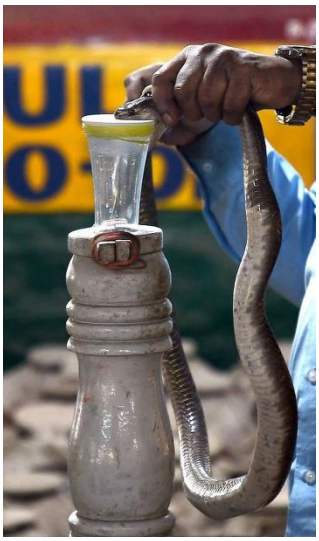
Current Affairs - 22 January 2025

NATIONAL MINERAL DEVELOPMENT CORPORATION (NMDC)

- Incorporated in 1958 as a **Government of India fully owned public enterprise**, NMDC is under the **administrative control of the Ministry of Steel,** Government of India.
- The company was categorised as "**NAVRATNA" Public Sector Enterprise** in 2008.
- It is engaged in the **exploration of a range of minerals**, **including iron ore**, **copper**, rock phosphate, **limestone,** dolomite, gypsum, bentonite, magnesite, **diamond**, tin, tungsten, **graphite**, and **beach sands**.
- It is **India's single largest iron ore producer**, presently producing over 45 million tonnes of iron ore from its **fully mechanized mines in Bailadila Sector in Chhattisgarh** and **Donimalai in Bellary-Hospet region in Karnataka.**
    - It is considered to be one of the **low-cost producers of iron ore** in the world.
    - The company sells most of their high-grade iron ore production to the Indian domestic steel market, primarily pursuant to long-term sales contracts.
- It also **operates the only mechanized diamond mine in India at Panna, Madhya Pradesh**.
- All of the NMDC mining complexes have been rated 5 Star by the Indian Bureau of Mines, Ministry of Mines.
- The **registered office** is located in the city of **Hyderabad**, Telangana.

ANTIVENOM

- Antivenoms are life-saving medicines used to **treat snakebites.**
- They work by specifically **binding to the venom toxins** to render them ineffective, allowing the body's natural defence systems to clear them safely over time.



- **How lethal is Snake venom?**
  - **Haemotoxins destroy blood cells** and disrupt clotting. **Neurotoxins** block nerve signals and paralyse. **Cytotoxins dissolve tissues** at the bite site. The effects are often fatal without medical intervention.
- **Productions of Antivenoms:**
  - French physician **Albert Calmette in** the 1890s developed the first antivenom using horses, a practice that continues today.
  - To produce antivenom, healthy and **mature venomous snakes** are first captured from the wild by trained experts who then extract the venom from them.
  - Next, they immunise horses with increasing doses of venom over many weeks, allowing their immune systems to produce antibodies.
  - Over time, the horses develop a robust immune response, producing antibodies that neutralise venom toxins. These **antibodies are antivenoms.**
  - The experts extract these antibodies from the horse's blood and purify and formulate them as **antivenoms**.

Issues in India:

- India is the world's largest producer and consumer of antivenoms in the world.
- **Administration issue: Improper administration** and inadequate facilities exacerbate the crisis. **Logistical issues**, unequal access to care, **superstitious beliefs, and cultural practices** often delay proper treatment in many parts.
- **Lack of Infrastructure:** Antivenoms often need to be transported in cold storage, however, India's rural parts lack the supporting infrastructure and power supply.
- The high cost of manufacturing antivenom limits accessibility for the economically-disadvantaged.

INDUS WATERS TREATY, 1960 — DECISION BY THE NEUTRAL EXPERT ON HIS COMPETENCE

Background of the Dispute

- The dispute between India and Pakistan centers on the Kishenganga and Ratle hydroelectric projects.
    - **Kishenganga Project:** On the Kishenganga River, a tributary of Jhelum.
    - **Ratle Project:** On the Chenab River.
- India advocates resolution through a neutral expert, as outlined in the Indus Waters Treaty (IWT) of 1960, while Pakistan supports the involvement of the Permanent Court of Arbitration (CoA) in The Hague.
    - Pakistan raised objections to these projects, initially seeking the appointment of a Neutral Expert in 2015.
    - However, in 2016, Pakistan unilaterally withdrew this request and sought adjudication by a Court of Arbitration, violating the dispute resolution mechanism outlined in Article IX of the treaty.
        - Pakistan bypassed the sequence mentioned in dispute redressal mechanism under IWT and sought arbitration directly in 2016.
    - India then requested the matter to be referred to a Neutral Expert.
- **Parallel Mechanisms and Legal Challenges**
    - Pakistan's move for a CoA led to the World Bank facilitating both a Neutral Expert and a CoA in 2022.
    - India has refused to participate in the CoA, calling it "illegally constituted" and contrary to treaty provisions.
- **Engagement on Treaty Review**
    - India and Pakistan are also in contact under Article XII (3) of the IWT for the review and potential modification of the treaty.

