DAILY CURRENT AFFAIRS 10-07-2025

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Bulgaria

Syllabus: GS-1: World Geography – Mapping Perspectives.

Context:

Bulgaria becomes 21st member to adopt euro after EU green light.

About Bulgaria

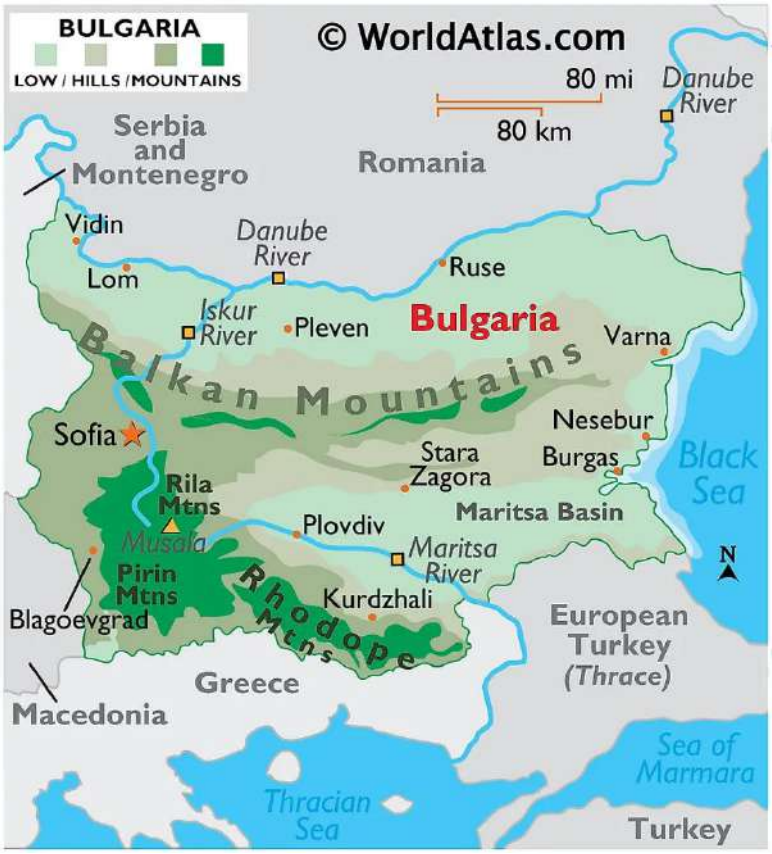
- **Location**: Southeastern Europe, in the eastern part of the **Balkan Peninsula**
- **Capital**: Sofia
- **Neighbouring Countries**: Romania (north), Turkey and Greece (south), Serbia and North Macedonia (west); **Black Sea** to the east

Geographical Features

- **Danube River**: Forms the **northern border** with Romania; vital for transportation, agriculture, and trade
- **Mountains**:
    - **Balkan Mountains (Stara Planina)**: East-west range dividing Bulgaria into northern and southern parts
    - **Rila& Rhodope Mountains**: South; includes **Musala Peak** (highest in the Balkans)
- **Other Natural Landmarks**:
    - **Black Sea Coast**: Major tourist zone (Sunny Beach, Varna, Burgas)
    - **Sofia Basin**: Fertile lowland surrounded by mountains; location of the capital

Cultural Significance

- A historical **crossroad of East and West**
- Cultural blend of **Slavic, Ottoman, Greek, and Thracian** influences
- Known for:
    - Orthodox churches, Ottoman mosques, Roman ruins
    - Unique cuisine: yogurt, banitsa, kebapche



Eurozone: The Single Currency Area

- **Definition**: A **monetary union** of EU nations using the **euro (€)** as their currency
- **Established**:
  - 1999: Electronic transactions
  - 2002: Physical currency introduced
- **Governing Institutions**:
  - **European Central Bank (ECB)**
  - **Eurogroup**
  - National Central Banks

Key Features

- **Single Currency**: Facilitates cross-border **trade, travel, and investment**
- **Monetary Integration**: Unified **interest rates and inflation control**

- **Stability Mechanisms**: Includes **European Stability Mechanism (ESM)**, fiscal discipline
- **Eligibility (Maastricht Criteria)**:
  - Low inflation
  - Stable exchange rates
  - Sustainable public finances
  - Long-term interest rate stability

Recent and Future Members

- **Croatia**: Last country to join the Eurozone (2023)
- **Bulgaria**: Set to join from **January 1, 2026**

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

Syllabus: GS-2: Governance – Laws and Policies.

