DAILY CURRENT AFFAIRS 25-02-2026

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Vaan Island

Syllabus: Prelims Bits - Mapping

Context:

- A **decade-long artificial reef restoration project** at **Vaan Island** has generated **₹61.67 crore in socio-ecological benefits**, which is **over twice the inflation-adjusted project cost**.
- The project was implemented by the **Tamil Nadu Coastal Restoration Mission** with research partners.
- **10,600 artificial reef modules** deployed since **2015** helped:
    - Arrest erosion, Restore coral habitats and Improve fisheries and ecosystem services

About Vaan Island

- One of the **21 islands of the Gulf of Mannar** and part of the **Tuticorin group of islands**.
- The Gulf of Mannar region was declared a **Marine Biodiversity Park (1986)** and later a Biosphere Reserve.
- The island experienced **extreme geomorphic shrinkage (92%)**:
    - **1969:** ~20 ha to **2015:** ~1.53 ha
- **Major causes of degradation**
    - Coral mining, Reef destruction, Sea-level rise, Coastal erosion
- **Post-restoration impact**
    - Island expanded to **~2.3 ha**
    - Artificial modules enabled **rapid coral colonisation (≈81 colonies/module)**

Key Facts — Gulf of Mannar

- A **shallow inlet of the Indian Ocean** between **southeast India and Sri Lanka**.
- Bounded by **Rameswaram Island**, **Adam's Bridge (Rama Setu)**, and **Mannar Island**.
- Approx. **160 km long** and **130–275 km wide**.
- Receives rivers such as **Tambraparni (India)** and **Aruvi (Sri Lanka)**.
- Ecologically significant for:
    - Coral reefs, Seagrass meadows, Pearl oyster banks, Sacred chank fisheries
- **Tuticorin (Thoothukudi) port** lies along the Indian coast.

Kole Wetlands

Syllabus: GS-3: Ecosystem - Wetlands

Context:

A **recent scientific study** at the **Kole Wetlands** has documented **12 species of pygmy grasshoppers**, indicating the wetland's **high micro-habitat diversity and ecological health**.

The finding strengthens the importance of Kole wetlands as a **biodiversity hotspot beyond avifauna**, highlighting insect diversity in wetland ecosystems.

Location & Extent

- Situated in **central Kerala** across **Thrissur and Malappuram districts**.
- A **low-lying floodplain wetland**, periodically submerged during the monsoon.

Agricultural Significance

- Known for **~300 years of paddy cultivation** using traditional water-management practices.
- Name derived from Malayalam word **"Kole" meaning bumper crop**.
- Farming carried out by **draining floodwater and constructing bunds**.

Ecological Characteristics

- Naturally experiences **saltwater ingress**.
- Mosaic landscape with **paddy fields, plantations, gardens, and human habitation**.
- One of the **largest and most productive wetlands in Kerala**, yet ecologically threatened.

Biodiversity Importance

- Lies along the **Central Asian Flyway** of migratory birds.
- Recognised as an **Important Bird Area (IBA)** by BirdLife International.
- Among India's major bird habitats (after **Chilika Lake** and **Nalsarovar/Amipur Tank region** in terms of bird congregation).

International Status

- Declared a **Ramsar Site (2002)** due to its ecological and agricultural importance.

Pygmy Grasshoppers — Key Features

- Belong to **order Orthoptera**; about **1,400 species worldwide**.
- Small insects (~15 mm), usually **brown/grey/moss-green**.
- **Forewings reduced or absent**, unlike true grasshoppers.
- Lay **eggs singly in soil grooves** (distinct reproductive behaviour).
- Common in **short grass fields and muddy wetland edges**.
- Often **dimorphic** (short-winged and long-winged forms).
- Lack **sound-producing and hearing organs**.

Apple Cultivation

Syllabus: GS-3: Indian Agriculture – Horticulture Crops

Context:

- **J&K Economic Survey 2025–26:** Apple production constitutes **~50% of total horticulture output** in **Jammu and Kashmir**, highlighting its economic dominance and livelihood significance.

Basic Overview

- **Botanical name:***Malus pumila*
- **Nature:** Temperate fruit crop with high commercial value
- **Uses:** Fresh consumption, processing (juice, cider, jam), export earnings

Agro-Climatic Requirements

Temperature

- Optimum summer temperature: **21–24°C**
- Requires **chilling hours** (≈1000–1500 hrs below 7°C) for proper flowering and fruit set.

