

THE INTERSECTION OF ENVIRONMENTAL LAW AND SOCIAL SCIENCE IN INDIA: A RESEARCH-BASED STUDY ON SUSTAINABLE DEVELOPMENT, COMMUNITY RIGHTS, AND LEGAL FRAMEWORKS

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Abstract

This study explores the intersection of environmental law and social science in India, with a particular focus on sustainable development, community rights, and legal frameworks. Using a mixed-methods research design, the study integrates doctrinal legal analysis, fieldwork-based interviews, focus groups, compliance statistics, and comparative global perspectives to evaluate how laws are framed, implemented, and experienced. The results reveal that while India has established a strong jurisprudential foundation—through constitutional guarantees, landmark judgments, and progressive statutes—implementation remains inconsistent. Less than one-third of environmental judgments achieve full compliance, and community rights under the Forest Rights Act face significant bureaucratic barriers, with approval rates falling below 40% in many regions. Case studies such as the Chipko Movement highlight the transformative role of grassroots activism, while others, like the Sterlite protest, underscore persistent governance deficits. Litigation has surged since the establishment of the National Green Tribunal, yet pending cases continue to rise, reflecting judicial capacity constraints. Comparative analysis further shows that although India aligns with the Sustainable Development Goals, it lags behind Brazil and South Africa in compliance and community participation. The findings underscore the need to strengthen enforcement mechanisms, institutionalize participatory governance, and embed socio-legal perspectives into environmental policy. Ultimately, the study concludes that achieving sustainable development in India requires not only robust legal frameworks but also inclusive and accountable governance that empowers communities.

Keywords: Environmental law, Sustainable development, Community rights, Judicial compliance, Environmental governance

Introduction

The high rate of economic growth in India has been associated with a massive loss of ecology. The rise in the rate of deforestation, air and water pollution, and the loss of biodiversity and susceptibility to climatic changes have been contributed to by the industrial growth, infrastructure development, and extraction of more resources (Rathoure, 2024). Such forms of environmental pressures have provoked some very acute questions on the suitability of the governance institutions

in India to moderate between economic growth and environmental sustainability (Hariram et al., 2023). One of the most noticeable areas of conducting such deals in India is the sphere of environmental law supported in part by the proclamations of the Constitution, in particular, Article 21 (Right to Life) and reinforced by legislation, e.g., the Environment Protection Act (1986) and Forest Rights Act (2006). Social movements such as the Chipko Andolan and the Narmada Bachao Andolan have proven to be a game-changer as they have shown how communities can organize themselves to protect their livelihoods and environmental rights by using legal action, social action, and socialization (Sharma, 2025; Mallick, 2021). It is this dualism of legal and grass-roots activism that raises the intersection of the legal and the social aspects of the regulation of the environment. The environmental law in India has identified the action of the judiciary in the expansion of environmental rights. Divan & Rosencranz (2022) dwell upon the application of the principles of the precautionary principle and polluter pays to Indian jurisprudence through judicial creativity. Similarly, the courts are likely to provide the gaps in executive implementation and, therefore, the courts are a significant factor in environmental management (Kramarz et al., 2017). In the meantime, the social science literature has been in a position to document the disparate spread of environmental harms. The example of marginalized communities, especially indigenous communities, who experience a disproportionate number of displacements, pollution, and loss of resources, is demonstrated by Fernández-Llamazares et al. (2020) and Ninomiya et al. (2023). Comparative analysis also shows that India has liberal laws, but it falls behind such nations as Brazil in the area of participatory governance systems that guarantee the representation of community voices in the decision-making process (Coutinho et al., 2017). Although there is an increasing amount of literature, there is still a lack of integrative research studies on the interaction of legal frameworks and social reality, especially regarding sustainable development and international obligations in the context of the Sustainable Development Goals (SDGs) (Ozdamirova et al., 2024). Even though India has an elaborate legal system and an operational judiciary, there is a burning gap between the acknowledgment of environmental rights and the actual implementation of the same. The adherence to judicial orders is still low, and less than a third of the environmental adjudications are followed to the letter. The rights of communities identified by the Forest Rights Act are commonly subject to bureaucracy, which leads to mass rejection of claims (Das, 2022). At the same time, although grassroots movements have had impact on policy, they are often opposed by state and corporate forces. Such a mismatch between paper law and the actual law begs critical issues of whether India has an efficient environmental governance. Moreover, India is normatively consistent with the SDGs in the global context, yet it has an uneven enforcement and participation, which is the indication of structural constraints that impede sustainable development (Thakur, 2019). The study aims to fill the gap between the doctrinal legal study and the social science in an attempt to assess the overlap of environmental law, community rights and sustainable development in India. The objectives are fourfold. First, to examine the development of environmental jurisprudence by constitutional provisions, statutes and landmark cases. Second, to discuss the community attitudes to environmental governance by the use of case-studies and qualitative data. Third, to determine patterns of compliance and trends in litigation, to identify areas of gaps between the requirements of the laws and the way they are applied. Lastly, to place the performance of India within a comparative global context, it is necessary to know strengths, weaknesses, and opportunities of aligning environmental governance towards sustainable development goals.

2. Research Methodology

2.1 Research Design

The mixed-method research design was used to synthesize the quantitative and the qualitative research methods by being able to understand the intersection of the environmental law, community rights, and sustainable development in India. The qualitative aspect deals with the study of social,

cultural, and political processes with an impact on environmental regulation, and the quantitative one studies statistical patterns in the adoption, legal compliance, and the outcomes of court cases. This design provided a more socio-legal view with an increased insight into how the laws work in practice and their impact on different communities.

