DAILY CURRENT AFFAIRS 05-08-2025

GS-1

1. **Krasheninnikov Volcano**

GS-2

2. **Right to Repair in India**

3. **PM National Dialysis Programme**

GS-3

4. **India's First 5G Captive Non-Public Network in Refinery Sector**

5. **Operation Akhal**

Krasheninnikov Volcano

Syllabus: GS-1: World Physical Geography – Volcanoes.

Context:

> **First Recorded Eruption:** The **Krasheninnikov volcano erupted for the first time in recorded history** on **2 August 2025**.

> **Trigger Event:** Eruption occurred **3 days after a magnitude 8.8 earthquake** nearby.

> **Ash Emissions:** Ash plumes reached an altitude of **20,000 feet**, posing aviation and environmental hazards.

About Krasheninnikov Volcano

> **Location:** Eastern **Kamchatka Peninsula**, Russia.

> **Geological Setting:** Lies within the **Pacific Ring of Fire**—a zone of frequent earthquakes and volcanic eruptions.

> **Volcanic Type:Stratovolcano** (composite volcano), part of a **complex volcanic system**.

> **Elevation:1,886 meters** above sea level.

> **Caldera Formation:**

>> o Located inside a **collapsed caldera** formed **39,600 years ago**.

>> o That eruption released **~50 cubic km of dacitic pumice**—a highly explosive event.

> **Structure:**

>> o Contains **two eruptive cones** within a **9 km wide caldera**.

>> o The **southern cone** has a **crater 800 m wide and 140 m deep**.

> **Last Known Eruption:** Prior to 2025, the last eruption occurred approximately **400–600 years ago**.

Kamchatka Peninsula – Volcanic Context

> **Global Hotspot:** Contains **114 volcanoes** that have erupted during the **Holocene Epoch (last 12,000 years)**.

> **Tectonic Setting:** Located at the **convergent boundary** of the **Pacific and North American plates**.

> **Significance:** One of the most volcanically active regions on Earth.

What is a Stratovolcano?

➤ **Definition:** A **tall, steep, cone-shaped volcano**, also known as a **composite volcano**.

➤ **Composition:** Built from **alternating layers of lava flows, volcanic ash, and other pyroclastic materials**.

➤ **Eruption Style:** Known for **explosive eruptions** due to:

  o High-viscosity lavas (andesite and dacite).

  o High gas pressure buildup.

➤ **Tectonic Setting:** Commonly found **above subduction zones** (e.g., Ring of Fire).

➤ **Global Share:** Make up **~60%** of Earth's volcanoes.

➤ **Crater Features:** Often have a **small summit crater**, which may hold water, ice, or a volcanic dome.

Right to Repair in India

Syllabus: GS-2: Consumer Rights

Context:

➢ In May 2025, the Department of Consumer Affairs approved a **Repairability Index** for electronics like mobile phones and appliances.

➢ This is part of India's broader **Right to Repair** framework initiated in 2022 and expanded with a national portal in 2023.

➢ India is among the **top 3 e-waste producers** globally, with over 1.6 million tonnes generated in 2021–22.

➢ Policies are increasingly focusing on sustainable consumption, repair, and reduction of electronic waste.

Key Themes and Arguments

India's Informal Repair Ecosystem

➢ Markets like Karol Bagh, Ritchie Street, and local mobile/laptop repair shops form the backbone of India's repair economy.

➢ These are mostly informal, unrecognised spaces that keep devices running well beyond their expected lifespans.

➢ The repair process here is **experiential and non-documented**, often passed on through observation and mentorship.

Tacit Knowledge as a Public Asset

➢ The repairers rely on **tacit knowledge**—skills learned through hands-on practice rather than formal training.

➢ These skills are crucial for sustainability and should be preserved and respected as a **knowledge system** in themselves.

➢ With the growth of Artificial Intelligence and technology, this local, grounded knowledge becomes more important to ensure real-world adaptability.

Policy Blind Spots

➢ Government programs like **PMKVY** and **NEP 2020** promote experiential learning but often neglect the informal repair workforce.

➢ India's current e-waste rules focus more on **recycling** than **repair-first** approaches.

