Today's Prelims Topics

Weather Derivatives

Context

The National Commodity and Derivatives Exchange (NCDEX) has collaborated with the India Meteorological Department (IMD) to introduce India's first weather derivatives.

What is Meant by Weather Derivatives?

- They are financial contracts that help businesses hedge against the risk of weather-related losses (e.g., too much/little rain, temperature extremes).
- The payoff depends on measurable weather outcomes, not actual physical damages.
- Settlement is based on indices recorded by agreed sources such as IMD or certified weather stations.
- **Example:** A contract pays out Rs 5,000 for every millimeter of rainfall below 100 mm in June in a particular city. If the actual rainfall is 90 mm, the payout is (100-90) x 5,000 = Rs 50,000.
- **Common Indices Used**:
    - **Heating Degree Days (HDD):** Measures how much (and for how long) outside temperature falls below a base temperature (often 18°C). Used for winter heating needs.
    - **Cooling Degree Days (CDD):** Measures how much the temperature rises above a base level (often 18°C). Used for summer cooling demand.
    - **Total Rainfall:** Cumulative rainfall measured in millimeters over a specific period and location.
    - **Other Indices:** Can include total snowfall, average wind speed, etc.

Insurance Product vs Derivative

- **Insurance:**
    - Covers specific, verifiable asset-based losses (e.g., flood damage).
    - Pays only after actual damage assessment and claim verification.
- **Derivative:**
    - Suited for non-catastrophic, recurring risks (e.g., low rainfall).
    - Pays out based on predefined weather indices, regardless of actual loss to property.

Significance and Prerequisites of a Robust Weather Derivatives Market

- A well-developed weather derivatives market can **improve the credit quality of banks and NBFCs** by reducing defaults linked to weather fluctuations.
- It provides real-time, market-driven insights to policymakers, **enabling government policy to reflect how stakeholders assess and price weather risks**.
- Such a market **enhances India's climate resilience**, shifting the approach from reactive disaster relief to proactive, risk-sharing mechanisms.
- The demand for reliable, granular weather data (e.g., farm-level sensors) and advanced predictive tools (like climate models) will increase, creating new investment opportunities in agritech, weather forecasting, and energy analytics.
- For this system to succeed, agencies like IMD and private weather providers must deliver frequent, region-specific, and trustworthy datasets.
- Additionally, financial institutions, insurers, and agritech companies must develop bundled and accessible products to connect individual users with the broader weather derivatives market.

Source: Financial Express

Enemy Property Act

Context

The **Madhya Pradesh High Court** has directed **Saif Ali Khan** to file an appeal before the appellate authority challenging the Central Government's order.

What is Enemy Property?

- Properties left behind by individuals or their heirs who:
  - Fought wars against India, **or**
  - Acquired **citizenship of enemy nations** (like Pakistan or China).
- These include **both movable and immovable assets** (land, buildings, shares, businesses).
- Such properties are taken over by the Indian government and classified as **"enemy property."**

Background of Enemy Properties in India

- The concept originated after the:
  - **Indo-Pak Wars (1965 & 1971)**
  - **Indo-China War (1962)**
- Citizens who migrated to Pakistan or China left behind properties in India.
- These were seized under the **Defence of India Act, 1962** and **Defence of India Rules**.
- A **Custodian of Enemy Property** is appointed by the government to **manage, control, and dispose of** these assets.

Enemy Property Act, 1968

- Passed to legally **vest enemy properties permanently** with the **Custodian of Enemy Property**.
- Key provisions:
  - Enemy properties **cannot be transferred or inherited**.
  - Only the Custodian has the authority to **manage, lease, or dispose** of them.

Enemy Property (Amendment and Validation) Act, 2017

- Major updates:
  - **Inheritance rights abolished**—no person (even Indian citizens) can claim enemy property.
  - Legal ownership and transfer to **any other party** is **strictly prohibited**.
  - Closed all **loopholes for civil claims or inheritance disputes**.

Process for Disposal of Enemy Property (2018 Guidelines)

- Government laid out procedures for **sale, valuation, and auction**:
  - **Valuation Committees** led by **District Magistrates** assess properties.
  - If occupied, the occupant may buy the property at a set price.
  - **Movable assets** (like shares) sold through public auctions or tenders.

