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# Meghalaya Illegal Coal Mine Explosion — Rat-Hole Mining, NGT Ban, and the Governance Failure

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**SUBJECTS COVERED****ENVIRONMENT****SOCIAL ISSUES****SECURITY & DEFENCE****CURATED & WRITTEN BY****Bharat Choudhary**

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## WHY IN NEWS

Rescue operations continued at an illegal coal mine at Mynsngat, Thangsko area, Meghalaya following an explosion — recovering additional bodies — underscoring the persistent failure to enforce the National Green Tribunal's 2014 ban on rat-hole coal mining in the state.

## WHAT IS RAT-HOLE MINING?

**Rat-hole mining** is a method of coal extraction unique to Meghalaya, particularly in the **Jaintia Hills, East Khasi Hills, and Garo Hills** districts. The term refers to the digging of **narrow horizontal or vertical tunnels** — typically just wide enough for one person — into hillsides or riverbeds to extract coal seams.

Two main variants:

**Side-cutting rat-hole mining:** Narrow tunnels dug horizontally into the hillside along the coal seam

**Box-cut mining:** A box-shaped open pit is dug, from which rat-hole tunnels extend into the seam floor

The mining involves **no mechanical equipment, no modern safety devices, no ventilation systems, and no structural support**. Workers — often children or migrant labourers from other states — extract coal manually, filling bags that are hauled out by rope.

The consequence is predictable: cave-ins, flooding, explosions from methane accumulation, and suffocation are recurrent hazards. Meghalaya has experienced several mass mine disasters — the most infamous being the **Ksan coal mine flooding in December 2018** in East Jaintia Hills, where **15 miners were trapped underground** for months before being confirmed dead; the operation stretched over 140+ days and became a high-profile rescue failure.

## NGT BAN AND ITS NON-ENFORCEMENT

The **National Green Tribunal (NGT)** issued a **comprehensive ban on rat-hole coal mining in Meghalaya in April 2014** — citing environmental destruction, water contamination, child labour, and worker safety violations.

The order was grounded in multiple legal violations:

**Mines and Minerals (Development and Regulation) Act, 1957** — no proper mining leases or licences

**Environment Protection Act, 1986** — no environmental clearances

**Child Labour (Prohibition and Regulation) Act** — employment of children in mines

**Mines Act, 1952** — no safety standards, no pit support, no ventilation

The **Meghalaya Coal Miners Association** challenged the ban, and the matter went to the Supreme Court, which upheld the NGT's ban. Despite this, illegal mining has continued — for a fundamental reason: coal is a primary source of livelihood in these districts, land ownership in Meghalaya follows customary tribal tenure (much coal land is privately owned under the **Sixth Schedule of the Constitution**, exempting it from central land laws), and enforcement capacity is minimal.

## THE CONSTITUTIONAL DIMENSION — SIXTH SCHEDULE AND TRIBAL LAND RIGHTS

Meghalaya is a **Sixth Schedule** area — autonomous district councils (the **Khasi Hills Autonomous District Council, Garo Hills ADC, and Jaintia Hills ADC**) have significant legislative powers over land use and resource management for their communities. Coal under Meghalaya is largely found on **privately owned land**, and tribal communities claim traditional rights to mine coal from their own land.

This creates a direct conflict:

**Central law** (Mines and Minerals Act) requires mining leases and environmental clearances from the central government

**Sixth Schedule rights** give tribal communities and ADCs powers over land, which some interpret as including coal extraction rights

The **NGT and Supreme Court** have held that no constitutional provision permits mining that violates environmental law

The legal conflict has created a space in which neither central enforcement agencies nor state police have been effectively able to shut down illegal operations — creating the persistent hazard evidenced by repeated disasters.

