



## **DAILY CURRENT AFFAIRS 07-03-2026**

### **Mapping Perspective**

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## The Strait of Hormuz

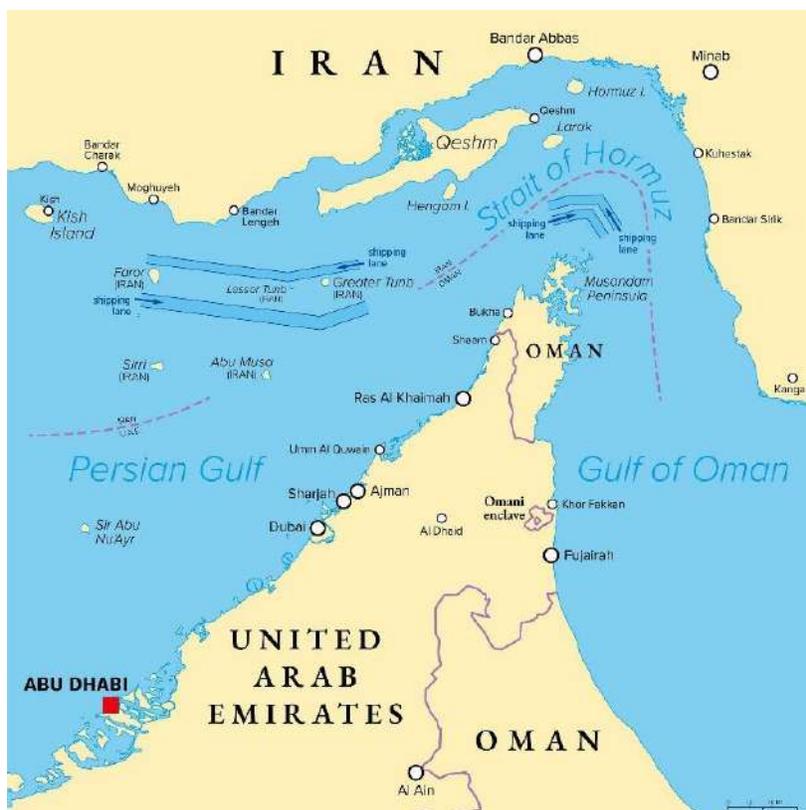
### Syllabus: Prelims Bits – Mapping.

#### Context:

- The **Strait of Hormuz** is a **strategically critical maritime chokepoint** through which oil and gas from the **Persian Gulf** reach global markets.
- It connects the **Persian Gulf** with the **Gulf of Oman**, opening further into the **Arabian Sea** and the **Indian Ocean**.
- Considered one of the **most important energy chokepoints in the world**.

#### Location

- Situated between:
  - **Iran** (north)
  - **Oman** (south)
- **Width:**
  - Narrowest point **≈ 33 km**.
  - Shipping lanes only **~3 km wide in each direction**, separated by a buffer zone.



### Historical Importance

- Historically served as a **vital trade corridor linking Asia, the Middle East and Europe**.
- Became geopolitically prominent during:
  - **1973 Arab Oil Embargo**
  - **Iran–Iraq War** (especially the **Tanker War** phase targeting oil shipping)
- Recurring tensions include tanker seizures and military confrontations during **2012, 2019 and recent Middle East crises (2023–24)**.
- Often used by **Iran as a strategic pressure point during sanctions or regional conflicts**.

### Key Features

- **Major Energy Corridor**
  - Around **20% of global oil supply** (~20 million barrels/day) passes through the strait.
- **LNG Transit Route**
  - Nearly **all LNG exports from Qatar** move through this passage.
- **Global Chokepoint**
  - One of the world's busiest energy routes after the **Strait of Malacca**.
- **Limited Alternatives**
  - Pipelines like:
    - Saudi East-West Pipeline
    - UAE Abu Dhabi–Fujairah pipeline
  - Only **partially bypass the strait**, so most exports still rely on it.
- **International Navigation**
  - Although bordered by **Iran and Oman**, it functions as an **international waterway under maritime law (UNCLOS)**.