Key Statistics on Enemy Property

- **9,280** enemy properties left behind by **Pakistani nationals**.
- **126** enemy properties left behind by **Chinese nationals**.
- Over **9,400** properties under government custody.
- Estimated total value: **over ₹1 lakh crore**.
- **Auction proceeds** go to the **Consolidated Fund of India**.

Source: IndianExpress

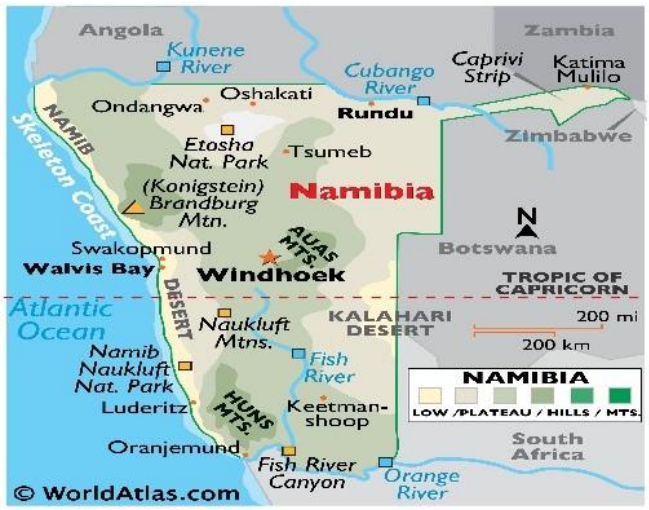
Namibia

Context

The Prime Minister visited Namibia, marking the **first visit by an Indian PM in 27 years**, to sign key agreements—such as the **introduction of UPI**—and to enhance India's partnership with the Global South.

Geographical Overview of Namibia

- **Location:** Situated in **southwestern Africa**, Namibia has access to the **Atlantic Ocean**, making it a strategic gateway to inland African nations.
- **Capital: Windhoek**
- **Neighboring Countries:** Shares borders with **Angola**, **Zambia**, **Botswana**, and **South Africa**; western boundary opens to the **Atlantic Ocean**.



Namibia's Significance for India

1. Strategic & Geopolitical Importance

- **Gateway to Southern Africa:** Namibia's location offers India access to landlocked African nations via the Atlantic coast.
- **Strengthening Global South Ties:** Aligns with India's focus on South-South cooperation and Africa outreach.
- **Countering Chinese Influence:** Partnership helps balance China's growing footprint in African infrastructure and mining sectors.

2. Energy & Mineral Resources

- **Uranium Supply:** Namibia is a major exporter of uranium—critical for India's civil nuclear program.
- **Diamonds & Rare Minerals:** Potential source of strategic minerals needed for electronics and green tech.
- **Energy Cooperation:** Opportunities in green hydrogen, solar, and offshore energy.

3. Economic & Trade Potential

- **UPI Expansion:** India's digital public infrastructure like UPI being introduced—boosts fintech diplomacy.
- **Pharma & Healthcare:** Namibia needs affordable medicines and healthcare services—India is a key partner.
- **Investment & Skill Development:** Scope for Indian investment in mining, agriculture, IT, and vocational training.

4. Defense & Maritime Collaboration

- **Indian Ocean Security:** Collaboration possible in maritime domain awareness and naval diplomacy.
- **Defense Training & Equipment:** Scope for defense exports and military training programs.

5. People-to-People & Diplomatic Relations

- **First PM Visit in 27 Years:** Signals renewed focus on Africa, especially southern region.

- **Educational Ties:** Namibian students often study in Indian universities under scholarships and ITEC program.
- **Cultural Bonds:** Growing Indian diaspora and cultural exchanges foster goodwill.

Source: IndianExpress

Admiralty (Jurisdiction and Settlement of Maritime Claims) Act, 2017

Context

The Kerala High Court has ordered the conditional arrest of the Liberian container vessel **MSC Akiteta II**, currently docked at **Vizhinjam port**, in response to an **admiralty suit** filed by the **Kerala government**.

