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## **EN-BUZZER**



**Daily News**

**Analysis**

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## 1. Brain Atlas

- **Prelims** - Brain Atlas
- **Mains** - GS 3 - Science and Technology

### Why in the news?

- New brain atlases integrate multiple cutting-edge mapping techniques to track how neurons and glial cells develop, migrate, and diversify across different stages and species.

### Brain Atlas

- **What is it?:** Brain atlas is a scientific resource that maps the structure and cellular composition of the human brain, including developmental stages from embryo to adulthood.
- **Purpose:**
  - To precisely locate brain regions, nuclei, pathways, and functional networks.
  - Guides neurosurgery, neurological diagnosis, and brain research.
  - Helps compare healthy vs. diseased brains (Alzheimer's, Parkinson's, epilepsy, tumors).
  - Essential in connectomics, brain–computer interfaces (BCIs), and AI modelling.
- **Applications:**
  - **Medical:**
    - ★ Neurosurgery navigation
    - ★ Tumor mapping
    - ★ Stroke rehabilitation
    - ★ Psychiatric research (depression, schizophrenia)
  - **Research:**
    - ★ Understanding brain function and disorders
    - ★ Brain–computer interfaces
    - ★ AI models inspired by brain architecture
  - **Education:** Teaching neuroanatomy through interactive 3D atlases.

## 2. Custodial Torture

- **Prelims** - Custodial Torture
- **Mains** - GS 2 - Polity

### Why in the news?

- The Supreme Court has questioned the Centre on non-compliance of its directive to install CCTV cameras in the offices of agencies such as the CBI, ED, and NIA to prevent custodial torture.

### Custodial Torture

- What is it?:
  - Custodial torture refers to the **use of physical or psychological violence** by police, prison staff, or any law-enforcement authority **against a person in custody** during arrest, interrogation, remand, or imprisonment.
  - It violates Article 20 (Protection against Self-incrimination), Article 21( Right to Life and Personal Liberty) and Article 22(Safeguards on Arrest)
- Statistics:
  - India reports hundreds of custodial deaths annually (National Human Rights Commission).
  - Many go unreported, and conviction rates are extremely low.
  - NCRB 2023 recorded more than 100 custodial deaths but only a handful of police personnel were chargesheeted, highlighting systemic gaps.
- Reasons for Custodial Tortures in India:
  - Colonial legacy of policing focuses on extraction rather than investigation.
  - Pressure to “solve cases” quickly.
  - Lack of forensic infrastructure causes dependence on forced confession.
  - Poor training & sensitization of police staff.
  - Weak accountability → rare convictions, culture of impunity.
  - Overcrowded prisons & poor oversight.
  - Socio-economic vulnerability of victims.
- Safeguards:
  - **Constitutional Safeguards:**
    - ★ **Art. 21:** Protection of life and dignity.

★ **Art. 20(3):** No self-incrimination and prevents forced confession.

★ **Art. 22(1) & (2):** Right to lawyer and to get produced before a magistrate within 24 hours.

→ **Statutory Safeguards:**

★ **Section 35 in BNSS:** Arrest only when necessary

★ **Section 187 in BNSS:** Remand procedures under judicial oversight

★ **BNS Section 120:** Punishment for causing hurt/grievous hurt to extort confession

★ **SC/ST Act –** Additional protection for Dalits/Adivasis.

→ **Judicial Safeguards:**

★ **D.K. Basu vs State of West Bengal (1997):** Laid down guidelines for Arrest memo, Right to lawyer and Maintain arrest register

★ **Joginder Kumar vs State of UP (1994):** Arrest should not be routine, but justified.

★ **Prakash Singh Case (2006):** Police reforms to reduce abuse of power.

★ Guidelines to install CCTV Cameras in offices of agencies like CBI, ED and NIA to avoid custodial torture.

● **Impacts of Custodial Torture:**

- Erodes public trust in law enforcement.
- Violates human rights & weakens democracy.
- Damages India's global image on rule of law.
- Produces false confessions, weakening criminal justice outcomes.
- Exacerbates marginalization of Dalits, Tribals, minorities, migrants, poor.