### Strategic Significance

- **Energy Security**
  - Any blockage or conflict could trigger **global oil price spikes and supply disruptions**.
- **Global Trade Impact**

- Influences **inflation, shipping costs and economic stability worldwide.**
- **Military Importance**
  - The **United States Fifth Fleet** is stationed in **Bahrain** to secure shipping routes.
- **Geopolitical Flashpoint**
  - Tensions involving **Iran, Israel,** and the **United States** frequently bring the strait under global attention.

## **Musa Sikkimensis**

**Syllabus: GS-3: Agriculture – Crops in news.**

**Context:**

- **Musa sikkimensis** is a **wild banana species** native to the **Eastern Himalayas and Northeast India.**
- Commonly known as **Darjeeling banana** or **Sikkim banana.**
- Recently highlighted by **Nagaland University researchers** for its **genetic diversity useful in climate-resilient farming and banana crop improvement.**



### Key Features

- **Plant type:** Tall **evergreen perennial** belonging to the **banana family (Musaceae)**.
- **Leaves:**
  - Large **paddle-shaped leaves**.
  - Size up to **3 m long and ~60 cm wide**.
- **Flowers:**
  - **Pendulous inflorescences** with **deep maroon colour**.
  - Can grow up to **60 cm long**.
- **Fruit:**
  - Not widely cultivated for edible fruit.
  - Mostly valued as a **wild genetic resource**.

### Climatic Requirements

- **Humidity:** Prefers **50–60% humidity**.
- **Temperature:**
  - Optimal range: **20–30°C**.
  - Can tolerate cooler climates but **not below 10°C**.

### Agricultural Significance

- **Wild-seeded species** acting as an important **genetic reservoir**.
- Possesses traits useful for:
  - **Disease resistance**
  - **Tolerance to environmental stress**
  - **Climate adaptability**
- Valuable for **banana breeding programmes** and **developing climate-resilient crop varieties**.

## Cassava Brown Streak Disease

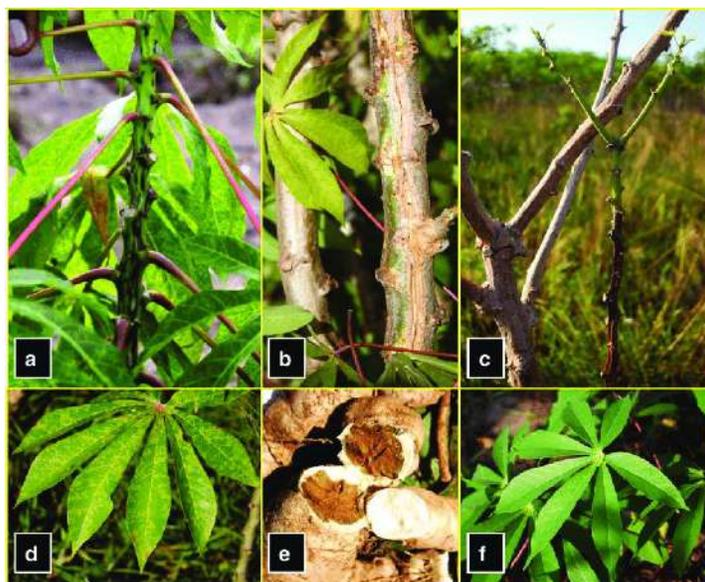
Syllabus: GS-3: Science & Technology, Agriculture - Crops and diseases

### Context:

- A recent study warns that **over one-third of Africa is at risk** from Cassava Brown Streak Disease, threatening food security in regions where cassava is a staple crop.

