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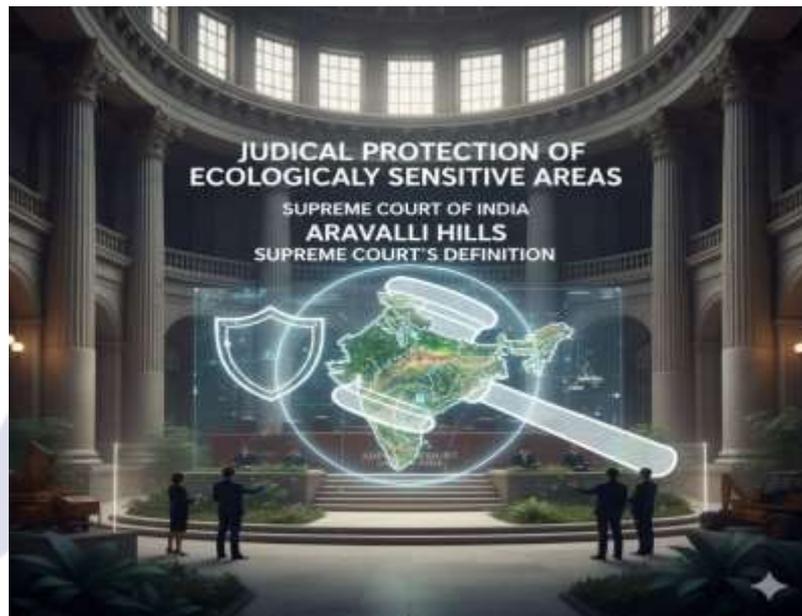
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JUDICIAL PROTECTION OF ECOLOGICALLY SENSITIVE AREAS: SUPREME COURT'S DEFINITION OF ARAVALLI HILLS

AUTHORED BY - DIPTI SINGH

Student LL.B. (Hons.)

Faculty of Law, University of Lucknow



ABSTRACT

Environmental degradation and unchecked developmental activities pose a serious threat to ecologically sensitive areas, necessitating robust legal and judicial intervention. In India, the judiciary particularly the Supreme Court has played a pivotal role in expanding the scope of environmental protection through progressive interpretation of constitutional provisions, statutory mandates, and international environmental principles. Among the most significant judicial interventions in this regard is the protection accorded to the Aravalli Hills, one of the oldest mountain ranges in the world, which performs a critical ecological function in preventing desertification, maintaining groundwater levels, and sustaining biodiversity in the National Capital Region and adjoining areas.

This research paper examines the role of judicial protection in safeguarding ecologically sensitive areas, with a specific focus on the Supreme Court's evolving definition and interpretation of the Aravalli Hills. The paper analyses how the Supreme Court has gone beyond conventional geographical and administrative definitions to adopt an ecological and functional understanding of the Aravallis. Through landmark judgments, the Court has treated the Aravalli range not merely as a physical landform but as an ecological entity requiring comprehensive protection from mining, deforestation, and unregulated construction activities. The study explores the jurisprudential foundations of the Supreme Court's approach, particularly its reliance on Articles 21, 48A, and 51A(g) of the Constitution of India, as well as principles such as sustainable development, precautionary principle, and public trust doctrine. By interpreting the right to life to include the right to a healthy environment, the Court has effectively elevated environmental protection to the status of a fundamental right. This constitutional grounding has enabled the judiciary to issue far-reaching directions restricting mining and construction activities in the Aravalli region, even in the absence of clear legislative demarcation.

A key focus of the paper is the Supreme Court's response to ambiguity surrounding the definition of the Aravalli Hills. In several cases, conflicting interpretations by state governments and regulatory authorities resulted in dilution of environmental safeguards. The Court intervened to clarify that ecological sensitivity, rather than revenue records or administrative classifications, must guide environmental protection. This judicial stance has had significant implications for environmental governance, federal relations, and land-use planning.

Methodologically, the paper adopts a doctrinal and analytical approach, relying on constitutional provisions, environmental statutes, judicial precedents, and expert committee reports. It critically evaluates whether judicial intervention has effectively filled legislative and executive gaps or whether it has led to concerns of judicial overreach. The paper concludes that while the Supreme Court's proactive role has been instrumental in preserving the Aravalli ecosystem, long-term environmental protection requires coherent legislative frameworks and administrative accountability to complement judicial action.