Context:

The Kerala High Court invoked **The Admiralty (Jurisdiction and Settlement of Maritime Claims) Act, 2017** to order the **arrest of MSC Akiteta II**, a Liberian vessel. The Kerala government filed an admiralty suit demanding **₹9,531 crore** in compensation for damage to the marine ecosystem — marking a **rare use of the Act for environmental claims**.

The Admiralty Act, 2017 – Overview

Purpose:

To modernize and consolidate laws related to maritime claims, ship arrest, and admiralty jurisdiction in India.

Key Features:

- **Uniform Legal Framework:** Replaces outdated British-era laws (1861 & 1890) with a centralized modern code.

- **Jurisdictional Expansion:**Extends admiralty jurisdiction beyond colonial ports (e.g. Bombay, Madras) to **High Courts of Kerala, Karnataka, Odisha, Telangana, and Andhra Pradesh**.
- **Types of Claims Covered (Section 4):**
  - Damage to environment (e.g., oil spills, marine pollution)
  - Cargo loss or damage
  - Crew wages
  - Ship collisions and ownership disputes
- **Arrest of Vessels (Section 5):**
  - Courts can detain ships to secure maritime claims
  - Arrest allowed even if the vessel wasn't directly involved, if ownership is linked
- **Legal Actions:**
  - **In Rem**: Against the ship itself
  - **In Personam**: Against the owner or operator
- **Environmental Protection:**
  - Explicit provisions for **compensation for marine environmental damage**
  - Helps states like Kerala hold foreign vessels accountable for pollution
- **Global Alignment:**
  - Harmonized with **UNCLOS** and **IMO** maritime conventions

Significance:

- **Environmental Accountability:**First significant case of using the Act for ecosystem damage (₹9,531 crore claim by Kerala). Earlier, similar claims were made post the **MSC Elsa III disaster**.
- **Empowering Regional High Courts:**Non-metropolitan ports and regional High Courts (like Kerala) can now **exercise full maritime jurisdiction**.
- **Protecting Fisheries and Coastal Economies:**Kerala has separately sought **₹526 crore** for fisherfolk's livelihood loss.

- **Boosting Maritime Governance:**The Act supports port-led development and **investor confidence** through transparent legal mechanisms — key for initiatives like **Sagarmala**.

Medium Altitude Long Endurance (MALE) Drones

Syllabus: GS-3: Science and Technology – Defence Technology.

Context:

India has fast-tracked a ₹20,000 crore procurement of 87 indigenous **Medium Altitude Long Endurance (MALE) drones** to boost surveillance and operational readiness along its borders.

What is a MALE Drone?

- **MALE (Medium Altitude Long Endurance)** drones are **unmanned aerial vehicles (UAVs)**.
- **Operational Altitude:** Up to ~35,000 feet
- **Flight Endurance:** Capable of sustained missions **exceeding 30 hours**

- Used for **Intelligence, Surveillance, Reconnaissance (ISR)** and **limited combat roles**

Key Features:

- **Endurance:** 30+ hours of continuous flight
- **Altitude:** Operate at medium altitudes (~35,000 ft)
- **Payload:** Equipped with:
  - EO/IR (Electro-Optical/Infrared) sensors
  - Radar systems
  - Armed modules (for strike capability)
- **Remote Operations:** Controlled through secure ground-based stations
- **Real-Time Data Link:** Live ISR feeds
- **Indigenisation:** Over 60% components locally manufactured under **'Make in India'**

Strategic Applications:

- **Border Surveillance:** Along LAC (China), LoC (Pakistan), and maritime boundaries
- **Tri-Services Utility:** Enhances interoperability across Army, Navy, and Air Force
- **Maritime Security:** Monitoring of Indian Ocean and hostile naval activities
- **Counter-Insurgency Ops:** In Naxal and insurgency-affected areas
- **Disaster Management:** Aerial mapping and real-time data during floods, earthquakes

Significance:

- **Enhances National Security:** Persistent surveillance and quick response capability
- **Reduces Import Dependency:** Shift from Israeli to Indian drones
- **Promotes Defence Manufacturing:** Encourages indigenous R&D and industry
- **Supports Atmanirbhar Bharat:** Strengthens domestic defence ecosystem

Conclusion:

The deployment of indigenous MALE drones marks a strategic leap in India's surveillance, reconnaissance, and defence capabilities. It aligns with India's goals of self-reliance in defence and better preparedness for hybrid and asymmetric threats.

