):** In a significant breakthrough for wildlife conservation, an international team of scientists has successfully mapped the genome of the elusive saola often referred to as the "Asian unicorn."
   - **About Saola :** One of the rarest large land mammals, was first discovered in 1992 by the Vietnamese Ministry of Forestry and WWF. It is known for its long, parallel horns (up to 20 inches) in both sexes and distinctive white facial markings.
     - **Scientific Name:** Pseudoryx nghetinhensis.
     - **Common Names:** Saola, Asian Unicorn, Spindlehorn.
     - **Appearance**: Known for its dark brown coat, white markings on its face, and two long, straight horns that are present on both males and females.
     - **Habitat:** Forests in the Annamite Range in Vietnam and Laos.
     - **IUCN Status:** Critically Endangered.
     - **Threats:** Primarily hunting, particularly commercial snaring to supply the wildlife trade.
2. **Carbon Tax:** Recently, the UK's proposed carbon tax has raised concerns over its impact on Indian exports, posing a key hurdle in finalizing the India-UK Free Trade Agreement (FTA).
   - **About India-UK trade pact:** India-UK FTA negotiations were launched on 13th January 2022. India and UK are on advance talks on three proposed pacts between both the countries:
     - An FTA, a Bilateral Investment Treaty (BIT) and a social security agreement termed as the Double Contribution Convention Agreement (DCAA).
     - UK remains unwilling to grant any concession under its Carbon Border Adjustment Mechanism (CBAM), which seeks to impose duties on carbon-intensive imports.
     - The draft UK CBAM legislation states that the levy will apply to imported goods from January 1, 2027.
   - **About Carbon Border Adjustment Mechanism(CBAM)**: A policy by the European Union (EU) that puts a carbon price on imports from countries with weaker climate rules, to promote fair competition and cut global emissions.
     - The carbon tax, first introduced by the EU, has also met with strong resistance in India.

- **Goal:** Supports the EU's CBAM and the target of net-zero emissions by 2050.
- **Sectors Covered:** Cement, steel, aluminium, fertilisers, electricity, and hydrogen – all high carbon-emitting industries.
- **How it works:** Importers must buy CBAM certificates that match the carbon emissions of their goods.
- The price equals the EU's own carbon cost under the Emissions Trading System (ETS).If the exporting country already has a carbon tax, it will be adjusted to avoid double taxation.

3. One Day One Genome : Recently, the Department of Biotechnology (DBT) released detailed graphical summaries, infographics, and data on over 100 bacterial genomes as part of its 'One Day One Genome' initiative.

- **About One Day One Genome Initiative**: Aims to make microbial genomic data accessible and engaging for a wide audience, from schoolchildren to researchers.
  - Features a fully annotated bacterial genome each day with graphical summaries, infographics, and genome data on the DBT website.
  - **Microbial Diversity**: Showcasing India's unique species and their roles in the environment, agriculture, and human health.**Examples**:
    - ✓ Methylophaga lonarensis from Lonar Lake, producing ectoine for skincare.
    - ✓ Lactiplantibacillus plantarum ILSF15, a probiotic strain with health benefits.
  - **Public Engagement**: Uses social media to increase awareness and educate the public.
- **Objectives**:
  - **Highlight Microbial Diversity**: Emphasize the critical roles of India's microbial species.
  - **Publicly Accessible Data**: Provide genome data and supporting materials freely to researchers and the public.
  - **Uncover Microbial Potential**: Inspire innovation in microbial genomics.
  - **Support Diverse Fields**: Aid research in environmental management, agriculture, and human health.

4. Piprahwa Stupa: Recently, the Ministry of Culture requested the immediate withdrawal of Buddhist relics from Sotheby's upcoming Hong Kong auction and urged the auction house to cooperate in returning them to India.

- **About Piprahwa Stupa**: Located near the India-Nepal border, believed to be the burial site of a portion of Buddha's ashes given to the Sakya clan.
- **Discovery**: Excavated in 1898 by William Claxton Peppé.
- **Significance**: Houses sacred relics, including bone fragments, soapstone and crystal caskets, a sandstone coffer, and gold ornaments and gemstones.
- **Brahmi Inscription**: Confirms the relics as those of the Buddha, deposited by the Sakya clan.
- **Relics Transfer**: Moved to the Indian Museum in Kolkata in 1899.
- **Legal Status**: Classified as 'AA' antiquities under Indian law, making their sale or removal illegal.
- **Historical Importance**: The stupa is an essential Buddhist archaeological and spiritual site, directly tied to the legacy of Lord Buddha.

