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Daily News Analysis

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1. REDD+ Programme

- Prelims - REDD+ Programme
- Mains - GS 3 - Environment

Why in the news?

- According to a study, only a small number of tropical forests carbon offset projects have achieved significant cuts in deforestation, with just 19% meeting their reported targets.

REDD+ Programme

- **What is it?:** REDD+ stands for Reducing Emissions from Deforestation and Forest Degradation, with the “+” signifying the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks.
- **Origin:**
 - Originated at COP-11 (Montreal, 2005) under the UNFCCC.
 - REDD (2005) – Focus on reducing deforestation and degradation.
 - REDD+ (2007, Bali Action Plan, COP-13) – Expanded to include forest conservation, sustainable management, and carbon stock enhancement.
- **Aim:** Aims to create financial value for carbon stored in forests by offering incentives for developing countries to reduce emissions from forested lands.
- **Objectives:**
 - Reducing deforestation and forest degradation.
 - Conserving existing forests.
 - Promoting sustainable forest management.
 - Enhancing forest carbon stocks.
- **Key Components:**
 - **Measurement, Reporting and Verification (MRV):** Ensures transparency and accountability in emission reduction claims.
 - **Safeguards:** Protects biodiversity, rights of indigenous communities, and ensures equitable benefit sharing.
 - **National Strategies/Action Plans:** Countries develop policies and frameworks to implement REDD+ activities.



→ **Reference Emission Levels (REs):** Benchmarks to measure progress in emission reduction.

- **India's Participation:**

→ India launched its National REDD+ Strategy (2018) with objectives of

- ★ Encourage community-based forest management.
- ★ Integrate forest carbon accounting into national inventory.
- ★ Mobilize financial resources through carbon credits and results-based payments.

- **Significance of REDD+:**

- Helps achieve India's Nationally Determined Contributions (NDCs) under the Paris Agreement.
- Supports carbon neutrality, biodiversity protection, and sustainable rural livelihoods.
- Strengthens India's commitment to LiFE (Lifestyle for Environment) and Viksit Bharat @2047 sustainability goals.
- REDD+ contributes to the UN Sustainable Development Goals (SDGs)- especially SDG 13 (Climate Action) and SDG 15 (Life on Land).

- **Challenges:**

- Inadequate financing and lack of market access for carbon credits.
- Complex measurement and verification processes.
- Conflicts over land tenure and benefit-sharing with local communities.
- Need for capacity building and clear legal frameworks.



2. State of Finance for Forests (SFF) - 2025

- **Prelims** - State of Finance for Forests (SFF) - 2025
- **Mains** - GS 3 - Environment

Why in the news?

- The first State of Finance for Forests (SFF) report was recently released by the United Nations Environment Programme (UNEP).

State of Finance for Forests (SFF) - 2025

- **Institutions:** United Nations Environment Programme (UNEP), UN-REDD, and the United Nations Forum on Forests (UNFF).
- **Objectives:**
 - Provides the first global analysis of public and private financial flows to forests, using data for 2023, and projections through 2030 and 2050.
 - Aims to track progress toward the Rio Conventions (UNFCCC, CBD, UNCCD) through forest finance.
- **Findings of the Report:**
 - **Current Investment (2023)**
 - ★ Total forest finance: USD 84 billion.
 - ★ Public finance: USD 77 billion (91 %).
 - ★ Private finance: USD 7.5 billion (9 %).
 - ★ Indicates heavy reliance on public funds.
 - **Required Investment:** To meet climate, biodiversity & land-restoration goals:
 - ★ USD 300 billion / year by 2030 ($\approx 3\times$ current level).
 - ★ USD 498 billion / year by 2050 ($\approx 6\times$ current level).
 - **Financing Gaps & Inequities:**
 - ★ Only 17 % ($\approx$ USD 12.9 billion) of domestic public spending reached 31 tropical forest countries.
 - ★ Indigenous Peoples & Local Communities (IPLCs) received $< 1\%$ (USD 362 million) of international forest finance.
 - ★ Environmentally harmful subsidies: $\approx$ USD 406 billion (mainly agriculture).



★ Private credit to deforestation-risk firms: ≈ USD 8.9 trillion, dwarfing green investments.

- **India's Role:**

- Recognised as a leader in domestic public investment for NbS.
- Integrates forestry + climate + land-restoration goals through:
 - ★ National REDD+ Strategy (2018).
 - ★ Green India Mission and CAMPA Funds.
 - ★ National Afforestation and Eco-Restoration programmes.
- Demonstrates a whole-of-government approach linking finance and sustainable livelihoods.

- **Significance:**

- Serves as a baseline for global forest-finance monitoring.
- Will inform UNFF-21 (2026) deliberations.
- Emphasises that tripling investment by 2030 is vital to harness forests' potential for:
 - ★ Climate mitigation,
 - ★ Biodiversity conservation,
 - ★ Sustainable development & livelihoods.