Altitude

- Suitable altitude: **1500–2700 m above mean sea level**

Rainfall

- Ideal rainfall: **1000–1250 mm**, well distributed
- Excess moisture during flowering → disease & fruit drop

Soil

- Best suited: **well-drained loamy soils**
- Ideal pH: **5.5–6.5**

Major Apple-Producing Regions in India

- **Primary belt**
    - Jammu and Kashmir (largest producer)
    - Himachal Pradesh
    - Hill regions of Uttarakhand and Uttar Pradesh
- **Emerging / minor areas**
    - Arunachal Pradesh, Nagaland, Punjab, Sikkim

Economic & Strategic Importance

- Backbone of **hill economy and employment**
- High **value-to-weight ratio** → export potential
- Supports **allied sectors:** cold storage, packaging, transport, processing
- Important for **crop diversification in mountainous regions**

Key Issues in Apple Cultivation

- **Climate change:** Declining chilling hours shifting cultivation to higher altitudes
- **Fragmented landholdings**
- **Post-harvest losses & inadequate cold chain**
- **Import competition** from cheaper apples (USA, Iran, Turkey)
- **Pest & disease pressure** (scab, codling moth)

Government Initiatives

- High Density Plantation Scheme (J&K)
- Mission for Integrated Development of Horticulture (MIDH)
- Cold chain & CA storage promotion
- Subsidy for improved varieties & rootstocks

India's Energy Shift Through the Green Ammonia Route

Syllabus: GS-3: Indian Energy Sector.

Context:

- At **India Energy Week (IEW) 2026**, investment opportunities worth **~$500 billion** were announced in the energy sector.
- The focus reflects a transition from **energy security → energy independence**.
- The success of this transition depends on **affordable clean fuels**, especially **green hydrogen and green ammonia**.
- Due to **ease of storage, transport, and scalability**, **green ammonia** is emerging as a **core pillar of India's decarbonisation strategy** and a potential influencer of **global clean-fuel trade**.

Understanding Green Ammonia

What is Green Ammonia?

- Green ammonia is produced by combining:
  - **Nitrogen (from air)** and
  - **Green hydrogen** generated via electrolysis using renewable energy.
- It is **near carbon-free**, unlike **grey ammonia**, which relies on fossil fuels (natural gas).

Thus, green ammonia aligns with **net-zero commitments and industrial decarbonisation**.

Importance and Applications

Why Green Ammonia Matters

- **Hydrogen limitations**:
  - Difficult storage
  - High transport cost
  - Safety challenges
- **Green ammonia advantages**:
  - Easily liquefied
  - Compatible with existing storage and shipping infrastructure
  - Acts as a **hydrogen carrier fuel**

Major Applications

- **Fertiliser production** (largest immediate demand)
- Marine fuel for decarbonising shipping
- Power generation and co-firing
- Industrial heat and feedstock

Its **multi-sector usability** enables **large-scale energy transition**.

Creating a Market: Role of Procurement Mechanisms

- Energy transition requires **demand assurance and investor confidence**.
- Governments globally have introduced **aggregated procurement mechanisms**:
  - EU – **H2Global Programme**
  - South Korea – **Clean Hydrogen Portfolio Standard**
  - India – **SIGHT Programme** under the **National Green Hydrogen Mission**

Significance

- Reduces **demand uncertainty**
- Provides **revenue visibility**
- Encourages **private sector investment**
- Facilitates **price discovery**

India's Green Ammonia Auction Model

SECI Tender (2024)

- Issued by **Solar Energy Corporation of India (SECI)**.
- Procurement target: **724,000 tonnes/year** of green ammonia.
- Intended supply to **13 fertiliser plants**.
- Features:
  - 10-year offtake agreements
  - Production subsidies
  - Risk-sharing framework

Created strong **bankability and investment certainty**.

Participation and Outcomes

- **15 companies participated**
- **7 firms secured 13 contracts**
- One bidder received **~370,000 tonnes/year allocation**
- Tender revisions improved:
  - Payment security
  - Risk allocation
  - Pricing transparency

Economic Viability and Price Competitiveness

Price Discovery

- Auction price: **₹49.75–₹64.74/kg** (~$572–$744/tonne)
- Grey ammonia price: **~$515/tonne**
- Subsidies + long-term contracts significantly **narrowed the cost gap**.

Global Significance

- Prices were **40–50% lower than some global benchmarks**.

- Demonstrates **commercial feasibility of green fuels**.
- Strengthens India's **export competitiveness**.

Logistics, Infrastructure, and Strategic Benefits

Transportation Advantages

- Delivery points located near **coastal fertiliser plants**.
- Enables **efficient maritime transport and lower logistics costs**.

Economic & Strategic Gains

- Could replace **~30% of ammonia imports**.
- Reduces vulnerability to:
  - Natural gas price volatility
  - Exchange-rate fluctuations
  - Geopolitical supply disruptions

Enhances **energy sovereignty and macroeconomic stability**.

India's Global Leadership Potential

India possesses multiple structural advantages:

- **Low renewable energy costs**
- Large domestic **fertiliser demand base**
- Effective **auction and contract design**
- Targeted incentives under the **National Green Hydrogen Mission**

Many energy-importing countries may depend on imports, positioning India as:

- A **major exporter of green ammonia**
- A **rule-shaper in emerging clean-fuel markets**
- A driver of **new South-South energy trade networks**

Challenges and Policy Requirements

Developer-Level Challenges

- Integration of **hybrid renewable energy + storage**
- Technical due diligence and project execution risks
- Long-term operational reliability and monitoring

Policy-Level Requirements

- Stable regulatory environment
- Reliable **grid connectivity**
- Clear **energy banking provisions**
- Strong **safety regulations**
- Internationally accepted **certification standards**

Financial Needs

- Blended finance models
- Long-term offtake contracts
- Risk-mitigation instruments to improve **project bankability**

Conclusion

- India's green ammonia strategy demonstrates that **economic growth and climate action can be mutually reinforcing**.
- Policy support, assured demand, and infrastructure planning are making **clean fuels commercially viable**.
- With regulatory stability and financial innovation, green ammonia can:
  - Accelerate **energy independence**
  - Strengthen industrial decarbonisation
  - Establish India as a **global clean-fuel leader**

Prahaar- Counter Terror Policy

Syllabus: GS-3: Internal Security – Counter Terrorism Policy.