- India issued formal notices to Pakistan for review (August 30, 2024) and modification (January 2023) of the treaty.
  - Pakistan has not formally responded despite four letters from India.

Neutral Expert's Decision

- The World Bank-appointed neutral expert, Michel Lino, ruled in favor of India's stance, affirming his competence under Paragraph 7 of Annexure F of the IWT to resolve the differences.
- **India's Response**
  - India welcomed the decision.
    - Earlier, India had dismissed the legitimacy of the Court of Arbitration, calling it illegally constituted and reaffirmed that the treaty does not allow parallel proceedings on the same issues.
  - The Ministry of External Affairs stated that the ruling upholds India's consistent position that the neutral expert is the appropriate authority to address the seven issues concerning the two projects.
- **Next Steps**
  - The neutral expert will now proceed to evaluate the merits of each of the seven differences, culminating in a final decision.

THE U.S. WITHDRAWAL FROM WHO: IMPLICATIONS FOR GLOBAL HEALTH

On his first day in office, President Donald Trump signed an executive order withdrawing the U.S. from the World Health Organization (WHO).

Key Reasons for the Withdrawal:

- **Mishandling of the COVID-19 Pandemic:**
  - Trump criticized WHO's delayed response to the pandemic and its handling of China's accountability in the initial stages of the outbreak.
- **Perceived Political Bias:**

- The administration accused WHO of being overly influenced by certain member states, including China.

- **Financial Burden:**
  - The U.S. contributes the highest assessed membership dues, ranging between $100 to $122 million annually, and nearly $1.3 billion in voluntary funding in 2022-2023.
  - Trump labelled this burden "unfair" when compared to China's significantly lower contributions.

Immediate Actions Outlined in the Executive Order:

- **Halt in U.S. Funding**: Immediate cessation of all financial transfers to WHO.
- **Personnel Withdrawal**: Recall of U.S. government employees working with WHO.
- **Development of Alternatives**: Identification of credible domestic and international partners to replace WHO's functions.
- **Pandemic Treaty Exit**: Discontinuation of negotiations on the WHO's pandemic treaty, a framework aimed at improving global pandemic responses.

Implications of the Withdrawal:

- **Financial Strain on WHO:**
  - The U.S. contributes nearly 20% of WHO's funding. Losing this would severely impact the organization's ability to support health programs, including vaccine development, eradication of diseases like polio, and pandemic preparedness.
- **Program Disruptions in Developing Nations:**
  - WHO aids various global health programs, including India's immunization and disease surveillance efforts. Reduced funding could hinder these initiatives, particularly in low-resource countries.
- **Loss of Expertise:**
  - The withdrawal would sever collaboration between WHO and U.S. institutions like the CDC, which are instrumental in global health surveillance and response.

PRALAY MISSILE

- It is an **indigenously developed short-range, quasi-ballistic surface-to-surface missile.**
- It has been developed by the **Defence Research and Development Organisation (DRDO)** based on the Prithvi Defence Vehicle from the Indian Ballistic Missile Programme.
- It has been developed for deployment along the Line of Actual Control (LAC) and Line of Control (LoC).

Features:

- It is powered by a **solid-propellant rocket motor**.
- The missile has a **range of 150-500 km** and can be launched from a mobile launcher.
- It has a payload capacity of 500-1,000 kg.
- The missile is capable of carrying **conventional warheads.**
- It is equipped with guidance systems that provide a Circular Error Probable (CEP) of less than 10 meters.
- The missile reaches terminal speeds of Mach 6.1 and can engage targets such as radar installations, command centers, and airstrips.
- It has the ability to change its path after covering a certain range mid-air.

WHAT IS DIAMOND IMPREST AUTHORISATION (DIA) SCHEME?