3. Food and Agriculture Organization

- Prelims - Food and Agriculture Organization
- Mains - GS 2 - International Relations

Why in the news?

- India and the Food and Agriculture Organization (FAO) of the United Nations commemorated 80 years of partnership.

Food and Agriculture Organization

- **What is it?:**
 - The Food and Agriculture Organization (FAO) is a specialized agency of the United Nations founded in 1945 with headquarters in Rome, Italy.
 - Its primary mission is to achieve global food security, ensuring that all people have regular access to high-quality, nutritious food for a healthy life.
- **Key Functions:**
 - **Data and Knowledge:** Collects and disseminates global agricultural statistics and information through platforms like FAOSTAT and the FAO Data Lab.
 - **Standard Setting:** Develops international standards for food safety, quality, and agricultural trade (e.g., Codex Alimentarius with WHO).
 - **Technical Assistance:** Provides expert support and training to countries via country-level projects.
 - **Policy Coordination:** Assists governments in formulating agricultural, food, and nutrition policies.
 - **Emergency Response:** Supports nations in responding to food crises, conflicts, and climate shocks.
- **Funding of FAO:**
 - **Assessed Contributions:** Paid by member states (based on economic capacity).
 - **Voluntary Contributions:** From member states, organizations, and partners for specific projects.
- **Major Publications:**
 - The State of Food Security and Nutrition in the World (SOFI) – Tracks global progress on hunger and nutrition.



- The State of Food and Agriculture (SOFA) – Provides analysis of agricultural and rural trends.
- OECD–FAO Agricultural Outlook (2025–2034) – Offers 10-year projections for agricultural markets and policies.
- **FAO and India:**
 - India is a founding member of FAO (joined 1945).
 - In 2025, FAO and India celebrated 80 years of partnership, reaffirming collaboration on World Food Day around the theme, “Hand in Hand for Better Foods and a Better Future”.
 - Key projects:
 - ★ ENACT Course (2024–2025) – Nutrition education programme promoting nutrition-sensitive agriculture and curricula integration in Indian institutions.
 - ★ Animal Health Systems Project – Technical cooperation for zoonotic disease management.
 - FAO supports India in nutrition-sensitive agriculture, improving farmer livelihoods, and sustainable resource use.



4. PUNCH Space Mission and Solar Wind

- **Prelims** - PUNCH Space Mission and Solar Wind
- **Mains** - GS 3 - Science and Technology

Why in the news?

- The PUNCH mission has captured the image of the solar wind, according to the Principal Investigator of the Mission.

PUNCH Space Mission

- **What is it?:**
 - PUNCH stands for Polarimeter to Unify the Corona and Heliosphere.
 - It is a NASA solar mission designed to study the Sun's corona and the solar wind as an interconnected system.
- **Launch:** Launched by NASA in SpaceX Falcon 9 rocket from California
- **Mission Duration:** Approximately 2 years
- **Orbit:** Low Earth Orbit (LEO)
- **Key Features:**
 - **Constellation:** Four identical, suitcase-sized microsatellites
 - **Imaging technique:** Uses polarimetry- measuring the polarisation of light scattered by particles, allowing 3D mapping of the Sun's outer layers.
 - **Data frequency:** Captures polarised images every 4 minutes, and unpolarised images every 8 minutes.
 - **Operation:** The four satellites work together as a single virtual instrument generating a continuous, large-scale visualisation of solar activity.
- **Significance:**
 - Provides new insights into solar wind structure and evolution.
 - Improves prediction accuracy of space weather events such as CMEs and solar flares.
 - Enhances protection of communication systems, satellites, and power grids from solar storms.
 - Offers a more comprehensive understanding of the heliosphere, the region influenced by solar activity.



Solar Wind

- What is it?:

- The solar wind is a continuous stream of charged particles- mainly electrons, protons, and alpha particles (helium nuclei)- ejected from the Sun's outer atmosphere, the corona.
- These particles flow through the entire solar system at speeds of 250–800 km/s, carrying the Sun's magnetic field with them, forming what is known as the heliosphere- a vast magnetic bubble that envelopes our Solar System.

- Origin:

- Originates from the solar corona, a region with temperatures exceeding 1 million °C.
- The particles gain enough energy to overcome the Sun's gravitational pull and stream outward.
- Major source regions:
 - ★ Coronal holes: Regions with open magnetic field lines (sources of *fast solar wind*).
 - ★ Streamer belt near the solar equator (source of *slow solar wind*).

- Composition:

- Main constituents: Protons (H^+), electrons, and alpha particles (He^{2+}).
- Trace elements: Heavy ions such as carbon, nitrogen, oxygen, magnesium, silicon, sulfur, and iron.
- The number density near Earth is around 10 protons per cubic centimeter.