Accelerator Mass Spectrometry (AMS) Dating

Syllabus: GS-3: Science and Technology – Dating Technology.

Context:

T.N. Archaeology Department sends 23 charcoal samples to U.S. for AMS dating.

Accelerator Mass Spectrometry (AMS) Dating – Key Takeaways

➢ What is AMS Dating?

- A highly precise radiocarbon dating technique that measures the ratio of **Carbon-14 (C-14)** isotopes in archaeological samples.
- Unlike traditional radiometric methods (which detect radioactive decay), **AMS directly counts individual C-14 atoms**, improving accuracy.

➢ Why is AMS Preferred?

- **Smaller samples needed** (as little as **20 mg**, vs. grams required for conventional methods).
- **Higher precision** (lower background noise, better accuracy).
- **Faster results** (hours vs. days/weeks).
- **Less destructive** (ideal for rare artifacts).

➢ How Does AMS Work?

- **Sample prep:** Organic material (charcoal, bone, etc.) is purified and converted to graphite.
- **Ionization:** A cesium beam generates negatively charged carbon ions.
- **Acceleration:** Ions are sped up using a tandem accelerator.
- **Isotope separation:** Magnetic fields separate C-12, C-13, and C-14.
- **Detection:** C-14 atoms are counted to determine age.

➢ Applications in Archaeology (Like TNSDA's Study)

- Dating **charcoal, wood, bones, pottery residues**.
- Helps establish **chronology of ancient sites** (e.g., Tamil Nadu's 7 excavation sites).
- Useful for **tiny or precious samples** where preservation is critical.

- **Beyond Archaeology**
    - **Geology:** Dating sediments, volcanic layers.
    - **Climate Science:** Tracking past carbon cycles.
    - **Biomedical Research:** Drug metabolism studies.

Why is TNSDA Using AMS Dating?

- To **accurately date charcoal samples** from Tamil Nadu's excavation sites.
- **Small sample sizes** allow testing without destroying valuable artifacts.
- **High precision** helps refine historical timelines of ancient Tamil civilizations.

Coartem Baby

Syllabus: GS-3: Science and Technology –Biotechnology

Context:

Novartis wins approval: First malaria treatment drug for newborns and babies is here.

Coartem Baby – Key Facts at a Glance

What is Coartem Baby?

- The **first-ever malaria treatment** specifically approved for **newborns and infants** (weighing **2–5 kg**, from birth up to **<6 months old**).
- A **pediatric formulation** of **artemether-lumefantrine** (a WHO-recommended malaria treatment).

Developed By

- **Novartis** in collaboration with:
    - **Medicines for Malaria Venture (MMV)**
    - Other global health partners

Why is it Important?

Fills a critical gap: No prior approved malaria treatment existed for infants **below 5 kg** (previously, doctors had to use off-label, unapproved dosing from older children's medicines).

Saves lives: Protects **~30 million newborns** born yearly in malaria-endemic Africa.

Better safety & compliance:

- **Dissolves easily** (can mix with breast milk).
- **Cherry-flavored** for infant acceptance.
- **Optimized dosing** for babies with immature liver function.

Approval & Availability

First approval: Switzerland (under **Marketing Authorisation for Global Health Products** pathway).

Next approvals: **8 African nations** fast-tracking approvals—**Kenya, Tanzania, Uganda, Nigeria, Malawi, Mozambique, Burkina Faso, Ivory Coast**.

Affordable access: Will be supplied **not-for-profit** in malaria-endemic regions.

Impact

- Helps combat **infant mortality** from malaria (a leading cause of death in endemic areas).
- Supports **global malaria elimination** efforts by protecting the most vulnerable.