### Key Points

- **Nature:**
  - A **viral disease of cassava** that severely reduces **root (tuber) yield and quality**.
- **Causative Agents:**
  - Caused by two viruses:
    - Cassava Brown Streak Virus (CBSV)
    - Ugandan Cassava Brown Streak Virus (UCBSV)
- **Origin:**
  - First identified in the **mid-20th century** in the **coastal regions of East Africa**.
- **Geographical Spread:**
  - Now present across **Eastern, Central, and Southern Africa**, including:
  - Tanzania, Uganda, Kenya, Rwanda, Burundi, Congo, **DRC**, South Sudan, Malawi, and Zambia.



### Mode of Transmission

- Primarily spread by the **whitefly *Bemisia tabaci***.
- Certain whitefly populations (**Sub-Saharan Africa 1 & 2**) are **highly efficient virus transmitters**.

### Symptoms

Observed on **leaves, stems, and roots**:

- **Leaf chlorosis** (yellowing of leaves)
- Brown streaks on stems
- Dry, hard rot in storage roots
- **Root necrosis**, often causing **severe yield loss or total crop failure**

### Factors Accelerating Spread

- Weak **clean-seed systems**
- High **whitefly populations**
- **Climate stress and variability**

### Management Strategies

- **Planting virus-free (clean) cassava cuttings**
- Development and adoption of **resistant cassava varieties**
- Improved **seed systems and pest management**

## India-Finland Strategic Partnership

### Syllabus: GS-2: International Relations – Bilateral Relations

#### Context:

- India and Alexander Stubb elevated bilateral ties to a “**Strategic Partnership in Digitalisation and Sustainability**.”
- Decision taken during the Finnish President’s visit to **New Delhi** after talks with Narendra Modi.
- Several agreements were signed covering **migration, environment, statistics, and emerging technologies**.
- The development comes after the **2026 India–EU Free Trade Agreement**, aimed at deepening cooperation with the **Nordic region**.

## Key Outcomes of India–Finland Talks

### Institutional & Economic Initiatives

- Target to **double bilateral trade by 2030**.
- Creation of a **Joint Working Group on Digitalisation**.
- Formation of a **Joint Task Force on 6G telecommunications**.
- **Startup ecosystem collaboration** between both countries.
- **Consular dialogue mechanism** to strengthen people-to-people ties.

### Agreements Signed

Three agreements were signed in the areas of:

- **Migration and Mobility Agreement**
  - Facilitates movement of **students, researchers, and skilled professionals**.
- **Environment Cooperation**
  - Collaboration on **climate action, sustainability and green technologies**.
- **Statistical Collaboration**
  - Exchange of **data systems, statistical methods and governance practices**.

### Areas of Strategic Cooperation

#### Digital and Emerging Technologies

- Focus on advanced sectors:
  - Artificial Intelligence (AI)
  - 6G telecommunications
  - Quantum computing
  - Digital infrastructure
- Aim to build **trustworthy technologies and resilient digital ecosystems**.

#### Sustainability and Circular Economy

- India and Finland will **co-host the World Circular Economy Forum in India**.
- Expansion of cooperation in:
  - Clean energy
  - Environmental protection
  - Sustainable technologies

- Finland's leadership in **circular economy models** supports India's climate goals.

### Defence, Space & Critical Technologies

- Cooperation in:
  - Defence and security technologies
  - Space research
  - Semiconductors
  - Critical minerals supply chains
- Important for **supply chain resilience and technological self-reliance**.

### Examples of India-Finland Cooperation

#### Technology and Infrastructure

- **Telecommunications:**
  - Finnish company Nokia plays a major role in India's telecom networks.
- **Infrastructure:**
  - Finnish architects contributed to the construction of the **Chenab Rail Bridge**, the world's highest railway bridge.
- **Bioenergy:**
  - Collaboration helped build the **bamboo-to-bioethanol refinery in Numaligarh, Assam**.

#### Education and Mobility

- Finland is becoming a **preferred destination for Indian students and professionals**.
- Cooperation includes:
  - **Teacher training**
  - **School partnerships**
  - **Research on future education models**
- Finland's education system is globally recognised for **quality and innovation**.

