

LLRJ

LEX LUMEN RESEARCH JOURNAL

VOLUME 2 - ISSUE 2
2025

EDITOR-IN-CHIEF: DR. RAZIT SHARMA,
PUBLISHER: MRS. RACHANA

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It has been accepted for inclusion in the Journal after Due-review process.

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THE ARAVALLI HILLS AND THE QUESTION OF DEFINITION: A LEGAL AND ENVIRONMENTAL ANALYSIS

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ABSTRACT

The Aravalli Hills constitute one of the most ecologically significant yet legally vulnerable landforms in India. Despite their crucial role in preventing desertification, supporting biodiversity, regulating climate, and recharging groundwater, the absence of a uniform legal definition has historically undermined effective environmental protection. This paper critically examines the Ministry of Environment, Forest and Climate Change's (MoEFCC) 2025 notification defining the Aravalli Hills based on a 100-metre elevation criterion, as subsequently acknowledged by the Supreme Court of India. Through an analysis of constitutional provisions, environmental statutes, and landmark judicial precedents, the paper evaluates the legal validity and environmental implications of adopting a height-based definition. It argues that while administrative clarity has been achieved, the definition remains ecologically reductive and risks excluding environmentally sensitive foothills and transitional zones from legal protection. The study highlights concerns relating to mining, groundwater depletion, climate regulation, and desertification, and questions whether bureaucratic convenience has been prioritised over ecological integrity. The paper concludes by advocating

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for a holistic, ecosystem-based legal framework that aligns environmental realities with constitutional mandates and sustainable development principles.

KEYWORDS: Aravalli Hills, Environmental Protection, Mining Regulation, Supreme Court of India, Sustainable Development, MoEFCC, Public Trust Doctrine

INTRODUCTION:

Though often described as one of the oldest mountain ranges in the world, the Aravalli Hills are shockingly sensitive in political and legislative discussions². Essential for maintaining the ecological balance of northern India, the Aravalli's run around 692 km across Delhi, Haryana, Rajasthan, and Gujarat³. They help to halt the encroachment of the Thar desert, assist biodiversity, control the local environment, and recharge groundwater⁴.

Notwithstanding its importance, the Aravalli area has been under ongoing environmental degradation, mostly brought on by mining, building projects, and weak enforcement of environmental regulations⁵. One of the main causes of this problem is the lack of a clear and consistent legal definition of what the Aravalli Hills really are.

Approving a definition proposed by the Ministry of Environment, Forest and Climate Change (MoEFCC) in November 2025, the Supreme Court of India specified the Aravalli hills using an elevation restriction of 100 metres over their surroundings⁶. Although this action was supposed to fix past confusion, it had raised serious

² Geological Survey of India, *Geological History of the Aravalli Range*; MoEFCC background notes on Aravalli ecology.

³ MoEFCC, *Aravalli Landscape Conservation Reports*; CSE, *Aravallis: A Green Wall Project* (2023).

⁴ Centre for Science and Environment (CSE), *Role of Aravallis in Climate and Groundwater Regulation*.

⁵ *M.C. Mehta v. Union of India*, (2002) 4 SCC 356; CPCB-MoEFCC joint inspection reports on Aravalli mining.

⁶ *In Re: Issues relating to the Definition of Aravalli Hills and Ranges*, Supreme Court Order dated 20 Nov 2025.

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questions about legal legitimacy, environmental conservation, and the future of the Aravalli ecosystem.

This study aims to carefully consider the MoEFCC's definition of the Aravalli Hills, the reason behind this definition, its constitutional and legal basis, the role of the Supreme Court, and potential environmental consequences, especially with regard to mining, construction, climate, and water.

WHY DEFINING THE ARAVALLIS BECAME NECESSARY:

For many years, States and law enforcement agencies have misinterpreted the lack of a uniform definition for the Aravalli Hills. The Delhi, Rajasthan, and Haryana approaches used to identify the Aravalli territory differed. Some areas preferred a slant; others depended on buffer zones or financial records. This difference allowed criminals to more readily evade responsibility⁷.

Following the early 2000s Supreme Court ruling prohibiting mining in the Aravalli region, stone crushing and illicit mining activities grew⁸. Most operators argued that the mining site was not strictly speaking situated inside the Aravalli hills since the phrase lacked a precise meaning. As a result, the speaking was situated inside the Aravalli Hills since the phrase lacked a precise meaning. As a result, the environmental laws set by the Environment (Protection) Act, 1986, were sometimes disregarded⁹.