KEYWORDS: - Ecologically Sensitive Areas; Environmental Jurisprudence; Aravalli Hills; Supreme Court of India; Article 21; Sustainable Development; Precautionary Principle; Public

Trust Doctrine; Environmental Protection; Judicial Activism

INTRODUCTION

The protection of ecologically sensitive areas has emerged as one of the most critical challenges in contemporary environmental governance, particularly in developing countries experiencing rapid urbanisation and industrial expansion. In India, competing demands of economic development, infrastructure growth, and environmental conservation have often resulted in degradation of fragile ecosystems. Against this backdrop, the judiciary especially the Supreme Court of India has assumed a proactive role in safeguarding environmental interests by interpreting constitutional and statutory provisions in an expansive and purposive manner. Judicial intervention has thus become a key mechanism for ensuring environmental protection where legislative clarity and executive enforcement have proved inadequate.

Ecologically sensitive areas are regions that possess unique environmental characteristics and perform essential ecological functions, such as regulating climate, conserving biodiversity, preventing soil erosion, and sustaining water resources. The degradation of such areas has far-reaching consequences, not only for local ecosystems but also for human health and sustainable development. Recognising this interdependence, the Supreme Court has consistently held that environmental protection is integral to the right to life guaranteed under Article 21 of the Constitution of India.¹ This constitutional interpretation has enabled the judiciary to extend protection to vulnerable ecosystems even in the absence of explicit statutory classification.

Among the most prominent examples of judicial protection of ecologically sensitive areas is the Supreme Court's intervention in matters relating to the Aravalli Hills. Stretching across the states of Gujarat, Rajasthan, Haryana, and Delhi, the Aravalli range is one of the oldest geological formations in the world. Ecologically, the Aravallis act as a natural barrier against desertification, play a crucial role in groundwater recharge, and support diverse flora and fauna. Despite their ecological significance, large portions of the Aravalli region have been subjected to extensive mining, deforestation, and real estate development, particularly in Haryana and the National Capital Region.

¹ *Subhash Kumar v. State of Bihar*, (1991) 1 SCC 598.

The legal controversy surrounding the Aravalli Hills stems largely from ambiguity in their definition and classification. State governments and private developers have often relied on revenue records, land-use classifications, and administrative boundaries to exclude large tracts of land from environmental protection norms. Such narrow interpretations have facilitated environmentally destructive activities while formally complying with regulatory requirements. In response, the Supreme Court has repeatedly intervened to assert that environmental protection cannot be constrained by technical or bureaucratic classifications that undermine ecological realities.

The Supreme Court's approach to defining and protecting the Aravalli Hills reflects a broader evolution in Indian environmental jurisprudence. The Court has increasingly adopted an ecological and functional understanding of environmental entities, prioritising environmental impact over formal legal labels. By invoking principles such as sustainable development, the precautionary principle, and the public trust doctrine, the Court has sought to harmonise developmental needs with environmental preservation.² This approach has enabled the judiciary to issue wide-ranging directions, including bans on mining and restrictions on construction activities, aimed at preserving the ecological integrity of the Aravalli range.

This research paper seeks to examine the judicial protection of ecologically sensitive areas through a focused analysis of the Supreme Court's definition and interpretation of the Aravalli Hills. It explores how judicial creativity has been employed to address regulatory gaps and assesses the implications of such intervention for environmental governance, federalism, and separation of powers. By analysing key judgments and judicial reasoning, the study aims to evaluate whether the Supreme Court's proactive stance has strengthened environmental protection or raised concerns of judicial overreach in the absence of comprehensive legislative frameworks.

RESEARCH METHODOLOGY

The present research adopts a doctrinal and analytical methodology to examine the judicial protection of ecologically sensitive areas in India, with specific reference to the Supreme Court's definition and interpretation of the Aravalli Hills. Given that the study primarily concerns constitutional interpretation, statutory application, and judicial reasoning, a

² *Vellore Citizens' Welfare Forum v. Union of India*, (1996) 5 SCC 647.

qualitative legal research approach is most appropriate. The methodology is designed to analyse how judicial intervention has shaped environmental governance in the absence of clear legislative demarcation of ecologically sensitive zones.

The doctrinal method forms the core of this research. It involves a detailed examination of constitutional provisions, particularly Articles 21, 48A, and 51A(g) of the Constitution of India, which collectively establish the foundation for environmental protection. Article 21 has been expansively interpreted by the Supreme Court to include the right to a healthy and pollution-free environment, thereby elevating environmental protection to the status of a fundamental right. Articles 48A and 51A(g), though non-justiciable, have been frequently relied upon by the judiciary to reinforce the constitutional duty of the State and citizens to protect and improve the environment.³

In addition to constitutional analysis, the research examines relevant environmental statutes such as the Environment (Protection) Act, 1986, the Forest (Conservation) Act, 1980, and the Mines and Minerals (Development and Regulation) Act, 1957. These statutes provide the regulatory framework within which judicial intervention has occurred. The study analyses how the Supreme Court has interpreted and supplemented these statutory provisions while addressing environmental degradation in the Aravalli region, particularly in cases involving illegal mining and land-use change.