Background of the Case

- The **Kerala government filed an admiralty suit** after the **sinking of MSC Elsa III** on **May 25 near Alappuzha**.
- The vessel reportedly carried **600+ containers** with **hazardous materials** such as **plastic pellets and diesel**.
- The spill caused **serious environmental and economic damage** to Kerala's marine ecosystem.
- In response, the **Kerala High Court conditionally arrested MSC Akiteta II**, docked at **Vizhinjam Port**, to secure a compensation claim.
- Kerala alleged **MSC Elsa III** and **MSC Akiteta II** are **"sister ships"** owned by **Mediterranean Shipping Company (MSC)**.
- Though registered under **different shell companies**, both operate from the **same Geneva address**.
- State claims this structure was a **fraudulent device to evade liability**.

Admiralty (Jurisdiction and Settlement of Maritime Claims) Act, 2017

- **Purpose:** Governs **maritime disputes** including:
  - Ship damage
  - Ownership issues
  - Seafarer wage disputes
  - Environmental damage
  - Loss of life/injuries at sea
- **Replaced** colonial-era laws:
  - Admiralty Court Act, 1861
  - Colonial Courts of Admiralty Act, 1890

Jurisdiction Expansion under 2017 Act

- Earlier: Jurisdiction restricted to Bombay, Calcutta, and Madras High Courts.
- Now: Extended to High Courts of:
  - **Kerala**
  - **Karnataka**
  - **Odisha**
  - **Telangana**
  - **Andhra Pradesh**
- Jurisdiction covers **12 nautical miles** from the coast, including **seabed, subsoil, and airspace**.

Environmental Damage Provisions

- **Section 4**: Allows maritime claims for **environmental damage** and cleanup costs.
- **Additional Laws Supporting Claims**:
  - **Merchant Shipping Act, 1958**: Holds shipowners liable for **oil spills**.
  - **Environment Protection Act, 1986**: Empowers action against **polluters**.
  - **NGT (National Green Tribunal)**: Handles environmental compensation claims.
    - Example: In 2016, NGT ordered ₹100 crore compensation after **M V Rak** oil spill near Mumbai.

Legal Grounds & Court's Justification

- Under **Section 5 of the Admiralty Act**, the **High Court has power to arrest ships** even under **demise charter (bareboat charter)**.
- A **demise charterer** temporarily assumes full control of a vessel (crew, operations, maintenance), acting as **"owner for the time being."**
- The court accepted Kerala's claims and ordered the ship's arrest until:
    - The owners deposit the claimed amount, **or**
    - Furnish **adequate security**.

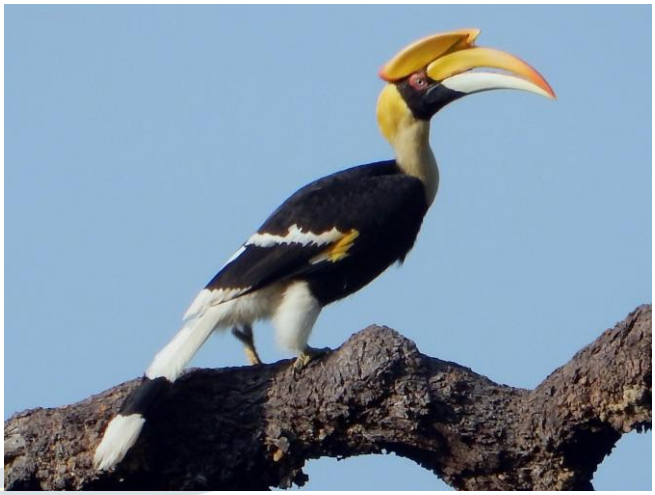
Source: IndianExpress

Great Hornbill

Context

Great Hornbill (Malamuzhakki Vezhambal), Kerala's state bird, was spotted in the **coastal area of Kakkampara near Ezhimala in Kannur**, far from its usual forest habitats.

