
Commentary

Governance, Regulation, and The Aravalli Landscape: A Policy Dilemma ¹

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The Aravalli range, considered as one of the world's oldest fold mountain systems, plays an important role in maintaining environmental balance in northern India. It prevents eastward desertification, acts as a groundwater recharge zone, regulates dust storms and moderates temperature extremes. It also acts as a biodiversity hub and serves as a home to tribal and pastoral communities. The recent SC acceptance of the definition of the Aravalli, provided by the Ministry of Environment Forest and Climate Change, has sparked a fresh debate between administrative clarity and ecological complexity. (Supreme Court of India, 2025; Ministry of Environment, Forest and Climate Change [MoEFCC], 2025). Using qualitative analysis of policy documents environmental reports and judicial interventions the paper intends to assess how effective the regulatory framework is. The findings indicate that weak environmental regulations and competing interests have resulted in considerable use of resources. It also concludes that sustainable development strategies, stronger environmental governance and greater public awareness can help preserve the Aravalli range while allowing for development.

Keywords: aravalli debate, development v/s environment, environmental sustainability, environmental governance in India

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The Aravalli range, also called the “green lungs”, has stood the test of time and contributed as an ecological hub maintaining environmental balance in northern India. The range stretches across 37 districts of the states of Gujarat, Rajasthan, Haryana, and Delhi (NCR), acting as a natural barrier against eastward desertification, regulating the regional climate. It also acts as an aquifer contributing to local rivers like Chambal, Luni and Sabarmati. It also acts as a green buffer for the increasing urbanizing regions. According to a report by the MoEFCC, despite such ecological importance, the Aravalli range has experienced significant environmental stress over the past few years. ([MoEFCC], 2025).

Expansion of activities like mining, urbanization, infrastructure development related activities led to extensive deforestation and biodiversity loss in the region. Illegal mining, poor enforcement of environmental governance, expansion of urban centres, has further intensified the issue. This has raised the debate between development priorities and the need for the environmental protection. In this context, this paper seeks to examine the ongoing debate of development v/s environment in the region. The paper aims to scrutinize the existing policy frameworks, governance mechanisms and judicial interventions in addressing the environmental challenges related to the region. Additionally, it also examines the consequences of environmental degradation in the region. By highlighting the gaps in implementation and the competing interests shaping environmental outcomes, this study argues for a more balanced and sustainable approach to development. Protecting the Aravallis is crucial for both conservation and ensuring long term ecological security in the region.

Literature Review

The Aravalli debate entails the ongoing conflict between environmental enthusiasts on the one hand and the supreme court backed government of India’s attempt of defining the Aravalli mountain ranges on the other hand, so as to have a clear-cut distinction on which places to use for developmental activities and which places to leave. Supreme courts acceptance of this uniform central definition for the purpose of administrative efficiency has invited criticisms and large-scale protests. In a show named Debate with Arnab, in republic tv it was discussed at length. According to the show the govt seems

to have contradicted itself by limiting the area by a definition which is only protecting 8.7% of the area. According to this show the new definition would leave out 90% of the ranges unprotected and therefore subjected to extensive illegal mining, and other developmental activities that would cost us our ecological stability (Republic World, 2025). This paper aims to do a qualitative study and analyse policy reviews, judicial interpretations, newspaper articles and existing sources to find out whether this definition would be beneficial and if not, how should the government tackle it in order to allow sustainable development while preserving the ranges.