A significant component of the methodology is the case law analysis. Landmark judgments of the Supreme Court concerning the Aravalli Hills are examined to trace the evolution of judicial reasoning. This includes analysing orders and directions issued in public interest litigations, where the Court has adopted a proactive stance in defining the ecological boundaries of the Aravallis. The research focuses on the reasoning employed by the Court to move beyond administrative classifications and emphasise ecological sensitivity as the primary criterion for protection.

The analytical aspect of the methodology involves critically evaluating the implications of judicial intervention. This includes assessing whether the Supreme Court's expansive interpretation has effectively addressed environmental harm or whether it has resulted in

³ *M.C. Mehta v. Union of India*, (1987) 1 SCC 395.

challenges related to implementation, federal coordination, and administrative compliance. The research also examines critiques of judicial activism in environmental matters, particularly arguments concerning separation of powers and institutional competence.

Secondary sources form an important part of the research methodology. Scholarly articles published in environmental law journals, books on environmental jurisprudence, reports of expert committees, and publications by environmental organisations are utilised to contextualise judicial decisions within broader theoretical and policy debates.⁴ These sources provide insights into international best practices and comparative environmental governance models, which are used to assess the effectiveness of India's judicial approach.

While the research does not involve empirical fieldwork or quantitative analysis, it incorporates a limited comparative perspective by referring to international environmental principles and judicial trends. This enhances the normative evaluation of the Supreme Court's role in protecting ecologically sensitive areas. Overall, the chosen methodology enables a comprehensive and critical examination of the judiciary's contribution to environmental protection, with particular emphasis on the Aravalli Hills.

RESEARCH QUESTIONS

1. What is the constitutional and legal basis for judicial protection of ecologically sensitive areas in India?
2. How has the Supreme Court interpreted and defined the Aravalli Hills for the purpose of environmental protection?
3. To what extent has judicial intervention addressed legislative and administrative gaps in protecting the Aravalli ecosystem?
4. How do principles such as sustainable development, precautionary principle, and public trust doctrine inform the Supreme Court's approach to the Aravalli Hills?
5. Does the Supreme Court's proactive role in defining ecologically sensitive areas strengthen environmental governance or raise concerns of judicial overreach?

⁴ Shyam Divan and Armin Rosencranz, *Environmental Law and Policy in India* (Oxford University Press, 2nd edn, 2001)

HYPOTHESIS

The central hypothesis of this research is that the Supreme Court of India, through its expansive and purposive interpretation of constitutional and environmental law, has played a decisive role in protecting ecologically sensitive areas such as the Aravalli Hills; however, such judicial intervention, while necessary in the absence of effective legislative and administrative action, also raises concerns regarding long-term institutional sustainability and separation of powers. This hypothesis is grounded in the assumption that judicial protection has functioned as a corrective mechanism to address environmental degradation where executive enforcement has been inadequate or inconsistent.

Environmental protection in India has often suffered from regulatory ambiguity, weak implementation, and competing developmental priorities. In the case of the Aravalli Hills, the absence of a clear and uniform statutory definition allowed state authorities and private actors to exploit administrative loopholes to justify mining, deforestation, and construction activities. The hypothesis assumes that judicial intervention became imperative in this context to prevent irreversible ecological damage and to uphold the constitutional mandate of environmental protection. By interpreting Article 21 to include the right to a healthy environment, the Supreme Court provided a robust constitutional foundation for its intervention.

At the same time, the hypothesis acknowledges that judicial protection of ecologically sensitive areas involves complex policy considerations that traditionally fall within the domain of the legislature and executive. The Supreme Court's decision to move beyond revenue records and administrative classifications to define the Aravalli Hills on ecological criteria reflects judicial innovation aimed at safeguarding environmental interests. However, such an approach also risks creating uncertainty in land-use regulation and governance, particularly when judicial directions lack clear implementation mechanisms or coordination with state authorities.

The hypothesis further posits that the Supreme Court's reliance on environmental principles such as sustainable development, the precautionary principle, and the public trust doctrine has strengthened the normative framework of environmental jurisprudence in India. These principles have enabled the Court to justify preventive action in situations where scientific certainty regarding environmental harm is lacking. In the context of the Aravalli Hills, this approach allowed the Court to prioritise ecological preservation over short-term economic gains. Nevertheless, the hypothesis assumes that over-reliance on judicial directives without

corresponding legislative reform may lead to fragmented and ad hoc environmental governance.

Another aspect of the hypothesis concerns the effectiveness of judicial intervention in achieving long-term environmental protection. While the Supreme Court's orders have resulted in bans on mining and restrictions on construction activities, their enforcement has often been uneven, with recurring instances of non-compliance and regulatory circumvention. This suggests that judicial protection, though impactful in the short term, may not be sufficient to ensure sustainable environmental governance without institutional support from executive agencies and local authorities.

