

## Current Affairs - 18 February 2025

### AGRICULTURAL AND PROCESSED FOOD PRODUCTS EXPORT DEVELOPMENT AUTHORITY (APEDA)



• APEDA was established by the Government of India under the Agricultural and Processed Food Products Export Development Authority Act passed by the Parliament in 1985.

- The Authority replaced the Processed Food Export Promotion Council (PFEPCC).
- It works under the **Ministry of Commerce and Industry**.
- **Objective: To develop and promote the export of scheduled products.**
- The products specified under the APEDA ACT are called **scheduled products**, and exporters of such scheduled products are **required to register under APEDA**.
- It **provides financial assistance, information, and guidelines** for the development of scheduled products.
- **Headquarters: New Delhi**
- **Functions:**
  - **Setting the standards** and specifications for the scheduled products.
  - **Registration of exporters** of the scheduled products on payment of required fees.
  - **Improving packaging and marketing** of the Scheduled products.
  - Carrying out an **inspection** of products to ensure the quality of such products.
  - **Training** in various aspects of the industries connected with the scheduled products.
  - **Development of industries** relating to the scheduled products and undertaking surveys, feasibility studies, etc
  - **Collection of statistics** from the owners of factories or establishments and publication of such statistics.
- Examples of scheduled products: Fruits, Vegetable, Meat, Poultry Products, Dairy Products, Confectionery, Biscuits, Bakery Products, Honey, Jaggery, etc.



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### SOVEREIGN GREEN BONDS (SGBS)



- SGBs are debt securities issued by a national government to fund projects that have positive environmental benefits.
- The proceeds from these bonds are exclusively allocated to green initiatives, which can include renewable energy projects, sustainable agriculture, waste management, and more.
- Essentially, these bonds are a way for governments to raise capital while promoting environmental sustainability.

#### **Sovereign Green Bonds in India:**

- The Union Budget 2022-23 announced the issue of **SGBs**. The framework for the **SGBs** was issued by the government on November 9, 2022.
- **What does the framework entail?**
  - The government's framework is **based on the International Capital Market Association's (ICMA) listed principles** for issuing green bonds, which has four components:
    - Use of proceeds, project evaluation and selection, management of proceeds, and reporting.
  - The government said the bonds' proceeds will be used for green projects that:
    - Encourage energy efficiency
    - Reduce carbon emissions and greenhouse gases
    - Promote climate resilience and/or adaptation
    - Improve natural ecosystems and biodiversity, especially in accordance with the principles of sustainable development goals



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- The framework listed **investments in solar, wind, biomass, and hydro energy projects**, and **urban mass transportation projects** such as metro rail, green buildings, pollution prevention and control projects.
- The government **excluded projects** such as **fossil fuels, nuclear power generation, and direct waste incineration.**
- The eligible expenditure is limited to government spending that occurred not more than 12 months prior to issuance.
- The **proceeds should be allocated to projects within 24 months** of issuing the bonds.
- If an eligible green project is postponed or cancelled, it will be replaced by another eligible green project.

### How will green projects be evaluated and reported?

- The Ministry of Finance has constituted a **Green Finance Working Committee** composed of relevant ministries and chaired by the chief economic adviser.
- The ministries will submit their projects to the committee, which will meet at least twice a year to evaluate the proposals.
- Once the projects are evaluated, the final list will be given to the budget division of the finance ministry.
- The division will then **issue the bonds through the RBI** and use the proceeds to finance the selected projects.
- The government will release an **annual report on the selection of green projects**, the funds deployed, and their impact on the greening of the economy.
- It will also maintain a **Green Register** with details of the green bond issuance, the proceeds generated, allocations made, and information about the eligible projects.



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### OVOID CELLS



Researchers have discovered a new type of neuron that plays a fundamental role in recognition memory and named “ovoid cells.”