#### Arctic and Polar Cooperation

- Finland is an important partner in **Nordic and Arctic research**.
- Collaboration areas:
  - **Arctic climate monitoring**

- **Polar research**
- **Sustainable resource management**
- Linked with India's **India's Arctic Policy**.

## **India–Finland Relations: Background**

### **Diplomatic Relations**

- Diplomatic relations established in **1949**.
- Increasing **delegations, joint initiatives and technological cooperation**.

### **Trade**

- Bilateral trade: **EUR 1.5–2 billion annually**.
- Finland has a **slight trade surplus** with India.

### **Investment**

- **100+ Finnish companies** operating in India.
- Major firms include:
  - Wartsila
  - UPM
  - Lindstrom
  - Fortum
  - Ahlstrom
  - Elcoteq

### **Challenges**

- **Limited bilateral trade volume**
  - Trade remains modest relative to potential.
- **Geographical distance**
  - Limited direct connectivity and business awareness.
- **Technological competition**
  - Need for joint **R&D in emerging technologies**.
- **Geopolitical uncertainties**
  - Global conflicts affecting economic and security cooperation.

### **Way Forward**

- Utilize the **India–EU FTA** to expand trade and investments.
- Strengthen **startup and innovation ecosystem partnerships**.
- Promote **joint research in AI, 6G, quantum technologies and semiconductors**.
- Enhance **educational exchanges and talent mobility**.

## **Rethinking India's Rice Production and Export Strategy**

**Syllabus: GS-3: Indian Agriculture –Agri-economics.**

### **Context:**

- India has been the **world's largest rice exporter since 2011–12**.
- In **2024–25**, India exported **21.69 million tonnes** of rice.
- Other major exporters:
  - Thailand – **7.86 million tonnes**
  - Vietnam – **8.06 million tonnes**
- India also became the **largest rice producer in the world (2024–25)** with **150 million tonnes**, surpassing **China (145.28 million tonnes)**.
- Key challenge: **Maintaining export leadership while ensuring environmental sustainability and financial viability**.

### **Environmental Costs of Paddy Cultivation**

#### **Water Intensive Nature of Paddy**

- Paddy requires **continuous flooding** to suppress weeds.
- A **single irrigation of 2.5 cm depth per acre** requires about **1,01,171 litres of water**.
- Fields are usually maintained with **~5 cm standing water**.

#### **Irrigation Requirements**

- Paddy generally requires **20–30 irrigations** depending on crop duration.
- Under conventional transplanting:
  - **25 irrigations × 5 cm depth ≈ 5 million litres per acre**.

#### **Water Footprint of Rice Production**

#### **Water Requirement**

- Average yield: **2.5 tonnes paddy per acre.**
- **1 kg of paddy requires ~2000 litres of water.**

### After Milling

- Milling recovery: **≈ 66%.**
- Therefore:
  - **1 kg rice ≈ 3000 litres of water.**

### Implication

- Exporting **1 kg rice = exporting ~3000 litres of virtual water.**
- Raises concerns about **groundwater depletion and sustainability of rice exports.**

### Financial Sustainability of Rice Exports

India exports **two main categories:**

#### 1. Basmati Rice

- Export volume: **5–6 million tonnes**
- Export earnings: **\$5.8–5.9 billion**
- Average value: **₹82.9–92.3 per kg**

#### 2. Non-Basmati Rice

- Export volume: **11–14 million tonnes**
- Export earnings: **\$4.5–6.5 billion**
- Average value: **₹34–39.2 per kg**

### Key Insight

- Basmati earns much higher revenue per kg despite lower export volume.

### Water Efficiency in Basmati Cultivation

#### Transplanting Season

- **Non-basmati rice**
  - Transplanted in **June (peak summer)**
  - Requires **frequent irrigation**
- **Basmati rice**
  - Transplanted in **July with monsoon onset**
  - **Lower irrigation requirement**

### Environmental Advantage

- **Lower groundwater extraction** compared with non-basmati cultivation.