Ultimately, the hypothesis anticipates that a critical evaluation of the Supreme Court's definition of the Aravalli Hills will reveal a dual outcome: judicial intervention has been instrumental in preventing ecological degradation and advancing environmental rights, yet it also underscores the need for comprehensive legislative frameworks and administrative accountability. The research seeks to test this hypothesis by analysing judicial reasoning, its practical impact, and the broader implications for environmental governance in India.

LITERATURE REVIEW

The judicial protection of ecologically sensitive areas has been a central theme in Indian environmental law scholarship, with particular emphasis on the proactive role of the Supreme Court. Scholars widely acknowledge that the Court has transformed environmental protection from a policy concern into a constitutional imperative by expanding the scope of Article 21 to include environmental rights. Early works by environmental law scholars such as Upendra Baxi and S.P. Sathe highlight how public interest litigation became a crucial vehicle through which the judiciary addressed ecological degradation and administrative inaction.⁵

A substantial body of literature examines the evolution of environmental jurisprudence in India through landmark cases such as *M.C. Mehta v. Union of India* and *Vellore Citizens' Welfare Forum v. Union of India*. These studies emphasise the incorporation of international environmental principles such as sustainable development, the precautionary principle, and polluter pays principle into domestic law through judicial interpretation.⁶ Scholars argue that

⁵ Upendra Baxi, 'Environmental Law and Judicial Activism' (1993) 5 SCC (J) 1

⁶ *Vellore Citizens' Welfare Forum v. Union of India*, (1996) 5 SCC 647

this jurisprudential shift empowered courts to intervene in environmentally harmful activities even in the absence of explicit statutory prohibitions, thereby strengthening environmental governance.

Specific academic attention has been devoted to ecologically sensitive areas and the challenges associated with their legal identification and protection. Commentators have noted that statutory frameworks often rely on administrative classifications, forest notifications, or revenue records, which may not accurately reflect ecological realities.⁷ This disconnect has been identified as a major reason for environmental degradation in regions such as coastal zones, wetlands, and hill ranges. The Aravalli Hills frequently feature in this discourse as an example of how ambiguity in legal definitions can be exploited to justify environmentally destructive activities.

Literature focusing on the Aravalli Hills underscores their ecological significance and the extent of environmental damage caused by mining and urbanisation, particularly in Haryana and the National Capital Region. Environmental studies and legal commentaries document how state governments adopted narrow interpretations of the Aravalli range to permit mining and construction, often in violation of environmental norms.⁸ Legal scholars have analysed the Supreme Court's response to these practices, noting that the Court adopted an ecological and functional definition of the Aravallis to counter administrative dilution of environmental safeguards.

At the same time, critical scholarship has emerged questioning the limits of judicial intervention in environmental matters. Some authors argue that excessive judicial activism risks undermining democratic decision-making and administrative expertise.⁹ Concerns have been raised regarding implementation deficits, as judicial orders often rely on executive agencies for enforcement. In the context of the Aravalli Hills, scholars have pointed out recurring instances of non-compliance and weak monitoring, suggesting that judicial protection alone may not ensure long-term ecological preservation.

⁷ Lavanya Rajamani, *Public Interest Environmental Litigation in India* (Oxford University Press 2006).

⁸ Centre for Science and Environment, *Aravallis: A Natural Shield under Threat* (CSE Report, 2019).

⁹ S.P. Sathe, *Judicial Activism in India* (Oxford University Press 2002).

Comparative literature provides additional insights by examining how other jurisdictions protect ecologically sensitive areas through legislative designation and specialised environmental agencies. Studies on environmental governance in the European Union and the United States highlight the importance of clear statutory frameworks and institutional coordination in safeguarding fragile ecosystems.¹⁰ These comparisons are often used to argue that while judicial intervention is valuable as a corrective mechanism, it should ideally complement, rather than substitute, legislative and administrative action.

Overall, the literature reveals a broad consensus that the Supreme Court has played a transformative role in environmental protection, particularly in cases involving ecologically sensitive areas like the Aravalli Hills. However, scholars remain divided on the long-term implications of judicial dominance in environmental governance. This research seeks to contribute to this debate by critically evaluating the Supreme Court's definition of the Aravalli Hills and assessing its impact on environmental protection, governance structures, and institutional balance in India.

CONCEPT OF ECOLOGICALLY SENSITIVE AREAS AND ENVIRONMENTAL JURISPRUDENCE

The concept of ecologically sensitive areas (ESAs) occupies a central position in contemporary environmental law and policy, reflecting the recognition that certain regions require heightened protection due to their unique ecological characteristics and vulnerability to environmental degradation. Ecologically sensitive areas are typically characterised by fragile ecosystems, rich biodiversity, and critical environmental functions such as climate regulation, water conservation, and soil stability. The protection of such areas is essential not only for ecological preservation but also for sustaining human life and ensuring intergenerational equity.

