6. SC's Redefinition of The Aravalli Range – Polity

Recently, the Centre denied altering the Aravalli Hills definition, citing a Supreme Court–mandated freeze on new mining leases and a court-approved framework ensuring stronger ecological protection until a comprehensive management plan is finalised.

1. Supreme Court Judgment (20 November 2025) - Regulatory Reset for the Aravalli's

In a landmark environmental governance intervention, the Supreme Court of India prioritised ecological preservation over extractive economic activity in India's oldest mountain system.

Core Directives

Complete Freeze on Mining Leases - No grant or renewal of mining leases across Rajasthan, Haryana, Gujarat, and Delhi until a scientific framework is notified.

Objective - halt irreversible landscape loss pending evidence-based regulation.

Existing Leases - Pre-existing valid leases may continue only if fully compliant with -

1. Environmental Clearance (EC)
2. Forest Conservation laws
3. Pollution control norms

Non-compliant operations face immediate closure.

Uniform Aravalli Definition

1. **Aravalli hill** - Landform with ≥100 metres elevation above local relief.
2. **Aravalli range** - Two or more such hills within 500 metres of each other.
3. Aim - prevent "definition shopping" by States to bypass environmental safeguards.

Management Plan for Sustainable Mining (MPSM) - To be prepared by Ministry of Environment, Forest and Climate Change (MoEFCC) through Indian Council of Forestry Research and Education (ICFRE). No new approvals until MPSM is finalised and notified.

2. Historical Context - Mining, Urbanisation, and Judicial Pushback

Ancient to Modern Exploitation - Mining dates back to Khetri copper mines (5th century BCE). Degradation accelerated during 1960s–80s NCR urban expansion, driven by construction demand.

Judicial Timeline

1992 - MoEFCC restricted mining in Alwar and Gurugram, leaving Faridabad exposed.

1990s - "Hill homes" monetisation intensified real estate pressure.

2009 - Supreme Court imposed a blanket mining ban in Faridabad, Gurugram, and Mewat, asserting *"Save the hill, ignore the definition."*

2018 - Assessment revealed 31 Aravalli hills vanished in Rajasthan due to illegal mining.

3. About the Aravalli Range - Geological and Geographical Profile

Geological Antiquity - Among the oldest fold mountain systems on Earth. Formed during the Proterozoic era, nearly 3.2 billion years ago. Represents one of the earliest stable landmasses of the Indian subcontinent.

Extent and Orientation

Length - ~670 km

Orientation - North-East to South-West

Origin - Near Himmatnagar (Gujarat)

Terminus - Delhi Ridge

Physiographic Features

Southern Aravallis - Steep, rugged, forested (Mount Abu).

Northern Aravallis - Low rocky ridges, scrub vegetation.

Highest Peak - Guru Shikhar (1,722 m), Mount Abu.

Hydrology - Source region of Luni, Sabarmati, Banas, Sakhi, Chambal. Fractured quartzite and marble formations allow high infiltration.

4. Ecological Significance - The Aravalli "Kavach" of North India

Barrier Against Desertification & Pollution - Acts as a natural wall against eastward expansion of the Thar Desert. Influences wind circulation and dust movement.

Forest Survey of India (FSI) studies show -

1. Gaps in the range allow dust storms.
2. PM2.5 and PM10 in Delhi-NCR rise 4–6 times during such events.

Hydrological Lifeline

Central Ground Water Board (CGWB) data - Aravallis recharge 20–30% of groundwater in NCR. Prevents Arabian Sea monsoon moisture from bypassing Rajasthan.

Biodiversity Reservoir - Hosts 22 wildlife sanctuaries and 4 tiger reserves. Acts as a corridor for Indian Leopard, Striped Hyena, connecting Sariska–Ranthambore landscapes.

Climate Regulation - Functions as a regional carbon sink. Moderates temperature, traps dust, and supports India's Paris Agreement commitments.

5. Key Concerns and Controversies

The "100-Metre" Definition Debate –

Environmental groups warn - Nearly 90% of hillocks (≈1.6 lakh in Rajasthan) may fall outside protection.

FSI recommendation - Use slope-based criterion (>3°) instead of height alone.

Ecological risk - Fragmentation of lower ridges → dust intrusion → air quality collapse.

Governance and Political Dimension

Union Environment Ministry (Dec 2025) - Claimed ~90% of Aravallis remain protected.

Critics argue - Height-based definition masks enforcement failures, not ecological realities.

Mining vs Economy

1. Legal mining occupies only 0.19% of Aravalli area.
2. Contribution to Rajasthan's GSDP - 2–3%.
3. Illegal mining in Haryana exceeds ₹1,000 crore annually.
4. Indicates degradation is driven by regulatory capture, not development necessity.

Social and Human Costs

1. Widespread silicosis among informal mining workers.
2. Displacement of Bhil, Meena, and Meo Muslim communities.
3. Raises Article 21 concerns (Right to Life, Health, Dignity).

6. India's Protective and Restorative Initiatives

Judicial & Policy Instruments - Supreme Court applied the Precautionary Principle -

1. Preventive action even without full scientific certainty.
2. Burden of proof on the developer.

Management Plan for Sustainable Mining (MPSM)

Demarcation of - Inviolate Zones (forests, water bodies, tiger corridors).

Based on - Cumulative Impact Assessment, Carrying Capacity Analysis

Oversight by Central Empowered Committee (CEC).

Aravalli Green Wall Project (2025)

Inspired by Africa's Great Green Wall.

5 km-wide green buffers across 1,400 km from Gujarat to Delhi.

Focus - land restoration, desertification control.

Technology-Led Governance

ISRO Bhuvan platform - Satellite-based detection of illegal mining.

AI-enabled drones - Night surveillance and change detection.

Biodiversity Parks (Delhi, Gurugram) - Conversion of abandoned mines into native ecosystems.

Economic Transition Measures

1. Promotion of Manufactured Sand (M-Sand).
2. Encouragement of geopolymer concrete using fly ash.
3. Reduced pressure on fragile quartzite formations.

7. Way Forward - From Litigation to Landscape Governance

Legal and Technical Strengthening

Supplement height criterion with -

1. Slope (>3°)
2. Vegetation cover
3. Landscape continuity (GIS-based).

Notify MPSM urgently with strict No-Go zones.

Restoration and Connectivity - Shift from plantations to rewilding with native species (Dhau, Khejri, Babool). Rebuild wildlife corridors (Sariska–Ranthambore) using overpasses/underpasses.

Water Security - Declare fractured quartzite zones as Critical Groundwater Recharge Zones. Revive Johads and check dams.

Community-Centric Conservation - Payment for ecosystem services. Health safeguards for mining-affected workers. Align conservation with Article 21 rights.

Conclusion

The Aravallis are not expendable hillocks but North India's ecological insurance policy. The Supreme Court's 2025 mining freeze and standardised definition represent a crucial inflection point. However, only a science-based, landscape-level, people-centred governance framework—anchored in the Precautionary Principle—can ensure that this ancient ecological "Kavach" survives for future generations.

Source - https -//www.theweek.in/news/india/2025/12/21/why-the-scs-redefinition-of-the-aravalli-hills-is-a-threat-to-life-in-north-india.html