## THE ENVIRONMENTAL IMPACT

Rat-hole coal mining has caused extensive ecological damage in Meghalaya:

**River acidification:** Coal seams near rivers leach sulfuric acid into waterways. The **Lukha River** in Jaintia Hills and other rivers have become effectively biologically dead — pH levels measured as low as 2.0–4.0 (battery acid levels) due to **Acid Mine Drainage (AMD)**

**Deforestation:** Mining areas have been stripped of tree cover; the Meghalaya forest cover loss is among the highest in the Northeast

**Aquifer contamination:** Mining below the water table has contaminated groundwater sources used by local communities

## RESCUE CAPACITY AND NDRF

The **NDRF (National Disaster Response Force)** — constituted under the **Disaster Management Act, 2005** — is the primary agency deployed in mining rescue operations. Its limitations in confined-space, flooded-mine rescue — particularly when shafts are only rat-hole-width — were graphically demonstrated in 2018 when Navy divers and international teams had to be called in.

The recurring pattern of disaster followed by inadequate rescue raises the question of whether India needs dedicated **Mine Rescue Teams** in coal-producing states, analogous to systems in Chile (which successfully rescued 33 trapped miners in 2010) or the US Mine Safety and Health Administration (MSHA) framework.

## UPSC RELEVANCE

*Rat-hole mining (definition, side-cutting vs. box-cut), NGT ban (April 2014), Meghalaya Sixth Schedule autonomous district councils (Khasi/Garo/Jaintia Hills ADC), NDRF mandate (Disaster Management Act 2005), Ksan mine flooding (December 2018), Mines Act 1952, MMDR Act 1957, Acid Mine Drainage, Lukha River (Jaintia Hills).*

*Mining governance; environmental regulations; illegal mining; disaster management and rescue capacity.*

**GS-2:** *Sixth Schedule and tribal rights; Centre-State tensions on resource governance; NGT's powers and enforcement limitations.* **GS-1:** *Northeast India — tribal land systems, customary rights.*

## ★ FACTS CORNER — KNOWLEDGEPEDIA

### RAT-HOLE MINING:

Method: Narrow tunnels (~1 person wide) dug into hillsides/riverbeds to extract coal

Types: **Side-cutting** (horizontal, into hillside) and **Box-cut** (vertical pit + horizontal tunnels)

Location: Primarily **Jaintia Hills, East Khasi Hills, Garo Hills** — Meghalaya

Hazards: Cave-ins, flooding, methane explosions, suffocation; no ventilation/support

### NGT BAN:

Issued: **April 2014** by National Green Tribunal

Grounds: No mining leases, no env. clearances, child labour, zero safety standards

Status: Upheld by Supreme Court; enforcement minimal due to Sixth Schedule complexity

### KSAN MINE DISASTER (2018):

Date: **December 2018**; Location: East Jaintia Hills, Meghalaya

Miners trapped: **15**; Rescue: 140+ days; Outcome: All 15 confirmed dead

Involved: NDRF, Navy divers, international teams

### ENVIRONMENTAL IMPACT:

**Acid Mine Drainage (AMD):** Coal leaches sulfuric acid; rivers like **Lukha River** have pH as low as 2–4

Deforestation and aquifer contamination in mining areas

### LEGAL FRAMEWORK:

**MMDR Act 1957:** Requires mining leases + central clearances

**Mines Act 1952:** Safety standards for mines

**Environment Protection Act 1986:** Environmental clearance mandatory

**Sixth Schedule (Constitution):** Autonomous District Councils in NE India have powers over tribal land

### NDRF:

Constituted under: **Disaster Management Act, 2005** (Section 44-45)

Parent Ministry: **Ministry of Home Affairs**

16 battalions nationwide

### MEGHALAYA DISTRICT COUNCILS (SIXTH SCHEDULE):

**Khasi Hills ADC** (Shillong region)

**Garo Hills ADC** (western Meghalaya)

**Jaintia Hills ADC** (eastern coal belt)

### OTHER RELEVANT FACTS:

Meghalaya coal type: Sub-bituminous; high sulfur content

Coal production: Meghalaya contributes a small fraction of India's ~700 MT annual coal production

India's Coal Ministry: Separate from Mines Ministry (MMDR covers non-coal; Coal Mines Act 1973 covers coal)

Sources: NewsOnAir — All India Radio, Drishti IAS

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