### Climatic Advantage for Basmati Aroma

- Basmati flowers and grain develops in **October**.
- Temperature around **30–31°C** enables formation of **2-acetyl-1-pyrroline**.

### Importance of this Compound

- Responsible for **basmati's characteristic aroma**.

### Effect of Early Transplanting

- If planted in **June**:
  - Grain filling occurs in **September (higher temperature)**
  - **Aroma quality reduces**.

### Shift Towards High-Value Rice Exports

#### Strategic Goal

Move from **bulk commodity exports** → **high-value aromatic rice exports**.

#### Important Aromatic Rice Varieties (GI Protected)

Variety	State
Kalanamak	Uttar Pradesh
Adamchini	Uttar Pradesh
Katarni	Bihar
Gobindobhog	West Bengal
Badshah Bhog	Chhattisgarh
Koraput Kalajeera	Odisha
Wayanad Jeerakasala	Kerala
Gandhakasala	Kerala
Seeraga Samba	Tamil Nadu

#### Benefits

- Higher **export earnings**

- Lower **water usage**
- Supports **regional specialty agriculture**

### Growth of Basmati Exports

#### Historical Growth

- Early 2000s: **0.6–0.7 million tonnes**
- Present: **5–6 million tonnes**

#### Export Earnings

- Increased from **\$400–450 million** → **\$5.8–5.9 billion**.

#### Key Driver

- High-yield basmati varieties developed by IARI (Indian Agricultural Research Institute).

### High-Yield Modern Basmati Varieties

Variety	Yield	Duration
Traditional basmati	~1 tonne/acre	155–160 days
<b>Pusa Basmati-1509</b>	<b>2.5 tonnes/acre</b>	<b>115–120 days</b>

### Basmati GI Region

- Covers **~6.2 million hectares** across:
  - Punjab
  - Haryana
  - Western Uttar Pradesh
  - Uttarakhand
  - Jammu
  - Himachal Pradesh

### Present Cultivation

- Only **~2.1 million hectares** under basmati.

### Opportunity

- Expanding cultivation across the **entire GI region** can increase:
  - Production
  - Export earnings

- Water efficiency.

## Policy Measures for Sustainable Rice Strategy

### Regional Crop Diversification

- Gradually **reduce non-basmati rice cultivation** in:
  - **Punjab**
  - **Haryana**  
(regions facing severe groundwater depletion).

### Shift Procurement

- Government should procure non-basmati paddy from:
  - Uttar Pradesh
  - Bihar
  - West Bengal
  - Assam  
(regions with relatively better water availability).

### Price Support

- Introduce **floor price for basmati paddy in mandis** to protect farmers from price crashes.

### Advances in Rice Breeding

#### Marker-Assisted Selection

Scientists introduced genes from **wild rice and landraces** into modern basmati varieties.

#### Improved Varieties

- Pusa Basmati-1847
- Pusa Basmati-1885
- Pusa Basmati-1886

#### Resistance Against

- Bacterial Leaf Blight
- Rice Blast

#### Benefits

- Reduced use of **antibiotics and fungicides**
- Maintains **premium export quality**

### Emerging Research Focus

Researchers are identifying genes for resistance against:

#### Diseases

- Bakanae
- False smut
- Brown spot

#### Pests

- Stem borer
- Leaf folder
- Plant hoppers

#### Climate Resilience Traits

- Drought tolerance
- Heat tolerance
- Salinity tolerance

#### Way Forward

- Promote **high-value basmati and aromatic rice exports**.
- Reduce cultivation of **water-intensive non-basmati varieties** in water-stressed regions.
- Encourage **regional specialty rice varieties (GI-tagged)**.
- Invest in **climate-resilient and disease-resistant rice breeding**.
- Align **agricultural policy with water sustainability goals**.