The Supreme Court has frequently expressed its concerns about this uncertainty, as in the case of *M.C. Mehta vs. Union of India*, when it observed that environmental

⁷ FSI reports; State-level Aravalli notifications (Haryana & Rajasthan).

⁸ *M.C. Mehta v. Union of India*, (2002) 4 SCC 356.

⁹ Environment (Protection) Act, 1986; MoEFCC compliance affidavits before Supreme Court.

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protection cannot be effective when the very object of protection is unclear¹⁰. Consequently, the need of a constant and uniform definition was unavoidable.

In 2024, the court instructed the MoEFCC to form an expert committee including delegates from the Ministry, the Forest Survey of India (FSI), and the Geological Survey of India (GSI) so as to provide a usable definition. This finally produced the 100-meter height-based definition¹¹.

UNDERSTANDING THE MOEFCC'S DEFINITION:

Under the MoEFCC notice, any landform in the specified Aravalli districts rising at least 100 meters above its lowest neighbouring contour is regarded as an Aravalli Hill¹². Furthermore, seen as the Aravalli range are clusters of such within 500 meters of one another.

Asserting that elevation is a measurable and objective criterion that can be verified using satellite imagery, GIS mapping, and modern monitoring tools like drones, the Ministry justified this strategy¹³. From a managerial perspective, this definition appears clear and enforceable.

This approach, on the other hand, raises questions as well. The Aravallis aren't a high-altitude mountain range. They are a low-relief range whose ecological worth is not only determined by elevation¹⁴. For biodiversity support, groundwater recharge, and climate regulation, foothills, slight slopes, and transitional regions are all equally crucial.

¹⁰ *M.C. Mehta v. Union of India*, SCC observations on definitional ambiguity.

¹¹ Supreme Court Order dated May 2024 constituting MoEFCC-FSI-GSI Committee.

¹² MoEFCC Notification on Definition of Aravalli Hills, 2025.

¹³ Forest Survey of India (FSI), GIS & Remote Sensing Methodology Reports.

¹⁴ CSE, *Ecological Character of Low-Relief Mountain Systems*.

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By excluding regions below the 100-meter cutoff, the definition runs the risk of leaving behind sizable portions of ecologically sensitive land. Many environmental experts believe this could open the path for more mining and building activity in areas of environmental significance, but not under legal protection¹⁵.

Though it boils a very complex environment down to a single numerical value, the definition, to put it simply, may provide paper clarity.

LEGAL VALIDITY OF THE DEFINITION

The legal justification for the MoEFCC's right to create such a definition comes from Section 3 of the Environment (Protection) Act, 1986, which gives the central Government the power to take all required actions to preserve and improve the environment¹⁶. Acceptance of the definition by the Supreme Court strengthens its authority under Article 141 of the Constitution¹⁷.

The court's approach is consistent with accepted environmental law doctrines as well. The Supreme Court, in *Vellore Citizens' Welfare Forum vs. Union of India*, recognised the precautionary principle and ruled that even without scientific certainty, environmental initiatives have to precede to stop harm¹⁸. Similarly, Indian law has constantly followed the idea of sustainable development, as evidenced in *Narmada Bachao Andolan vs. Union of India*¹⁹.

Legal validity of the definition, though, is debatable. Executive action is defined as the term without any congressional meddling or parliamentary debate. Given the far-reaching environmental impacts, this raises domestic accountability issues.

¹⁵ Environmentalists' submissions & Amicus Curiae reports in Aravalli case.

¹⁶ Environment (Protection) Act, 1986, s.3.

¹⁷ Constitution of India, Article 141.

¹⁸ *Vellore Citizens' Welfare Forum v. Union of India*, (1996) 5 SCC 647.

¹⁹ *Narmada Bachao Andolan v. Union of India*, (2000) 10 SCC 664.

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Furthermore, only including height might run counter to the public trust doctrine, which was affirmed in *M.C. Mehta vs. Kamal Nath*²⁰. This hypothesis asserts that the State possesses natural resources in trust for the people and that they cannot be regarded merely as economic assets.

While the definition may be legally binding, I believe it is biologically insensitive. Rather than the other way around, environmental facts should drive revisions in the law.