- Effects:

- On Earth:

- ★ Interacts with Earth's magnetosphere, producing auroras near the poles.
- ★ During strong solar activity, it can cause geomagnetic storms, which may disrupt satellite operations, communication systems, and power grids (e.g., 1989 Quebec blackout).

- In Space:

- ★ Shapes the heliosphere and influences planetary atmospheres.
- ★ Creates comet tails that always point away from the Sun due to solar wind pressure.



5. India -Middle East-Europe Corridor (IMEC)

- **Prelims** - India-Middle East-Europe Corridor (IMEC)
- **Mains** - GS 2 - International Relations

Why in the news?

- The Egyptian President raised concern over progress of IMEC based on Palestine issues and invited India to join the Suez Canal Economic Zone.

India-Middle East-Europe Corridor (IMEC)

- **What is it?:**
 - IMEC is a transcontinental project to enhance connectivity and trade routes from India to Europe via the Middle East.
 - Announced during the G20 Summit in New Delhi in 2023.
- **Objectives:**
 - Reduction in transit time by 40% and costs by 30% (though actual benefits might vary).
 - Creation of a seamless trade route connecting India, the Middle East, and Europe, which is anticipated to reshape international maritime trade.
- **Current Progress:**
 - The eastern part of IMEC, linking India and the UAE, is progressing well, facilitated by strong economic ties.
 - Bilateral trade between India and UAE has grown significantly, supported by the 2022 Comprehensive Economic Partnership Agreement (CEPA), and now includes non-oil trade diversification.
 - The Virtual Trade Corridor between India and UAE has been launched to streamline trade processes, lowering logistics costs and administrative burdens.
- **Challenges:**
 - The western segment faces uncertainty due to the Israel-Palestine conflict, which has disrupted regional cooperation, especially with stakeholders like Saudi Arabia and Jordan.
 - Implementation in the western corridor may be delayed until regional stability improves, affecting overall IMEC timelines.



- **Future Prospects:**

- For now, only the connectivity aspect is moving forward, while other components like energy grid linkages and clean energy technology cooperation are on hold.
- India and other eastern stakeholders should use this period to enhance internal logistics, port readiness, and capacity-building .

- **India's Role:**

- **Infrastructure Development:** Upgrading Indian ports, creating economic zones, and digitizing logistics for improved efficiency.
- **Integration into Global Value Chains:** Enhancing manufacturing competitiveness to position India as a global supply chain alternative.
- **Institutional Support:** Establishing an IMEC Secretariat for streamlined management and governance, which could encourage neighboring countries to join the initiative.



6. Gulf of Kutch and Dugong

- **Prelims** - Gulf of Kutch and Dugong
- **Mains** - GS 3 - Environment

Why in the news?

- According to a recent report, the long-term survival of dugongs in the Gulf of Kutch and the Andaman and Nicobar Islands is highly uncertain or challenging.

Gulf of Kutch

- **Location:** Inlet of the Arabian Sea located along the west coast of India, in the Jamnagar district of Gujarat.
- **Geographical Setting:** Lies between the Kutch region (north) and the Kathiawar Peninsula (south).
- **Extent:** About 99 miles (≈ 160 km) long, occupying 7,300 sq km.
- **Islands:** Around 32 islands, surrounded by coral reefs- notable ones include Pirotan, Narara, Kalubhar, and Paga.
- **Currents & Tides:** Exhibits one of the highest tidal ranges in India.
- **Topography:** Rimmed with mudflats, with many small islands emerging from shallow waters.
- **Protected Regions:** Gulf of Kutch Marine National Park located on the southern shore- India's first Marine National Park (established 1980).

Dugong

- **What is it?:** Dugong (*Dugong dugon*) also called 'Sea Cow' is one of the four surviving species in the Order Sirenia and it is the only existing species of herbivorous mammal that lives exclusively in the sea including in India.
- **Distribution and Habitat:** They are found in over 30 countries and in India are seen in the Gulf of Mannar, Gulf of Kutch, Palk Bay, and the Andaman and Nicobar Islands.
- **Conservation Status:**
 - IUCN Red List status: Vulnerable
 - Wild (Life) Protection Act, 1972: Schedule I
 - CITES: Appendix I
- **Threats:**
 - Habitat degradation (especially of seagrass beds)
 - Boat strikes
 - Entanglement in fishing nets



- Pollution (oil spills, plastics)
- Climate change and rising sea levels
- Illegal hunting (though now rare in India)
- **Conservation Efforts:**
 - **India's Effort:**
 - ★ Dugong Conservation Reserve: India's first in Gulf of Mannar, Tamil Nadu (2022)
 - ★ Integrated Coastal Zone Management (ICZM)
 - ★ Recovery Programme for Dugongs under National Biodiversity Action Plan (NBAP)
 - ★ Community participation through awareness and eco-development programs
 - **International Efforts:** Part of UNEP's Dugong Conservation Programme