5. Triple Test To Ensure OBC Quotas In Local Bodies : Recently, Jharkhand completed the first phase of data collection on the OBC population in urban areas.

- This effort aims to determine quotas for OBCs in urban local bodies, in line with the Supreme Court's "triple test" guideline.

- **About Triple Test:** The "triple test" refers to a set of three steps established by the **Supreme Court of India** to guide the process of determining OBC quotas in local bodies:
  - **Setting up a dedicated commission** to conduct a thorough empirical inquiry into the backwardness of communities in local bodies.
  - **Determining the proportion of reservation** required in urban local bodies, based on the findings of the commission, ensuring that quotas do not exceed an overbroad range.
  - **Ensuring that the total reservation for SCs, STs, and OBCs** combined does not exceed 50% of the total seats, as per constitutional guidelines.

6. Asian Development Bank (ADB): Recently, during the 58th Annual Meeting of the ADB Board of Governors, the ADB President expressed the Bank's full support for India's development priorities and the vision of Viksit Bharat 2047.

- **About ADB :** Founded on December 19, 1966, ADB is a multilateral development bank focused on supporting social and economic development in the Asia-Pacific region. It aims to foster a prosperous, inclusive, resilient, and sustainable Asia while combating extreme poverty.

- **Functions:** ADB provides grants, loans, technical assistance, and equity investments to developing countries, the private sector, and public-private partnerships. It enhances development impact through policy dialogues, advisory services, and cofinancing operations with official, commercial, and export credit sources.
- **Headquarters:** Manila, Philippines.
- **Membership:** ADB has 68 members, including 49 from Asia and the Pacific and 19 from other regions. Membership is open to UN members, regional countries, and developed nations.
- **Governance:** Governed by a Board of Governors, ADB operates with a weighted voting system based on capital subscriptions. Major shareholders include Japan, the US, China, India, and Australia.
- **Funding:** ADB raises capital via international bonds and relies on member contributions, loan repayments, and retained earnings.

7. Aerial Delivery Research and Development Establishment (ADRDE): Recently, India made significant progress in its ambitious Gaganyaan human spaceflight programme, with the first set of parachutes for the uncrewed mission (G-1).

- The parachutes were developed by the Aerial Delivery Research and Development Establishment (ADRDE), a laboratory in Agra under the Defence Research and Development Organisation (DRDO).

- **About ADRDE:** A research and development laboratory under the Defence Research and Development Organisation (DRDO).
  - Specializes in developing various parachute systems, including:
    - ✓ Paratrooper, aircrew, ammunition, brake, and recovery parachutes.
    - ✓ Heavy drop systems, inflatable systems, airship technologies, and aircraft arrester barrier systems.
  - Currently working on: Armament delivery parachutes , Balloon barrage and surveillance systems ,Airships and related applications and Space recovery parachutes.

8. Microgravity: Researchers at the Indian Institute of Space Science and Technology (IIST) have developed a groundbreaking 3D computational model that reveals how microgravity consistently increases the human core body temperature, a key factor for long-duration space missions.

- **About Microgravity:** The condition of apparent weightlessness in space, where objects are in free-fall orbit around Earth.
  - Gravity is still present at orbital altitudes (~250 miles), but it’s 89% as strong as on Earth's surface.
  - Weightlessness occurs due to continuous free-fall, not the absence of gravity.
- **Effects on Human Physiology:** Microgravity affects bones, muscles, blood circulation, metabolism, and thermoregulation.
  - Thermoregulation, the body's ability to maintain a stable core temperature, becomes crucial in space.
- **IIST's Thermoregulation Model:**
  - IIST developed a 3D model to simulate heat distribution in the body under microgravity.
  - The model factors in sweating, shivering, clothing effects, organ heat, and blood flow redistribution.
- **Key Findings:** Hands and feet cool down, while the head, abdomen, and core warm up.
  - Body temperature rises faster during exercise in space.
  - Core temperature can increase from 36.3°C to 37.8°C in 2.5 months in microgravity.
  - With exercise, temperature may rise to near 40°C, a dangerous level.
  - Model predictions were validated with data from the Mir and ISS.
  - The model calculates the Universal Thermal Climate Index (UTCI), considering wind, humidity, and solar radiation.