ROLE OF THE SUPREME COURT: A SHIFT IN ENVIRONMENTAL JURISPRUDENCE?

The Supreme Court of India has been rather engaged in environmental protection in the past. In cases such *T. N. Godavarman Thirumulpad v. Union of India*, the Supreme Court extended the definition of forest and set strict criteria for preservation²¹.

In the Aravalli case, though, the Court adopted a more conservative position. It accepted the definition of the MoEFCC, stopped temporarily new mining permits, and requested the development of a Management Strategy for Sustainable Mining (MPSM)²².

The Court justified this approach by suggesting that illegal mining groups might spread as a result of a total ban. Though appearing reasonable, this line of argument also shows a shift from the Court's earlier activist position.

The Court may have passed up an opportunity to enhance environmental safeguards by giving undue significance to executive experience in one of the most ecologically sensitive regions of northern India.

²⁰ *M.C. Mehta v. Kamal Nath*, (1997) 1 SCC 388.

²¹ *T.N. Godavarman Thirumulpad v. Union of India*, (1997) 2 SCC 267.

²² Supreme Court Order dated 20 Nov 2025; MoEFCC-ICFRE MPSM Draft.

ENVIRONMENTAL IMPACT OF THE DEFINITION

- **Development and mining**

Mining has already taken a severe toll on the Aravalli region. A primary cause of Delhi-NCR's air pollution is the dust generated by stone crushing equipment²³. Blasting destroys plant cover and damages hill structures. Construction of homes and farms as well as real estate developments, has infiltrated corridors for wildlife and woodland.

The new definition could exclude areas below 100 meters from legal protection, therefore increasing exploitation.

- **Sinking of Underground Water**

The Aravallis greatly influence groundwater recharge. According to the Centre for Science and Environment (CSE), one hectare of forested Aravalli land may replenish millions of litres of groundwater annually²⁴. Mining impedes this process by obstructing natural rock fractures and altering the subsurface geology.

Extreme depletion of groundwater has already caused borewells in two cities, Faridabad and Gurugram, to reach depths of 400 to 500 feet. The conditions might get worse if the foothills continue to degrade²⁵.

- **Climate and Desertification**

Regarding climate, the Aravallis help to control temperature and act as a buffer against desertification. Their degradation contributes to the more frequent dust storms, increasing temperatures, and sporadic rainfall affecting North India²⁶.

²³ CPCB Reports on Stone Crushing Units in Aravalli Region.

²⁴ CSE, *Groundwater Recharge Role of Aravalli Forests*.

²⁵ Central Ground Water Board (CGWB) Reports on NCR Region.

²⁶ IPCC Regional Climate Assessment Reports; MoEFCC Climate Submissions.

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Often missed in Environmental Impact Assessments for specific projects are these cumulative effects.

SIGNIFICANT INSIGHT: PROTECTING BECOMES MORE OF A MATTER OF CONVENIENCE.

The MoEFCC's description implies that bureaucratic convenience takes priority over environmental integrity. Although clarity is important, it shouldn't come at the cost of omitting major environmentally sensitive areas from protection.

In such a fragile setting, the idea of sustainable mining is, in and of itself, questionable. Actually, economic considerations sometimes take precedence over environmental concerns, and enforcement initiatives are useless. Excluding intermediate zones could worsen rather than halt environmental damage.

A more effective approach would be admitting the Aravallis as a Critical Ecological Zone supported by legislation, ongoing environmental impact evaluations, and active community participation.

CONCLUSION

The Aravalli Hills controversy demonstrates a growing tendency to prioritise administrative convenience over ecological complexity. Environmental governance cannot be reduced to numerical thresholds without accounting for interconnected ecosystems. If legal protection continues to focus only on definitional clarity rather than ecological function, the Aravallis risk becoming legally protected in theory but environmentally degraded in reality.

As a vital but inadequate step in environmental control, the Supreme Court acknowledged the MoEFCC's 100-meter definition of the Aravalli Hills²⁷. Though it

²⁷ *In Re: Aravalli Hills Definition Case*, Supreme Court Order, 2025.

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does so by limiting the scope of protection, it lowers administrative ambiguity. The Aravallis' height is not what makes them mountains. They offer millions of people biodiversity, groundwater security, and climate stability by means of a robust ecosystem. Legal interpretations have to reflect this reality.

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