The Aravalli's preserve the ecology in various ways the first being a barrier to eastward desertification, and protecting the states on the windward side of the mountains from becoming arid. Secondly it acts as a climate regulator and helps in maintaining the AQI of several states. Thirdly the low-lying ridges act as aquifers draining local rivers. The forest cover acts as a living ecosystem and is home to several animals and tribal and pastoral communities. Existing literature states that degradation of the Aravalli poses a serious threat to biodiversity, groundwater availability and air quality affecting both ecological balance and human beings. Scholars have identified mining and urbanization as the leading cause of degradation in the area, both legal and illegal mining has led to strip the landscape of its natural sources. Additionally, rapid urbanization in the NCR area has intensified pressures in the region (Kishwar & Nahar, 2026). Mining has significantly changed the geomorphology of the region subjecting the region to long term environmental implications. Urbanization has led to extensive land use and loss of forest cover thereby disrupting the ecological balance of the region. Despite regulatory frameworks lack of efficient ground level implementations and the continued existence of illegal mining highlights critical gaps in enforcement and proper monitoring mechanisms. According to the Republic tv this new definition has opened up 90% of the hills to illegal mining. Several studies have analysed the role of environmental governance and policy frameworks in shaping the outcomes of the Aravalli region (Republic World, 2025). While environmental laws and policy frameworks have tried to regulate mining activities and protect the forest areas, their effectiveness is undermined by poor enforcement, institutional weakness and competing economic interests. Existing

literature suggests that lack of proper environmental governance in India has led to such extensive environmental degradation. Historical experiences from other parts of India, portray the environmental consequences of the development projects undertaken without adequate ecological safeguards. One such example is Jharia Coalfields in Jharkhand where decades of coal mining have led to underground coal fires, land subsidence, air pollution and the displacement of local communities (Central Mine Planning and Design Institute, 2020; Indian School of Mines, 2018). Even though the coal extraction has led to significant economic and industrial growth, the environmental impacts keep on affecting the region, displaying the long-term consequences of unstable resource exploitation.

A similar example is that of the Tehri Dam Project of Uttarakhand. It was contracted to generate hydroelectricity and provide irrigation facilities, instead, it resulted in the submergence of the forested areas, and agricultural land, displacement of the local inhabitants and concerns regarding ecological instability in the fragile Himalayan ecosystem. This project too had sparked considerable debate among environmentalists, and policy makers alike regarding the balance between development objectives and environment protection. The above cases demonstrate that development initiatives can have serious environmental consequences, if environmental concerns are not adequately integrated into the planning and implementation process. These cases studies serve as important models for understanding the ongoing Aravalli debate.

Despite focusing on individual aspects like mining, urbanization, lack of environmental governance, there is a lack of integrated analysis which connects these dimensions under a broader framework of sustainable development. This study seeks to bridge that gap by analysing the interrelationship between environmental degradation, governance challenges and development in the Aravalli region.

Methodology

This section employs a comprehensive approach to investigating anthropogenic determinants and ecological resilience in the ranges. The methodology involves a combination of Policy review, analysis of available sources and data and empirical

observation to provide a holistic understanding of the interplay between human activities and ecological systems in the Aravalli ranges. This study examines government reports, academic articles, public domain legal and policy documents such as supreme court orders, PIB notes etc. By critically evaluating existing literature and policy frameworks. This paper seeks to provide a thorough understanding of the on-going debate between developments and environmental sustainability in the region.

Analysis and discussions

Researchers have repeatedly pointed out the crucial role, the Aravalli's play, in maintaining environmental stability in the northern India. Also known as the green lungs of North India in maintaining the AQI, given the already deteriorating air quality in Delhi NCR (which sometimes goes above 700 where 500 is considered critical by the government), it's essential that measures are taken to preserve this ecological hub. It also prevents eastward expansion of the Thar Desert, and contribute significantly to groundwater recharge and biodiversity conservation. However, increasing anthropogenic factors have disrupted this fragile ecosystem. The key factor for environmental degradation in the region is mining both legal and illegal. It has led to large scale deforestation, soil erosion, and habitat loss and has not only altered the geographical landscape but also has reduced the ecological resilience of the region. The government through a report titled "*Detailed Action plan, Aravalli landscape Restoration (Aravalli Green Wall)*" and published by the Ministry of Environment, Forest and Climate Change (MoEFCC) had highlighted the environmental vulnerability as well as importance of the area, prior to this judgement (MoEFCC, 2025). Another important factor contributing to environmental degradation is Urbanization. Rapid Industrialization, expansion of cities, especially around Gurugram, has led to significant land use changes. Forest areas have increasingly been encroached upon for real estate and infrastructure development resulting in habitat fragmentation and weakening the environmental balance. Such unplanned growth reflects how economic growth is often prioritized over ecological sustainability. The environmental degradation of the range is not only an ecological concern, but also a matter that directly affects human well-being. As we know, the range supports local communities through groundwater recharge, regulation