➢ Despite missions like **Mission LiFE** promoting sustainability, repair workers lack social security, legal support, or technical certification.

Unmaking and Circular Economy

- The concept of "**unmaking**" involves designing products that are easy to disassemble, repair, and repurpose.

- Informal repairers contribute actively to the **circular economy** by reusing and refurbishing parts and extending product life cycles.

AI and Repair Justice

- Only about 23% of smartphones in Asia are considered easily repairable, reflecting poor product design for longevity.

- Cross-sector collaboration is needed to ensure inclusive tech ecosystems:

  o **Ministry of Electronics:** Mandate repairability in product procurement.

  o **Ministry of Consumer Affairs:** Expand support for diverse product repairs.

  o **Labour Ministry:** Provide recognition and social benefits through platforms like e-Shram.

  o **Skill Development Ministry:** Create training programs based on real-world repair experiences.

- AI tools can be designed to learn from and support informal repair processes, codifying tacit knowledge without erasing its human-centric foundation.

PM National Dialysis Programme

Syllabus: GS-2: Social Justice – Health Sector.

Context:

PM National Dialysis Programme expanded to 751 districts across India.

Pradhan Mantri National Dialysis Programme (PMNDP)

Launched: April 2016, under Union Budget 2016–17

Ministry: Ministry of Health and Family Welfare

Under: National Health Mission (NHM)

Objective

- Provide **free dialysis services** to economically vulnerable patients with **End-Stage Renal Disease (ESRD)**

- Ensure **equitable and affordable access** to dialysis across India

- Reduce **financial burden** on Below Poverty Line (BPL) families

> Strengthen **renal-care infrastructure** in public health systems

Current Reach (as of June 30, 2025)

> **751 districts** across **36 States/UTs**

> **1,704 functional dialysis centres**

> Services extended to **Community Health Centres (CHCs)** in **tribal and remote areas**

Dialysis Services Provided

> **Haemodialysis (HD)**

> **Peritoneal Dialysis (PD)**

Implementation Models

Model Type	No. of States/UTs	Description
PPP Model	14 States/UTs	Public-Private Partnership based
In-house Model	16 States/UTs	Government-run infrastructure
Hybrid Model	6 States/UTs	Combination of PPP and In-house

Digital Initiatives

PMNDP IT Portal (Launched May 2022):

> Real-time integration of all dialysis centres

> Supports **One Nation–One Dialysis** policy

> Displays **real-time slot availability**

ABHA (Ayushman Bharat Health Account):

> 14-digit unique ID for each patient

> Enables **Personal Health Record (PHR)** access

> Links patient data across systems

> Integrates with insurance schemes like **Ayushman Bharat – PM-JAY**

Health Facility Registry (HFR):

> Database of all public and private health institutions

> Improves transparency, accessibility, and planning

Target Beneficiaries

> **Primary:** Below Poverty Line (BPL) patients

> ➢ **Secondary:** All ESRD patients benefit from improved infrastructure

India's First 5G Captive Non-Public Network in Refinery Sector

Syllabus: GS-3: Infrastructure – Telecom.

Context:

> ➢ Bharat Sanchar Nigam Limited (BSNL) and Numaligarh Refinery Limited (NRL) have signed a **landmark MoU** to deploy **India's first 5G Captive Non-Public Network (CNPN)** in the **refinery sector**.

> ➢ Announced during the "**Industry 4.0 Workshop for CPSEs**" organized by the Ministry of Finance.

What is It?

> ➢ **First industrial-grade 5G private network** in India.

> ➢ To be installed at **Numaligarh Refinery Limited (NRL)** in Assam.

> ➢ Marks a milestone in **industrial digitalization** under **Industry 4.0**.

Objectives:

> ➢ Pioneer **5G-enabled digital transformation** in India's refinery sector.

> ➢ Enhance:
> - o Operational efficiency
> - o Process automation
> - o Cybersecurity
> - o Workforce training using immersive tech

> ➢ Serve as a **model for replication** across core industries.

Key Features of the 5G CNPN Deployment:

Indigenous Infrastructure

> ➢ Entire 5G network is **India-built** ensuring **self-reliance and data sovereignty**.