- These cells are named for the **distinct egg-like shape** of their cell bodies, are present in relatively small numbers within the hippocampus of humans, mice, and other animals.
- These are **highly specialized neurons** which get activated each time when we encounter something new.
- It triggers a process that stores those objects in memory and allows us to recognize them months, potentially even years later.
- They are quite distinct from other neurons at a cellular and functional level, and in terms of their neural circuitry.
- **Significance:** This discovery provides key insights into how memories form and could aid in the **treatment of brain conditions** related to object recognition, such as **Alzheimer's disease, Autism Spectrum Disorder and epilepsy.**

### What are Neurons?

- Also known as a nerve cell, it is a **specialized cell in the nervous system** that is responsible for transmitting information through electrical and chemical signals.
- Neurons are the basic building blocks of the nervous system and play a crucial role in processing and transmitting information within the body.

### NAKSHA PROGRAMME



- The **National Geospatial Knowledge-based Land Survey of Urban Habitations (NAKSHA)** programme aims to **create and update**



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**land records in urban areas** to ensure accurate and reliable documentation of land ownership.

- This initiative will **empower citizens**, improve ease of living, enhance urban planning, and reduce land-related disputes.
  - This IT-based system for property record administration will foster **transparency, efficiency** and support sustainable development.
  - The **Survey of India** is the **technical partner for NAKSHA programme**, which is responsible for conducting aerial surveys and providing orthorectified imagery, through third party vendors, to State and Union Territory governments.
  - The end-to-end web-GIS platform will be developed by the Madhya Pradesh State Electronic Development Corporation (MPSEDC) and **storage facilities** will be provided by the **National Informatics Centre Services Inc. (NICSI)**.
  - States and Union Territory governments are scheduled to conduct field surveys and ground truthing using the orthorectified imagery, ultimately leading to the final publication of urban and semi-urban land records.
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### PROJECT WATERWORTH



- It stretches over **50,000 km long cable** which connects India, US, Brazil, South Africa and other “key regions”.
- Its cable will reach depths of up to **7,000 meters** in deep waters.
- The **project is using AI** to enhance subsea cable infrastructure to improve global connectivity.
- It focuses on enhancing cable deployment and maintenance, ensuring reliable and efficient internet access worldwide.
- It uses **enhanced burial techniques** in high-risk fault areas, such as shallow waters near the coast, to avoid damage from ship anchors and other hazards.

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### What will Project Waterworth do?

- Project Waterworth, by leveraging advanced **machine learning models**, aims to predict and **mitigate potential disruptions**, enhancing the resilience of subsea networks.
  - The initiative will bring industry-leading connectivity to the US, India, Brazil, South Africa, and other key regions.
  - This will facilitate greater **economic cooperation**, **digital inclusion**, and open opportunities for technological development in these regions.
  - It would provide "**industry-leading connectivity**" to five major continents and help support its AI projects.
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### EXERCISE DHARMA GUARDIAN



- It is a **joint military exercise** between **India and Japan**.
  - It is an **annual exercise** and conducted alternatively in India and Japan.
  - It aims to **enhance interoperability** between the two forces while undertaking joint **urban warfare and counter-terrorism** operations under UN mandate.
  - **2025 Exercise:**
    - It will focus on a high degree of physical fitness, **joint planning and joint tactical drills**.
    - Drills to be rehearsed during the exercise include **advanced special forces skills** and various other tactics, techniques and procedures as per the current operational paradigm.
    - It will culminate with a 48-hour-long validation to rehearse the tactical drills for counterterrorism **operations in desert and semi-desert terrain**.
    - In addition to tactical manoeuvres, it will foster **stronger cultural and professional ties** between the participating contingents.
  - **Significance:** The exercise will enable the two **sides to share their best practices** in tactics, techniques and procedures of conducting tactical operations.
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### DELHI EARTHQUAKE: CAUSES, IMPACT, AND SEISMIC RISK

A 4.0 magnitude earthquake struck the national capital on 17<sup>th</sup> February morning, with the epicentre being located near Durgabai Deshmukh College of Special Education in Dhaula Kuan.