In India, the legal understanding of ecologically sensitive areas has evolved largely through judicial interpretation rather than comprehensive legislative definition. While environmental statutes such as the Environment (Protection) Act, 1986 empower the Central Government to declare ecologically sensitive zones, the identification and protection of such areas have often been inconsistent and influenced by administrative and political considerations. This gap has

¹⁰ Philippe Sands and Jacqueline Peel, *Principles of International Environmental Law* (Cambridge University Press, 4th edn, 2018).

prompted the judiciary, particularly the Supreme Court, to step in and articulate principles for identifying and safeguarding ecologically sensitive regions.

Indian environmental jurisprudence has been significantly shaped by the Supreme Court's expansive interpretation of Article 21 of the Constitution, which guarantees the right to life. Through a series of landmark judgments, the Court has held that the right to life includes the right to a wholesome and pollution-free environment.¹¹ This interpretation has provided a constitutional basis for judicial intervention in environmental matters and has enabled courts to address environmental harm even in the absence of specific statutory prohibitions.

The development of environmental jurisprudence in India has also been marked by the incorporation of international environmental principles into domestic law. In *Vellore Citizens' Welfare Forum v. Union of India*, the Supreme Court recognised sustainable development, the precautionary principle, and the polluter pays principle as integral components of Indian environmental law.¹² These principles have since guided judicial decision-making in cases involving ecologically sensitive areas, emphasising preventive action and long-term environmental sustainability over short-term economic gains.

Public interest litigation (PIL) has played a crucial role in the judicial protection of ecologically sensitive areas. By relaxing rules of locus standi, the Supreme Court enabled environmental activists and concerned citizens to approach the Court on behalf of affected ecosystems and communities. This procedural innovation transformed the judiciary into an accessible forum for environmental governance and accountability. Through PILs, the Court has issued wide-ranging directions to regulate mining, deforestation, and industrial activities in ecologically fragile regions.

The judicial approach to ecologically sensitive areas has increasingly moved beyond formal classifications based on land records or administrative boundaries. Instead, courts have adopted an ecological and functional perspective, focusing on environmental impact and ecological significance. This shift is particularly relevant in cases where administrative definitions fail to capture the true ecological value of a region. By prioritising ecological criteria, the judiciary has sought to prevent the dilution of environmental protection through technical or bureaucratic

¹¹ *Subhash Kumar v. State of Bihar*, (1991) 1 SCC 598.

¹² *Vellore Citizens' Welfare Forum v. Union of India*, (1996) 5 SCC 647.

interpretations.

The concept of ecologically sensitive areas thus reflects a dynamic interplay between constitutional values, environmental principles, and judicial creativity. While judicial intervention has been instrumental in protecting vulnerable ecosystems, it has also raised questions regarding institutional competence and the appropriate limits of judicial power. These concerns underscore the need for a balanced approach that combines judicial protection with effective legislative and administrative action. The protection of the Aravalli Hills provides a compelling case study to examine how these principles operate in practice within India's environmental jurisprudence.

ARAVALLI HILLS: ECOLOGICAL IMPORTANCE AND LEGAL BACKGROUND

The Aravalli Hills constitute one of the most ecologically significant geological formations in the Indian subcontinent. Stretching approximately 800 kilometres from Gujarat through Rajasthan to Haryana and the National Capital Territory of Delhi, the Aravalli range is among the oldest mountain systems in the world. Its ecological importance lies not only in its geological antiquity but also in the critical environmental functions it performs, particularly in north-western India. The Aravallis act as a natural barrier against the expansion of the Thar Desert, regulate microclimatic conditions, facilitate groundwater recharge, and support diverse flora and fauna.

Ecologically, the Aravalli Hills play a vital role in sustaining water resources in an otherwise semi-arid region. The forested tracts and rocky terrain of the Aravallis enable rainwater percolation, replenishing aquifers that supply water to urban and rural populations. The hills also serve as carbon sinks, mitigating air pollution and contributing to climate regulation in the rapidly urbanising National Capital Region. The degradation of the Aravallis, therefore, has direct and adverse implications for environmental health, water security, and public well-being. Despite their ecological significance, the Aravalli Hills have been subjected to extensive environmental degradation over several decades. Large-scale mining of stone and minerals, deforestation, and unregulated construction activities have significantly altered the landscape. In states such as Haryana and Rajasthan, mining operations were often justified on the basis of narrow administrative interpretations that excluded certain areas from the definition of the

Aravalli range. These practices not only caused ecological damage but also undermined environmental governance by exploiting regulatory loopholes.