URLLC (Ultra-Reliable Low Latency Communication)

> ➢ Enables **real-time process control**, monitoring and **fail-proof industrial operations**.

Integration with Emerging Technologies

- **AR/VR**: For immersive safety and skill training.
- **IoT**: For real-time monitoring of machinery and logistics.
- **Digital Twins**: Simulated models for **predictive maintenance**.

Cyber Resilience

- Designed with **high-grade security architecture** to protect mission-critical systems from cyber threats.

Regional Development

- Boosts **digital job creation** and **smart infrastructure** in the **North-East**, particularly **Assam**.

About Captive Non-Public Network (CNPN):

Definition:

- A **dedicated private 5G network** deployed exclusively for an enterprise (e.g., refinery, port, factory) for internal communication and operational use.

Working Mechanism:

- Operates on:
  - **Licensed spectrum** or
  - BSNL-allocated 5G bands.
- **Isolated from public networks**, ensuring **no interference** and **data privacy**.
- Localized **device-to-device** and **machine-to-machine** communication.

Key Features of CNPN:

Feature	Description
Ultra-low Latency	Enables real-time analytics and automation.
High Throughput	Capable of handling large volumes of industrial data.
Enhanced Privacy	Operational data stays within enterprise firewalls.
Custom Architecture	Designed for specific industrial needs (e.g., refinery safety, logistics).
Network Slicing	Allows dedicated lanes for different functions (e.g., safety, production).

Significance for India:

- ➢ **Industrial Modernization**: Pushes India's transition to **Industry 4.0**.

- ➢ **Atmanirbhar Bharat**: Supports indigenous development of critical infrastructure.

- ➢ **Digital Economy Boost**: Promotes **smart manufacturing**, **data-driven operations**.

- ➢ **Energy Sector Leadership**: Sets precedent for other **PSUs and refineries**.

- ➢ **Strategic Use of 5G**: Demonstrates 5G use beyond telecom—into **mission-critical operations**.

Potential Challenges:

- ➢ Spectrum allocation clarity for CNPNs.

- ➢ Data governance and cybersecurity concerns.

- ➢ Need for skilled manpower to operate complex 5G networks.

Operation Akhal

Syllabus: GS-3: Internal Security – Counter terrorism operations.

Context:

- ➢ A **high-intensity counter-terrorism operation** launched in **AkhalKhulsan forest area**, Kulgam district, Jammu & Kashmir.

- ➢ Jointly conducted by:

  - o Indian Army's Chinar Corps

  - o Jammu & Kashmir Police

  - o Special Operations Group (SOG)

Objective

- ➢ **Neutralize 3–5 terrorists** hiding in the forest area based on intelligence inputs.

- ➢ **Dismantle local terror modules** and suppress militant activity.

- ➢ Strengthen **internal security and surveillance grid** in the region.

Key Features

- ➢ Ongoing **calibrated firefight** since the launch of the operation.

- ➢ **Precision-based approach** to minimize collateral damage.

➢ Part of a **broader crackdown** following the **Pahalgam terror attack**.

➢ **Multiple layers of operations**, including:

- o Counter-terror strikes

- o Disruption of **hawala networks**

- o Targeting **narco-terrorism**

- o Arrest of **OGWs (Overground Workers)**

Strategic Context

➢ Reflects India's **multi-agency synergy** in counter-terrorism.

➢ Uses **real-time intelligence**, **terrain specialization**, and **local coordination**.

➢ Addresses **cross-border terrorism support** systems.

➢ Enhances **area domination and civilian security** in south Kashmir.

Implications

➢ Enhances **public confidence** in state response to terrorism.

➢ May trigger **retaliation or recruitment efforts** by terror outfits – a need for **long-term vigilance**.

➢ Reinforces the importance of **integrated theatre commands** and **tech-enabled policing**.

Conclusion

Operation Akhal exemplifies India's **proactive and multi-dimensional approach** to counter-terrorism in J&K, combining **military precision**, **policing**, and **financial intelligence** to break the back of terrorism and its ecosystem.