● **Way Forward:**

- **Ratify UNCAT** and enact a comprehensive **Anti-Torture Law**.
- **Strengthen forensics**, CCTV in police stations (SC ruling, 2020).
- **Mandatory body-worn cameras** during arrest/interrogation.
- **Sensitization & training** in human rights and modern policing.
- **Strict accountability** — prosecution of erring officials.
- **Legal aid services** for vulnerable groups (under NALSA).

### 3. Project 17 A

- **Prelims** - Project 17 A
- **Mains** - GS 3 - Science and Technology

### Project 17A



#### Why in the news?

- The Indian Navy commissioned the state-of-the-art Project 17A stealth frigates INS Taragiri.

#### Project 17A

- **Launch:** Project 17 Alpha frigates (P-17A) were launched by the Indian Navy in 2019.
- **Aim:** To construct a series of stealth guided-missile frigates.
- **Constructed by:** Two companies - Mazagon Dock Shipbuilders (MDL) and Garden Reach Shipbuilders & Engineers (GRSE).
- **What is it?:** These guided-missile frigates have been constructed with a specific stealth design, which has radar-absorbent coatings and is low-observable which can make its approach undetectable for the enemies.
- **Fact:** The first stealth ship launched under Project 17A was the Nilgiri.



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## 4. Durand Line

- **Prelims** - Durand Line
- **Mains** - GS 2 - International Relations

### Why in the news?

- Conflict has flared once again between Pakistan and Afghanistan. The Taliban claimed that Pakistan carried out air strikes inside its territory, killing 10 people near the Durand Line

### Durand Line

- **What is it?**: The Durand Line is the international land border between Afghanistan and Pakistan, stretching 2,640 km ( $\approx$ 1,600 miles).
- **Area Covering**: Extends from the Iran–Afghanistan–Pakistan tri-junction in the west to the Pakistan–Afghanistan–China tri-junction in the east.
- **Historical Backing**

#### → Durand Agreement (1893)

- ★ Defined the boundary and Afghanistan's acceptance of British Indian authority across tribal belts.
- ★ Demarcated by Sir Henry Mortimer Durand (Foreign Secretary, British India) and Emir Abdur Rahman Khan (Afghanistan)
- ★ Purpose: To demarcate spheres of influence between British India and Afghanistan and to serve as a buffer as a buffer line amid the “Great Game” rivalry between Britain and Russia.

#### → Anglo-Afghan Treaty (1919)

- ★ After the Third Anglo-Afghan War, the treaty reaffirmed:
  - ❖ Afghanistan's independence
  - ❖ Acceptance of all previous agreements including the Durand Line
- ★ Pakistan considers the treaty inheritance binding under state succession.

#### → Post-1947

- ★ After partition, the Durand Line became the Afghanistan–Pakistan border.
- ★ Afghanistan voted against Pakistan's UN membership in 1947, citing objections to the border.

## → Contemporary Position

- ★ Pakistan: Considers it the legal international border.
- ★ Afghanistan: Successive governments (except during Taliban rule at times) have not recognized it officially.

## ● Physical Geography

- Rugged Topography with ranges like Hindu Kush, Karakoram Range, Spin Ghar mountains.
- Pass in the region is Khyber Pass

## ● Security Concern

- Cross-border militancy
- Smuggling and illegal migration
- Presence of terror groups in border regions

## ● Strategic Importance

- Acts as a strategic buffer zone between South Asia and Central Asia.
- India–Pakistan–Afghanistan strategic triangle
- Trade routes (Khyber Pass, Chaman)
- China's western connectivity (Wakhan Corridor proximity)



## 5. SIM Binding

- **Prelims** -SIM Binding
- **Mains** - GS 3 - Science and Technology

### Why in the news?

- The Department of Telecommunications (DoT) has directed online messaging platforms to bar users from accessing their services without the SIM card used to register for the application.