Context:

- The Union Government has launched **"Prahaar"**, India's **first comprehensive counter-terrorism policy**.
- It adopts a **zero-tolerance, intelligence-driven and coordinated approach** to counter extremist violence and dismantle terror ecosystems.

Overview of Prahaar

- A **national counter-terror doctrine** integrating **prevention, response, investigation and rehabilitation**.
- Focuses not only on terrorists but also on **financiers, facilitators, recruiters and safe-haven providers**.

- Seeks to **cut access to funding, weapons, cyber tools and logistics**, both domestically and internationally.

Significance:

- Addresses the **fragmented approach** to counter-terrorism.
- Aligns India's policy with **global best practices** in intelligence-based security management.

Core Objectives

- **Criminalisation of all terrorist acts** with stronger legal backing.
- Disruption of terror financing and logistics networks.
- **Strengthening coordination** between central and state agencies.
- Development of **uniform structures and SOPs** for counter-terror operations.

Guiding Principles

- **Zero Tolerance:** No political, ideological or religious justification for terrorism.
- **Victim-Centric Approach:** Emphasis on justice, rehabilitation and compensation.
- **No Religious Attribution:** Terrorism viewed as a security threat, not identity-linked.
- **Concern over State Sponsorship:** Recognition of cross-border and proxy terrorism.

Seven Pillars of Prahaar

Prevention

- Intelligence-led proactive action to stop attacks before execution.
- Disruption of **overground worker networks, sleeper cells and cyber radicalisation**.

Responses

- **Swift, proportionate and graded response mechanisms**.
- Standardised anti-terror frameworks across **Union, State and district levels**.

Aggregating Internal Capacities

- **Whole-of-government approach**.
- Modernisation of **Law Enforcement Agencies (LEAs)** with advanced surveillance, forensic and weapon systems.
- Improved intelligence sharing and investigation coordination.

Human Rights & Rule of Law

- Ensuring **due process, accountability and multi-level grievance redressal**.
- Scope for **legal reforms** in counter-terror legislation.

Attenuating Enabling Conditions

- Targeted policing based on **degree of radicalisation**.
- Addressing youth vulnerabilities through **education, employment and de-radicalisation programmes**.

Aligning International Efforts

- Use of **extradition treaties, deportation frameworks and UN conventions**.
- Cooperation to curb **terror misuse of ICT, cyber platforms and financing channels**.

Recovery & Resilience

- **Whole-of-society rehabilitation model** after terror incidents.
- Building **community resilience and institutional preparedness**.

Key Threat Perceptions

Cross-Border & State-Sponsored Terrorism

- Proxy terrorism and infiltration attempts.
- Presence of **global jihadist groups and sleeper cells**.
- Use of **drones for arms and narcotics smuggling** (notably in border states).
- Collaboration between terror outfits and organised crime.

Technology-Driven Terrorism

- Use of **encrypted communication, dark web and cryptocurrencies**.
- Social media propaganda and online recruitment.
- Emerging threats involving **CBRNED materials**.
- Risks from **drones, robotics and cyberattacks**.

Organised Crime Nexus

- Terror groups leveraging criminal syndicates for **funding, logistics and recruitment**.
- Transnational collaboration between foreign handlers and local modules.

Counter-Measures & De-Radicalisation

- Proactive monitoring and takedown of **online extremist propaganda**.
- Enhanced intelligence gathering and counter-terror operations.
- **Community-based reintegration programmes** involving psychologists, NGOs, religious leaders and civil society.

Strategic Way Forward

- Stronger **inter-agency intelligence coordination**.
- Capacity building of **state police and specialised units**.
- Greater **technological investments** including AI-based surveillance and data analytics.
- Partnerships with **private tech firms** to counter cyber terrorism.
- Uniform counter-terror structures across administrative levels.

Significance for India

- Provides a **doctrinal clarity** to India's counter-terror approach.
- Integrates **security, development and rehabilitation dimensions**.
- Enhances preparedness against **emerging hybrid and technology-enabled threats**.
- Strengthens India's role in **global counter-terror cooperation**.

Conclusion

- **Prahaar institutionalises India's counter-terrorism framework** by combining proactive intelligence, inter-governmental coordination, technological preparedness, legal safeguards and international collaboration.
- The policy reflects a shift from **reactive security responses to preventive and ecosystem-level disruption**, thereby strengthening national security and societal resilience.