of air quality, and maintaining ecological conditions necessary for sustainable livelihoods. Environmental degradation has led to the depletion of forest cover, the consequences of which are faced first by those who depend on natural resources the most. Reduced water availability, poor air quality, and loss of ecological stability can greatly impact the lives of the surrounding population. In this sense, the debate extends beyond, just environmental concerns and enters the realm of human rights, specifically the right to live in a healthy and sustainable environment. Therefore, protecting the ecologically sensitive landscape is not merely an obligation to protect the environment, but also a responsibility towards present and future generations depending on these natural systems. The role of governance and policy implementation plays a central role in order to understand the Aravalli debate. Despite various environmental laws and regulatory frameworks already in existence. Their effectiveness remains limited due to weak enforcement, administrative loopholes and conflicting interests between development and conservation. Judicial interventions like supreme court orders attempted to curb illegal mining in order to protect the region. However, these measures have had little to no success due to implementational challenges and effective monitoring. The most important question pertaining this entire debate is, can an entire mountain range stretching over 670kms covering 37 districts across four states, having huge environmental importance be limited to a definition for administrative efficiency? The Aravalli's plays a critical role in the area, hence, limiting it to a short definition might lead to making a large portion of the range vulnerable that does not meet the 100 m elevation criteria. The low-lying ridges of the Aravalli acts as aquifers often meeting water shortages of the nearby areas. Such a definition would lead to drought like conditions in the near future. According to an article from Down to Earth, this new definition will exclude 90% of the ranges from protection (Ahluwalia & Shahabuddin, 2025). Against such allegations, the PIB has made an attempt to clarify the committees and governments stance, by stating the definition to be scientific, transparent and beneficial for ecological conservation. (Press Information Bureau, 2025).

Findings

The study reveals that the region is facing severe ecological stress due to a combined impact of developmental activities (both legal and illegal) and ineffective policy implementation. Despite regulatory frameworks and judicial interpretations, their impact has been limited due to ineffective implementation, lack of strict monitoring and competing economic interests. The findings also show that environmental concerns have very often been subordinated to developmental priorities leading to unsustainable development and exploitation of natural resources. Adding to that is gap in governance and lack of coordinated stakeholders which has further accelerated the situation. This study highlights the urgent need for a more consolidated and sustainable approach to look after the Aravalli ranges.

Conclusion

Despite holding immense ecological significance, the Aravalli's continues to face severe threats from anthropological activities and governance failure. This paper has pointed out the complex interrelationship between development and ecological conservation, focusing on how unchecked mining, increased urbanization, and weak governance has led to the degradation of this crucial ecosystem. While efforts through legal and policy interventions have been made, their limited effectiveness highlights the deeper structure challenges in the environmental governance. The findings stress that protecting the ranges is not only essential for biodiversity preservation and maintenance of ecological balance but also for long term climate resilience and sustainable development. A shift towards a more responsible development is necessary to address the ongoing crisis Without immediate and sustained action the degradation in the region could have far reaching implications.

Recommendations

To address the present challenges pertaining to that region, enforcement of existing environmental laws and regulations is crucial. Authorities must ensure strict monitoring of mining activities and take strict actions against illegal operations. Sustainable Planning of land use should be focused on, to control urban expansion and

encroachment into ecologically sensitive areas. Along with it, immediate identification of illegal mining should be implemented. Upon identification, such mining operations should be shut down along with stricter monitoring and licensing. Eco friendly techniques along with environmental safeguards should be made mandatory where mining is permitted.

Critical areas (Ecologically sensitive zones) of the Aravalli range should be mapped and designated as protected zones in order to stop commercial exploitation. Large scale reforestation and land restoration should be undertaken. Better coordination between central and state governments along with local authorities is necessary for effective environmental governance. Local communities should be actively involved in conservation through awareness programs and participatory governance. Satellite imaging, GIS mapping, digital surveillance should be implemented to track land use and illegal activities. Public awareness should be conducted to educate the people about the importance of such environmentally critical areas in this case the Aravalli's.

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