About Great Hornbill (Buceros bicornis)



- **Distribution**
  - Found in the **Indian subcontinent** and **Southeast Asia**.
  - In India, seen in **Western Ghats** and **forests along the Himalayas**.
- **Habitat**
  - Inhabits **wet evergreen** and **deciduous old-growth forests**.
  - Found at elevations between **600–2000 meters**.
  - Prefers **tall trees** that rise above the forest canopy for nesting.
- **Physical Features**
  - Size: **95 to 120 cm** in length; wingspan: **151 to 178 cm**.
  - Weight: Around **3 kg**.
  - Coloration:
    - Black body, head, and wings.
    - White neck, abdomen, and tail (tail has a black band).
    - Bright **yellow to red hues** due to oil secreted by preen gland.
  - Notable traits:
    - Large **hollow casque** atop the bill, used for combat and courtship.
    - Prominent **eyelashes**.
    - **Sexual dimorphism**:
      - Males have **red irises** and larger bills/casques.
      - Females have **white irises**.
- **Diet**
  - **Primarily frugivorous** (fruit-eating).
  - Opportunistically eats **small mammals, reptiles, and birds**.
- **Conservation Status**
  - **IUCN Red List: Vulnerable**.

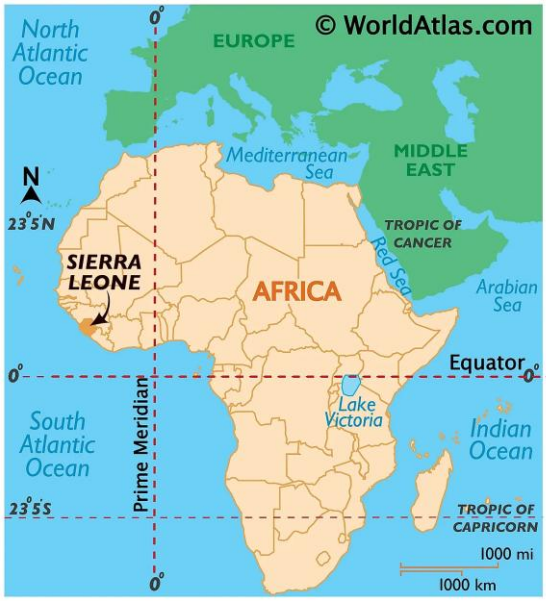
Source: TheHindu

Sierra Leone

Context

Sierra Leone's Nyangai Island has lost two-thirds of its land to rising sea levels, forcing residents into overcrowded conditions and making it one of the country's first cases of climate displacement.

About Sierra Leone



- **Location:** Tropical country in **West Africa**, along the **Atlantic Ocean**.
- **Borders: Guinea** (north & east), **Liberia** (south), **Atlantic Ocean** (west).
- **Geography:** Lightly wooded hills inland; **mangrove swamps** along the coast.
- **Major Rivers: Rokel**, **Taia**, **Moa**, and **Sewa** rivers.
- **History:**
    - Colonized in **1787** by formerly enslaved people from **England**, later from **Nova Scotia** and **Jamaica**.
    - Became a **British crown colony** in 1808; gained **independence in 1961**.
- **People & Language:**
    - **Population:** Around **7.5 million**.
    - **Ethnic Groups:** 16 major groups, each with unique language and attire.
    - **Languages: English** (official), **Krio** (widely spoken).
- **Government:**
    - **System:** Constitutional republic with a **directly elected president** and **unicameral legislature**.
    - **Capital: Freetown**, known for one of the world's largest **natural harbours**.
- **Economy:**
    - Dominated by **subsistence agriculture**.
    - Rich in minerals like **diamonds**, **gold**, **bauxite**, and **rutile (titanium dioxide)**.

Source: TheHindu

News in Short

Vitamin D Deficiency

➔ **News?** Vitamin D deficiency has reached epidemic proportions in India, due to changing improper work-life balance.

➔ **Significance of Vit-D:**
- Supports **calcium absorption** for healthy bones and teeth.
- Strengthens immune system.
- **Improves muscle function** and reduces fall risk.
- **Lowers inflammation** and risk of autoimmune diseases.
- Benefits **heart health**.
- Helps regulate mood and cognitive functions.

➔ **Deficiency Leads to:**
- **Rickets:** Soft, weak bones and deformities in children.
- **Osteomalacia:** Bone pain and muscle weakness in adults due to soft bones.
- **Osteoporosis:** Increased risk of bone fractures in older adults.

Climate Change Can Increase Volcano Eruption

➔ **News?** According to a recent study, melting glaciers due to global warming can result in increased volcanic eruptions.