#### **Introduction:**

- Delhi is located in a seismically active region, making it susceptible to earthquakes.
- Although most tremors felt in the city originate from far-off places like Afghanistan or the Himalayan region, the recent earthquake originated **within Delhi itself**.
- The event has sparked discussions about the city's seismic risk, geological features, and the possibility of stronger earthquakes in the future.

#### **Seismic Activity in Delhi:**

- Delhi falls under **Zone 4** of India's **earthquake hazard map**, meaning it is in the second-highest category of risk.
- This classification is based on the **MSK scale (Medvedev-Sponheuer-Karnik scale)**, which measures earthquake intensity. **Zone 4 areas can experience MSK-8 intensity**, making them vulnerable to structural damage.
- In the last five years, Delhi and its surrounding regions have recorded multiple **small earthquakes (magnitude 2-3)**, mostly unnoticed by residents but detected by seismometers.
- Such low-magnitude tremors are common, but stronger quakes are rare in the region.

#### **Understanding the Aravalli-Delhi Fold Belt:**

- Delhi is part of the **Aravalli-Delhi Fold Belt**, a geological structure that extends from **southern and eastern Rajasthan to Haryana and Delhi**.
- This region has undergone **significant geological changes over millions of years**, leading to folded rock formations.
- These geological stresses can sometimes trigger mild earthquakes.

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### Sound During the Earthquake:

- Many Delhi residents reported hearing a **peculiar sound** during the earthquake.
  - While **earthquakes do produce sound**, it is often at frequencies **beyond human hearing**.
  - However, in some cases, **large earthquakes can create audible sounds** due to vibrations.
  - These sounds are often mistaken for the earthquake itself but are usually caused by the **shaking of buildings, objects, or underground structures**.
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### RENEWED INDIA-US NUCLEAR COOPERATION

The renewed US-India nuclear cooperation signals a diplomatic win for India amid challenging trade discussions with the new US administration.

### Upgrading Reactor Specialisation

- The new nuclear deal provides India with an opportunity to modernize its reactor technology, aligning with globally prevalent designs and accelerating capacity expansion.
- **Advancing in Small Modular Reactors (SMRs)**
  - India aims to leverage private sector expertise to enter the growing SMR segment.
  - While India has experience with 220MWe PHWRs, its reliance on heavy water and natural uranium makes it outdated compared to the dominant pressurised water reactors (PWRs) which use light water.
- **Exploring Global Collaborations**
  - India's Department of Atomic Energy is in discussions with Holtec International, a major nuclear technology exporter, to explore potential SMR collaborations.
- **Strategic Joint Push in SMRs**
  - India and the US are collaborating on SMRs to compete with China, which is emerging as a leader in this field. SMRs are critical tool for both countries to expand their influence in Global South.



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### Other Benefits

- **Overcoming Technological and Economic Challenges**
    - India's technological limitations and the US's high labor costs make it challenging to compete with China independently.
    - The partnership opens up India's nuclear sector, potentially ending the country's technology isolation and boosting its role in the global nuclear market.
  - **Holtec International's Role and Investments**
    - Holtec International plans to expand its operations in India, including establishing a nuclear technology campus in Pune and a specialty manufacturing plant.
    - The company anticipates significant foreign investment in India's nuclear sector, driving economic growth.
  - **Reviving Nuclear Cooperation**
    - The 123 agreement between India and the US, signed in 2007, aimed to foster full civil nuclear energy cooperation but faced obstacles due to legislative challenges.
    - India's efforts to amend laws could break this deadlock, leading to joint manufacturing and SMR projects.
  - **SMRs: The Future of Nuclear Energy**
    - SMRs (30MWe to 300MWe) are gaining prominence as a sustainable and commercially viable option in the energy sector.
    - Holtec's SMR-300, supported by the US Department of Energy, is in early design stages, with potential deployments in the UK and Canada.
    - Other Western competitors include Rolls-Royce, NuScale, Westinghouse, and GE-Hitachi.
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