- It has been introduced by the **Department of Commerce**, Government of India to **allow duty-free import of natural cut and**

polished diamonds, of less than ¼ Carat (25 Cents), for export purposes.

- The Scheme will be implemented with effect from 01.04.2025.

  Key Features of the Scheme:

  - This scheme mandates export **obligation with value addition of 10%.**
  - All diamond exporters holding **Two Star Export House status** and above **and having US $15 million exports per year** are eligible for availing the benefit under this scheme.
- The scheme has been made **in response to the beneficiation policies undertaken in** a number of **natural diamond mining countries** like Botswana, Namibia, Angola, etc, where diamond manufacturers are obliged to open cut and polishing facilities for a minimum percentage of value addition.
- **Support for MSME Exporters**: Designed to create a level playing field for MSMEs, the scheme enables smaller exporters to compete effectively with larger industry players.
- It is aimed towards retaining India's position as a global leader in the entire **value chain** of the diamond industry.

RATNAGIRI BUDDHIST SITE

Archaeological Survey of India (ASI) has discovered significant Buddhist remains during renewed excavations at the historic Ratnagiri site in Jajpur district adding another chapter to its 1,200-year-old legacy.

- It is located 100 km northeast of Bhubaneswar, Odisha.
- The site stands on a **hill between Birupa and Brahmani rivers** and is Odisha's most famous and most excavated Buddhist site.
- It is part of the famous **Diamond Triangle** of Odisha along with Udaygiri and Lalitgiri, translated as the **'Hills of Jewels'**

- **Time Period:** Experts date Ratnagiri to the **5th and 13th Century**, although the peak period of construction is dated between the 7th and 10th centuries.
- It was a center for **Mahayana and Tantrayana** (also known as Vajrayana) Buddhism.
- There are some studies that suggest that the renowned Chinese **Buddhist monk and traveller, Hiuen Tsang** visited here during 638-639 AD.
- So far ASI have unearthed a **colossal Buddha head, a massive palm, an ancient wall and inscribed Buddhist relics**, all of which are estimated to date back 8th and 9th Century AD.

Buddhism in Odisha and links with Southeast Asian countries:

- Mauryan Emperor **Ashoka** is believed to have invaded **Kalinga** in 261 BC but, deeply moved by the bloodshed in the war, he eventually embraced Buddhism.
- In Odisha, Buddhism is stated to have particularly flourished under the **Bhaumakara dynasty**, which ruled parts of the State in **between the 8th and 10th Century.**
- Odisha has long enjoyed **maritime and trade links** with Southeast Asian countries. According to historians, pepper, cinnamon, cardamom, silk, camphor, gold, and jewellery were popular items of trade between the ancient kingdom of **Kalinga and Southeast Asia.**
- The State also annually holds **Baliyatra, literally 'voyage to Bali'** – a seven-day festival to commemorate the 2,000-year-old maritime and cultural links between Kalinga and Bali and other South and Southeast Asian regions such as Java, Sumatra, Borneo, Burma (Myanmar) and Ceylon (Sri Lanka).

OYSTER

- Oysters are **marine animals** belonging to the **phylum Mollusca,** found in **brackish habitats.**
- They are very **irregular in shape** and the valves of some are highly calcified.

Characteristics:

- These marine animals can filter up to 1.3 gallons of water per hour.
- They are animals with **eyes all over their body**. These eyes help them escape their predators.
- These creatures are known to hide in their **shell upon sensing danger**. The shells then close tightly to protect them.
- These animals do **not have a central nervous system**. Therefore, they cannot feel pain like humans.
- They are animals that **eat algae** and other food particles that are usually drawn to their gills.
- They are known to reproduce through **broadcast spawning in warm waters** and are also **capable of changing their gender**.

Key points about the finding:

- Oysters are exposed to high concentrations of diverse microorganisms in their natural marine environment. Because of this, they have **evolved strong immune defences.**
  - For example, they rely **heavily on antimicrobial proteins** and strings of molecules known as **peptides in their hemolymph** (blood) to protect them from infection.
- The study showed that the antimicrobial proteins isolated from the **oyster hemolymph** (the equivalent of blood) can kill certain bacteria responsible for a range of infections.
- The proteins can also **improve the efficacy of conventional antibiotics** against problematic bacteria species.