The legal background concerning the protection of the Aravalli Hills is marked by fragmented statutory regulation and inconsistent administrative action. While environmental statutes such as the Forest (Conservation) Act, 1980 and the Environment (Protection) Act, 1986 provide mechanisms for protecting forests and regulating environmentally harmful activities, their application to the Aravalli region has been uneven. In many instances, land classified as 'gair mumkin pahad' or non-forest land in revenue records was excluded from forest protection norms, despite its ecological similarity to protected forest areas.

This regulatory ambiguity led to a proliferation of legal challenges and public interest litigations seeking judicial intervention. The Supreme Court was repeatedly called upon to address illegal mining and deforestation in the Aravalli Hills, particularly in the Faridabad and Gurgaon regions of Haryana. In response, the Court issued a series of orders restricting mining activities and directing state authorities to implement environmental safeguards. These interventions marked the beginning of a more assertive judicial approach towards protecting the Aravallis.

The legal background of the Aravalli Hills thus reveals a pattern of administrative dilution and regulatory failure, which necessitated judicial involvement. The absence of a uniform statutory definition allowed state governments to prioritise developmental interests over ecological preservation. The Supreme Court's intervention sought to correct this imbalance by emphasising the ecological importance of the Aravalli range and asserting that environmental protection cannot be subordinated to technical classifications or short-term economic considerations.

Understanding the ecological importance and legal background of the Aravalli Hills is essential for analysing the Supreme Court's subsequent interpretation and definition of the region. The Court's jurisprudence in this area reflects an attempt to reconcile environmental imperatives with legal frameworks, setting the stage for a transformative approach to the protection of ecologically sensitive areas in India.

SUPREME COURT'S INTERPRETATION AND DEFINITION OF THE ARAVALLI HILLS

The Supreme Court of India's intervention in matters concerning the Aravalli Hills marks a decisive shift from formalistic legal interpretation to an ecological and purposive understanding of environmental protection. Faced with persistent environmental degradation and administrative ambiguity, the Court was compelled to address a fundamental question: how should the Aravalli Hills be defined for the purpose of environmental protection? In answering this question, the Court consciously departed from narrow revenue-based and administrative classifications and adopted an ecological and functional approach to defining the Aravalli range.

One of the central issues before the Supreme Court was the tendency of state authorities, particularly in Haryana, to rely on revenue records and land-use classifications to exclude large tracts of land from the Aravalli Hills. Areas recorded as 'gair mumkin pahad' or non-forest land were often treated as outside the scope of environmental protection, despite exhibiting the same ecological characteristics as forested hill areas. The Court recognised that such classifications were susceptible to manipulation and failed to reflect ecological realities. Consequently, it held that environmental protection cannot be made contingent upon technical entries in revenue records when the ecological character of the land clearly warrants protection. In a series of orders beginning with *M.C. Mehta v. Union of India* (Aravalli mining cases), the Supreme Court emphasised that the Aravalli Hills must be understood as an ecological continuum rather than a collection of administratively demarcated parcels.¹³ The Court prohibited mining activities in areas falling within the Aravalli range, irrespective of whether such areas were classified as forest land under statutory records. This approach effectively broadened the scope of environmental protection by focusing on ecological impact rather than formal legal labels.

The Supreme Court's definition of the Aravalli Hills was also informed by the precautionary principle. Acknowledging the scientific uncertainty surrounding the full extent of ecological damage caused by mining and construction, the Court adopted a preventive stance. It held that where environmental harm is likely to be irreversible, lack of complete scientific certainty

¹³ *M.C. Mehta v. Union of India*, (2004) 12 SCC 118

cannot be used as a justification for postponing protective measures.¹⁴ This reasoning allowed the Court to impose restrictions even in cases where empirical data on environmental damage was contested or incomplete.

Another significant aspect of the Court's interpretation was its reliance on constitutional principles. By linking the degradation of the Aravalli Hills to the right to life under Article 21, the Court elevated ecological protection to a matter of fundamental rights. The Court also invoked Articles 48A and 51A(g) to reinforce the State's obligation to protect the environment and the corresponding duty of citizens to safeguard natural resources. This constitutional grounding enabled the Court to justify its expansive definition of the Aravallis as necessary to fulfil constitutional mandates.

The Supreme Court's approach effectively redefined the Aravalli Hills as an ecologically sensitive area deserving comprehensive protection, regardless of administrative classifications. This judicial definition had far-reaching implications, compelling state authorities to reassess land-use policies and regulatory practices. While the Court's interpretation was instrumental in curbing environmentally destructive activities, it also underscored the judiciary's role in filling legislative and administrative gaps. The definition of the Aravalli Hills articulated by the Supreme Court thus represents a landmark in Indian environmental jurisprudence, demonstrating how judicial interpretation can reshape environmental governance in the face of regulatory inadequacies.