➔ **How Climate Change is Responsible for Volcanic Eruptions:**
- **Melting of Glaciers:**
  - **Reduced Pressure:** Melting glaciers reduce the weight pressing down on underground magma chambers.
  - **Expansion of Magma & Gases:** Less pressure allows magma and gases to expand, making eruptions more likely.
  - **Lower Melting Point:** Reduced pressure causes rocks to melt at lower temperatures, increasing magma production.
  - **Historical Evidence:** In places like Iceland and Chile, deglaciation periods saw a sharp rise in volcanic eruptions.
- **Increased Precipitation:**
  - **Water Infiltration:** Higher rainfall (due to climate change) seeps deep into the ground.
  - **Triggering Eruptions:** Water interacts with underground magma, increasing the risk of eruptions.
  - **Altered Patterns:** Climate change can intensify precipitation patterns, leading to unpredictable volcanic activity.

Jaa Mata Exercise

➔ **News?** Japanese Coast Guard ship (JCGS) ***Itsukushima*** arrives at Chennai for the Jaa Mata exercise.
- It is a bilateral exercise between **Japan & Indian** Coast Guards.

Editorial Summary

What will be the effect of rising military spending?

Context

The North Atlantic Treaty Organization (NATO) summit in June pledged to increase military spending to **5% of the member nations' GDP** (specifically "core defence requirements as well as defence and security-related spending by 2035").

Historical Trajectory of Military Expenditures

- **Cold War Era (1947-1991):**
  - Military spending peaked, reaching **6.1% of global GDP in 1960**.
  - Driven by arms race between the US and USSR.
  - In the final Cold War year (1991), military spending was **3% of global GDP**.
- **Post-Cold War Decline (1991–1998):**
  - Significant reduction in global tensions led to a steady fall in spending.
  - **Lowest point in 1998: 2.1% of global GDP**, around $1,100 billion.
- **Gradual Increase (2000s-2010s):**
  - Resurgence due to regional conflicts, terrorism, and new security challenges.
  - By **2015, it was 2.3% of global GDP**.
- **Recent Surge (2020s):**
  - Major conflicts (Russia-Ukraine, Israel-Gaza, India-Pakistan, Israel-Iran) triggered rapid increases.
  - **2024: 2.5% of GDP ($2,718 billion), up 9.4% in one year—the sharpest rise since 1988.**

Top 5 Military Spending Countries (2024)

1. **United States:** $997 billion, 3.4% of U.S. GDP.
2. **China:** $314 billion, about 1.7% of GDP.
3. **Russia:** $149 billion, at 7.1% of its GDP.
4. **Germany:** $88.5 billion, ~1.9% of GDP.
5. **India:** $86.1 billion, around 2.3% of GDP

Biggest Spenders as Share of GDP (excluding active war zones)

1. **Saudi Arabia:** 7.3%
2. **Poland:** 4.2%
3. **United States:** 3.4%

Effects of Increased Military Spending

- **Crowding Out of Social & Developmental Expenditure:** Diverts resources from health, education, poverty reduction, and climate mitigation.
  - UN's annual budget ($44 billion) is dwarfed by military spending ($2.7 trillion).
- **Setback to UN and Global Peace Initiatives:** Cuts in foreign aid (e.g., closure of USAID) weaken development, humanitarian, and peacekeeping programs.
- **Undermining Progress on Sustainable Development Goals (SDGs):** Reduced funds slow efforts to end poverty, improve health services, and achieve universal healthcare.
  - **Example:** USAID's withdrawal may result in 14 million additional deaths by 2030.
- **Impact on Climate Change:** Increased defence activity raises greenhouse gas emissions (e.g., a 3.5% NATO GDP target = 200 million extra tonnes annually).
  - Funds diverted from climate mitigation, despite rising climate emergencies.

- **Resource Misallocation:** Scarce public funds are allocated to weapons and military rather than addressing basic needs and public welfare.
    - In 12 days, the U.S. spent $1 billion on missile interceptors (comparable to one-sixth of the UN's half-year receipts).
- **Global Inequality:** Military spending is concentrated in a few countries, exacerbating inequalities in global security and development.
- **Threat to Long-Term Human Well-being:** Peace is not just the absence of war, but requires investment in life-sustaining conditions; increased military budgets undermine this holistic peace.