### SIM Binding

- **What is it?**: SIM Binding is a security feature that links a user's mobile SIM card to a specific application or service to verify identity and prevent fraud.
- **Aim**: It ensures that only the SIM card registered with the service can access the app or perform sensitive transactions.
- **Importance**
  - Prevents SIM-swap fraud, where criminals duplicate SIM cards to steal OTPs.
  - Stops unauthorized logins to apps using stolen devices.
  - Secures UPI, banking, and financial transactions.
  - Ensures that transactions originate from the registered SIM only.
- **Security Advantages**
  - Enhances two-factor authentication (2FA).
  - Reduces dependence on OTP alone (more secure than SMS OTP).
  - Detects illegal SIM cloning or SIM-jacking.
  - Provides device-level + SIM-level authentication.
- **Limitation**
  - If a user genuinely replaces a SIM, re-verification is required.
  - If phone is stolen with the SIM inside, risk still remains (mitigated with app lock/biometrics).
  - Vulnerable if the telecom operator is compromised.
  - Not useful for WiFi-only devices.

## 6. Sanchar Saathi App

- **Prelims** -Sanchar Saathi App
- **Mains** - GS 2 - Governance

### Why in the news?

- The Department of Telecommunications (DoT) has mandated the pre-installation of the Sanchar Saathi app on all new mobile handsets manufactured or imported for sale in India.

### Sanchar Saathi App

- **Launch:** 2023
- **Ministry:** Ministry of Communication
- **Aim:** It is a citizen-centric digital platform that helps users track, secure, and authenticate their mobile connections.
- **Objectives**
  - ➔ Prevent misuse of mobile connections.
  - ➔ Detects fraud, identity theft, and illegal telecom activities.
  - ➔ Help citizens secure/locate lost or stolen mobile phones.
  - ➔ Enhance KYC integrity in telecom services.
  - ➔ Support law enforcement agencies with accurate device data.
- **Features for Citizens**
  - ➔ Check mobile numbers linked with your identity.
  - ➔ Report fraudulent SIMs.
  - ➔ Block/track lost devices using IMEI.
  - ➔ Check smartphone authenticity (whether it is stolen or duplicate).
  - ➔ Protect against cyber fraud, financial scams, and identity misuse.
  - ➔ Facilitates real-time alerts and verification.

## 7. Cold Wave

- **Prelims** - Cold Wave
- **Mains** - GS 1 - Geography

### Why in the news?

- As per IMD there will be more than the usual number of 'cold wave' days over Delhi, Haryana, Punjab, eastern Uttar Pradesh, northern Madhya Pradesh, western Maharashtra and Arunachal Pradesh

### Cold Wave

- **Definition:** *A cold wave is a meteorological phenomenon characterized by a sudden and significant drop in temperature over a short period, typically associated with the intrusion of cold air masses into a region.*
- **Features of a Cold Wave:**
  - ➔ **Rapid Temperature Decline:** A noticeable drop in temperature over a few hours to days.
  - ➔ **Duration:** Can last from a few days to several weeks.
  - ➔ **Regional Variation:** The temperature threshold for a cold wave varies depending on the climatic norms of the region.
  - ➔ **Associated Weather Conditions:**
    - ★ Strong winds.
    - ★ Clear skies, which often exacerbate cooling during the night.
    - ★ Formation of frost, freezing rain, or snow in some cases.
- **Causes of Cold Waves:**
  - ➔ **High-Pressure Systems:** Cold air masses from polar or arctic regions are pushed towards lower latitudes by high-pressure systems.
  - ➔ **Jet Stream Shifts:** A dip in the jet stream can allow cold polar air to move southward into warmer regions.
  - ➔ **Snow and Ice Cover:** Reflects sunlight, reduces heat absorption, and contributes to colder temperatures.
  - ➔ **Geographic Features:** Valleys, mountains, and open plains can influence how cold air pools and moves.

- **Impact of Cold Waves:**

- **Human Health:**

- ★ Hypothermia and frostbite risks.
    - ★ Increased mortality rates among vulnerable populations (e.g., elderly, homeless).

- **Agriculture:**

- ★ Crop damage and reduced yield.

- ★ Livestock fatalities due to extreme cold.

- **Infrastructure:**

- ★ Frozen water pipes.

- ★ increased demand for heating, leading to energy shortages.

- ★ Disruption to transportation systems (e.g., icy roads, rail, and air travel delays).

- **Ecosystems:**

- ★ Stress on wildlife, affecting their survival and migration patterns.