JUDICIAL PROTECTION VS DEVELOPMENT: ANALYSIS OF KEY JUDGMENTS

The judicial protection of the Aravalli Hills has consistently involved a delicate balancing exercise between environmental preservation and developmental imperatives. The Supreme Court has been confronted with competing claims—on one hand, the ecological necessity of safeguarding a fragile and vital ecosystem, and on the other, the economic interests associated with mining, construction, and infrastructure development. An analysis of key judgments reveals that the Court has generally prioritised environmental protection, particularly where developmental activities posed irreversible ecological harm.

¹⁴ *Vellore Citizens' Welfare Forum v. Union of India*, (1996) 5 SCC 647

In the series of cases under *M.C. Mehta v. Union of India* concerning mining in the Aravalli Hills, the Supreme Court adopted a stringent approach towards environmentally harmful activities. The Court imposed a blanket ban on mining operations in identified areas of the Aravalli range in Haryana, observing that continued mining would accelerate desertification and cause permanent damage to the environment.¹⁵ The Court rejected arguments that mining activities contributed to economic development and employment, holding that ecological sustainability is a precondition for long-term development rather than an obstacle to it.

Another significant judgment in this context is *State of Haryana v. Jai Singh*, where the Supreme Court reaffirmed that environmental protection cannot be compromised for short-term economic gains.¹⁶ The Court emphasised that the Aravalli Hills perform essential ecological functions, including acting as a groundwater recharge zone and preventing soil erosion. It held that state policies permitting mining and construction in the Aravalli region were inconsistent with constitutional obligations and environmental statutes. This judgment reinforced the Court's stance that development must be environmentally sustainable and aligned with constitutional values.

The Supreme Court has also addressed attempts by state governments to dilute environmental safeguards through administrative reclassification of land. In several orders, the Court criticised the practice of excluding certain areas from the definition of the Aravallis based on revenue records, noting that such reclassification was often motivated by commercial interests rather than ecological considerations. The Court directed state authorities to undertake scientific and ecological assessments before permitting any developmental activity in the region.

While the Court's judgments have been widely lauded for their environmental consciousness, they have also attracted criticism for their perceived impact on development. Critics argue that judicial bans on mining and construction have adversely affected local economies and employment opportunities. Some scholars contend that the Court's approach reflects judicial overreach, as it effectively substitutes judicial discretion for policy-making by elected governments. However, the Supreme Court has consistently countered such arguments by asserting that environmental protection is an integral component of sustainable development and that economic growth cannot be pursued at the cost of ecological collapse.

¹⁵ *M.C. Mehta v. Union of India*, (2004) 12 SCC 118

¹⁶ *State of Haryana v. Jai Singh*, (2003) 9 SCC 114.

The Court's jurisprudence demonstrates a clear preference for precaution in situations involving ecological uncertainty. By prioritising long-term environmental sustainability over immediate economic benefits, the Supreme Court has articulated a development paradigm that integrates environmental considerations into decision-making processes. This approach aligns with international environmental law principles and reflects a broader shift towards environmentally responsible governance.

In assessing the judicial protection of the Aravalli Hills, it is evident that the Supreme Court has played a decisive role in redefining the boundaries of development. While challenges related to implementation and economic impact remain, the Court's judgments underscore the constitutional commitment to environmental protection and establish a strong precedent for safeguarding ecologically sensitive areas against unsustainable development.

IMPACT, CHALLENGES AND CRITIQUE OF JUDICIAL INTERVENTION

The Supreme Court's judicial intervention in protecting the Aravalli Hills has had a profound impact on environmental governance in India. By recognising the Aravallis as an ecologically sensitive area deserving comprehensive protection, the Court effectively curtailed environmentally destructive activities and brought national attention to the consequences of unchecked development. The Court's directions resulted in the suspension of mining operations, heightened regulatory scrutiny, and increased public awareness regarding the ecological significance of the Aravalli range. These outcomes demonstrate the judiciary's capacity to act as a powerful agent of environmental protection, particularly in contexts where legislative and administrative mechanisms have fallen short.

One of the most significant impacts of judicial intervention has been the strengthening of environmental jurisprudence through the adoption of ecological criteria over formal administrative classifications. The Supreme Court's insistence on an ecological definition of the Aravalli Hills has influenced how ecologically sensitive areas are identified and protected across the country. This approach has set an important precedent, signalling that environmental protection cannot be undermined by technical or bureaucratic manoeuvres. It has also reinforced the principle that environmental governance must be informed by scientific and ecological considerations rather than purely legal or administrative labels.

Despite these positive outcomes, the judicial protection of the Aravalli Hills has faced several challenges. A major issue has been the inconsistent implementation of the Court's directions by state authorities. Instances of illegal mining and unauthorised construction continue to be reported, reflecting weak enforcement and lack of coordination among regulatory agencies. This highlights a fundamental limitation of judicial intervention: courts rely on executive agencies for implementation, and judicial orders alone cannot ensure effective environmental governance in the absence of administrative commitment and capacity.