How is India Affected by Increased Military Spending?

- **Budgetary Trade-offs:** Higher defence allocations reduce fiscal space for essential sectors like health, education, and welfare.
    - Example: In 2023-24, India allocated ₹6.81 lakh crore to defence, while Ayushman Bharat health insurance received only ₹7,200 crore.
- **Low Public Health Spending:** Despite rising defence spending (2.3% of GDP), public health spending remains low (1.84% of GDP), far below both the national target (2.5%) and developed country averages (~10%).
- **Strain from Emergency Expenditure:** Operations like "Operation Sindoor" led to emergency allocations (₹50,000 crore), straining the overall budget further.

Source: The Hindu

UNFCCC Process Must Be Reformed

Context

The international climate negotiations, held under the UN Framework Convention on Climate Change (UNFCCC), have been facing a credibility crisis in recent years.

Why UNFCCC Commitments Have Failed

- **Lack of Accountability:** Developed countries have repeatedly missed emission reduction and climate finance targets without facing meaningful consequences, undermining the credibility of commitments.
- **Consensus Deadlock:** The consensus-based decision-making process allows every country a de facto veto, making it easy for a small group (or even one country) to block ambitious action or dilute outcomes.
- **Weak Enforcement Mechanisms:** Despite 30+ years of negotiations, **binding commitments** and **compliance mechanisms** have repeatedly failed or been abandoned.
- **Marginalization of Vulnerable Voices:** Small and vulnerable developing countries feel their urgent concerns (adaptation, loss and damage) are not adequately addressed; climate justice remains rhetorical.
- **Influence of Fossil Fuel Interests:** High involvement of fossil fuel lobbyists and selection of host countries with fossil fuel-dependent economies (e.g., Dubai, Baku) has raised questions about conflicts of interest.
- **Withdrawal of Key Players:** The repeated withdrawal or backtracking of major countries (e.g., the US under Trump) disrupts global efforts and signals lack of seriousness.

Why There Is a Need to Change the Process

- **Growing Climate Crisis:** The scale and urgency of the climate emergency demand faster and more ambitious action, which the current process is not delivering.
    - **E.g.,** Extreme weather is intensifying and 2024 was the warmest year on record
- **Erosion of Trust:** Disappointed by slow progress and broken promises, developing and vulnerable countries are losing faith in the UNFCCC's ability to deliver climate justice.
- **Inefficient Negotiations:** Negotiations are bogged down by lengthy, overlapping agendas and procedural delays, resulting in diluted, lowest-common-denominator outcomes.
- **Inadequate Finance Flows:** Funding from developed to developing countries falls far short of what is needed, impeding real climate action on the ground.
    - **E.g.,** The **Loss and Damage Fund**, launched in 2024, has received only **$321 million** of the **$768 million pledged**, with major emitters like China and India absent from contributions.
- **Lack of Inclusivity:** Smaller delegations and civil society groups struggle to participate meaningfully due to resource and process barriers.

What Needs to Be Done

- **Reform Decision-Making:** Consider majority-based voting when consensus cannot be reached, to prevent paralysis and allow progress on critical issues.
    - Streamline agenda items to focus on core priorities and reduce procedural clutter.
- **Enhance Accountability:** Institute mechanisms for monitoring, reporting, and penalizing non-compliance with commitments (especially finance and emissions).
- **Limit Fossil Fuel Influence:** Reduce the participation of fossil fuel lobbyists and polluting industries in negotiations to prevent conflicts of interest.
- **Increase Climate Finance:** Urge developed countries to significantly scale up climate finance, reflecting the actual needs of developing countries (beyond the $100 billion/year target).

- **Broaden Engagement:** A 2025 report by IEEFA emphasized the need for a **Just Transition financing ecosystem** that includes **workers, communities, and civil society**, noting current gaps in funding for social priorities
- **Innovate Multilateral Mechanisms:** Develop new, complementary institutions or coalitions (e.g., climate finance clubs, technology sharing groups) to drive implementation of COP decisions.

Source: Indian Express