Another challenge concerns the tension between judicial activism and democratic governance. Critics argue that the Supreme Court's expansive role in defining and protecting the Aravalli Hills encroaches upon the policy-making domain of the legislature and executive. The absence of comprehensive statutory frameworks governing ecologically sensitive areas has effectively compelled the judiciary to fill regulatory gaps. While this intervention has been necessary to prevent environmental harm, it also raises concerns regarding institutional overreach and the sustainability of court-driven governance.

The economic and social implications of judicial intervention have also been a subject of critique. Restrictions on mining and construction have affected livelihoods dependent on these activities, particularly in regions where alternative employment opportunities are limited. While the Court has acknowledged these concerns, it has largely prioritised environmental protection, emphasising that long-term ecological sustainability ultimately benefits society as a whole. However, the lack of integrated rehabilitation and transition strategies for affected communities underscores the need for comprehensive policy responses beyond judicial directives.

From a broader perspective, the Supreme Court's intervention in the Aravalli Hills illustrates both the strengths and limitations of judicial environmentalism. The judiciary has been effective in articulating environmental norms and preventing immediate ecological damage, but it cannot substitute for robust legislative action and administrative enforcement. Sustainable protection of ecologically sensitive areas requires a coordinated approach involving clear statutory definitions, scientific assessment, and accountable governance structures.

In sum, the judicial protection of the Aravalli Hills represents a landmark achievement in Indian

environmental jurisprudence, while also highlighting the need for institutional reform. The challenges and critiques associated with judicial intervention underscore the importance of complementing judicial activism with legislative clarity and administrative effectiveness to ensure enduring environmental protection.

CONCLUSION AND SUGGESTIONS

The judicial protection of the Aravalli Hills stands as a significant example of the Supreme Court of India's proactive role in safeguarding ecologically sensitive areas. Faced with legislative ambiguity, administrative dilution, and persistent environmental degradation, the Court stepped in to interpret constitutional and statutory provisions in a manner that prioritised ecological sustainability. By adopting an ecological and functional definition of the Aravalli Hills, the Supreme Court transcended narrow administrative classifications and reinforced the principle that environmental protection must be guided by ecological realities rather than technical or revenue-based records.

The analysis undertaken in this research demonstrates that the Supreme Court's intervention has been instrumental in preventing irreversible environmental harm. Through landmark judgments and interim orders, the Court imposed restrictions on mining and construction activities that posed serious threats to the Aravalli ecosystem. By grounding its decisions in Article 21 of the Constitution, the Court elevated environmental protection to the status of a fundamental right, thereby strengthening the normative foundation of Indian environmental jurisprudence. The reliance on principles such as sustainable development, the precautionary principle, and the public trust doctrine further reflects the Court's commitment to aligning domestic environmental governance with international environmental norms.

However, the study also reveals that judicial intervention, while necessary, is not without limitations. The effectiveness of the Supreme Court's directions has been constrained by weak implementation and recurring non-compliance by state authorities. The continued instances of illegal mining and unauthorised development in the Aravalli region highlight the challenges of enforcing judicial orders in the absence of robust administrative machinery and political will. This underscores the inherent limitation of court-driven environmental governance, which depends heavily on executive cooperation for meaningful impact.

From an institutional perspective, the Supreme Court's expansive role raises important questions regarding separation of powers and democratic accountability. While judicial activism has served as a corrective mechanism in the face of regulatory failure, long-term environmental protection cannot rely solely on judicial intervention. The absence of comprehensive legislative frameworks governing ecologically sensitive areas has compelled the judiciary to assume a quasi-legislative role, which, though justified in exceptional circumstances, may not be sustainable in the long run.

In light of these findings, several suggestions emerge for strengthening the protection of ecologically sensitive areas such as the Aravalli Hills. First, there is an urgent need for clear and uniform legislative definitions of ecologically sensitive areas based on scientific and ecological criteria. Such legislation should provide a coherent framework for identification, protection, and management of fragile ecosystems. Second, stronger institutional coordination between environmental regulators, state governments, and local authorities is essential to ensure effective implementation of environmental safeguards. Third, policy measures should incorporate socio-economic considerations by providing alternative livelihoods and rehabilitation mechanisms for communities affected by environmental restrictions.

In conclusion, the Supreme Court's definition and protection of the Aravalli Hills represent a landmark contribution to Indian environmental jurisprudence. While judicial intervention has played a vital role in addressing environmental degradation, sustainable environmental governance ultimately requires a collaborative approach involving the judiciary, legislature, executive, and civil society. Only through such integrated efforts can the long-term protection of ecologically sensitive areas be ensured.

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