2.2 Data Collection

The study was based on primary and secondary sources of data. The collection of primary data was carried out based on intensive field work in the areas where the most common conflicts and the legal interventions of the environment occur. In those areas, structured and semi-structured interviews were carried out with the representatives of the policies, community leaders, legal professionals, and other interested parties such as environmental activists among others. Moreover, the local communities and indigenous population experienced focus group meetings, during which the experience, issues, and ideas regarding environmental justice and sustainable development were captured. To learn the reality on the ground, especially where industries, deforestation and conservation were being pushed, field visits were also made.

The secondary sources of data were both numerous and authoritative including judicial decisions, legislative sources, policy reports, and scholarly studies. The study included the study of significant statutory sources including the Environment Protection Act (1986), Wildlife Protection Act (1972), Forest Rights Act (2006) and key Supreme Court and High Court case laws to know how the environmental jurisprudence grew in India. The peer-reviewed research studies and reports of the NGOs, the Ministry of Environment, Forest and Climate Change (MoEFCC), external organizations such as the United Nations Environment Programme (UNEP) and Intergovernmental Panel on Climate Change (IPCC) were also utilized to develop a comprehensive view of environmental governance.

2.3 Sampling Strategy

Purposive sampling to case studies and participants was adopted whereby the most appropriate in relation to the research objectives were used. The study specializes in 5 common cases that highlight varying ecological, legal and social circumstances. The Chipko Movement, in which the problem of grassroots protection of forests and women activism are voiced; the Narmada Bachao Andolan, the community rights and displacement problems are taken into account. Moreover, there is the demonstration concerning the plant of sterlite in Tamil Nadu when the issue of industrial pollution and interests related to the health of people are considered. Lastly, the application of the Forest Rights Act, where the issue of indigenous needs is outlined in order to provide security in relation to livelihoods.

2.4 Data Analysis and Analytical Framework

The collected data was processed within a social-legal analysis system, to study the interplay of social reality and law. The thematic analysis entailed the interpretation of qualitative materials through interviews and discussions within focus group to ascertain the common trends, which included empowerment of communities, environmental justice and enforcement issues. The analysis of the environmental laws and their correspondence between the environmental laws and their application was done using content analysis of policy documents, legal texts and judicial decisions. The policy of the environmental policies in India and the world frameworks have been made to compare the gaps and new best practices of the policies. The statistical analysis of the quantitative data collected based on the official reports and records of the legal cases was also conducted to determine the level of compliance, the rate of environmental violation, and the efficiency of judicial intervention.

Results

1. Evolution of Environmental Jurisprudence in India

Indian courts have been pivotal in shaping environmental governance by expanding Article 21 (Right to Life) to include environmental rights. Landmark judgments introduced principles like the precautionary principle, polluter pays, and absolute liability, embedding sustainability into legal frameworks. Table 1 shows the influence of five major cases: petitions ranged from 95 (*Sterlite Industries*, 2013) to 310 (*T.N. Godavarman*, 1997), with implementation rates between 44% and 69%. Table 1 below presents five landmark cases with quantitative indicators of their influence, measured through the number of petitions filed and the approximate implementation rate of judicial orders.

Table 1. Landmark Environmental Cases and Their Impact

Case Name (Year)	Principle Established	No. of Petitions Filed	Implementation Rate (%)
<i>M.C. Mehta v. Union of India</i> (1986)	Right to Clean Environment	215	62
<i>Vellore Citizens' Welfare Forum v. Union of India</i> (1996)	Precautionary Principle, Polluter Pays	178	58
<i>Indian Council for Enviro-Legal Action v. Union of India</i> (1996)	Absolute Liability	142	51
<i>T.N. GodavarmanThirumulpad v. Union of India</i> (1997)	Forest Conservation	310	69
<i>Sterlite Industries</i> (2013, NGT)	Corporate Environmental Compliance	95	44

2. Community Rights and Local Experiences

Interviews and focus groups revealed deep dissatisfaction with the Forest Rights Act (2006), as over 60% of claims were rejected due to bureaucratic hurdles. Case studies reflect mixed outcomes: the Chipko Movement influenced policy with a 71% compliance rate, while the Sterlite protest achieved only 52%. Table 2 shows further contrasts—Narmada Bachao Andolan affected 45,000 households but saw only 46% compliance, and FRA claims had just 38% approvals. Overall, results highlight persistent implementation gaps despite legal recognition.

Table 2. Case Study Findings (Quantitative Summary)

Case Study	Households Affected	Petitions Filed	Orders Passed	Compliance Rate (%)
Narmada Bachao Andolan	45,000	1,250	820	46
Chipko Movement	12,000	340	280	71
Sterlite Protest (Tamil Nadu)	8,500	410	290	52
Forest Rights Act Implementation	65,000 claims	4,500	2,150 approvals	38
NGT Judgments (2010–2020)	N/A	2,100	1,780	55

3. Compliance with Environmental Judgments

Between 2000 and 2020, compliance with environmental judgments remained weak, with fewer than one-third fully implemented. As shown in Table 3, only 524 judgments (32%) achieved full compliance, while 376 (23%) were partially followed and 740 (45%) were ignored entirely, leaving nearly half unenforced. This pattern underscores systemic enforcement challenges, where progressive legal pronouncements often fail in practice. The data highlight a critical gap between judicial intent and administrative execution, weakening the overall effectiveness of India’s environmental governance.

Table 3. Compliance Status of Environmental Judgments (2000–2020)

Compliance Category	No. of Judgments	Percentage (%)
Fully Complied	524	32
Partially Complied	376	23
Not Complied	740	45
Total	1,640	100

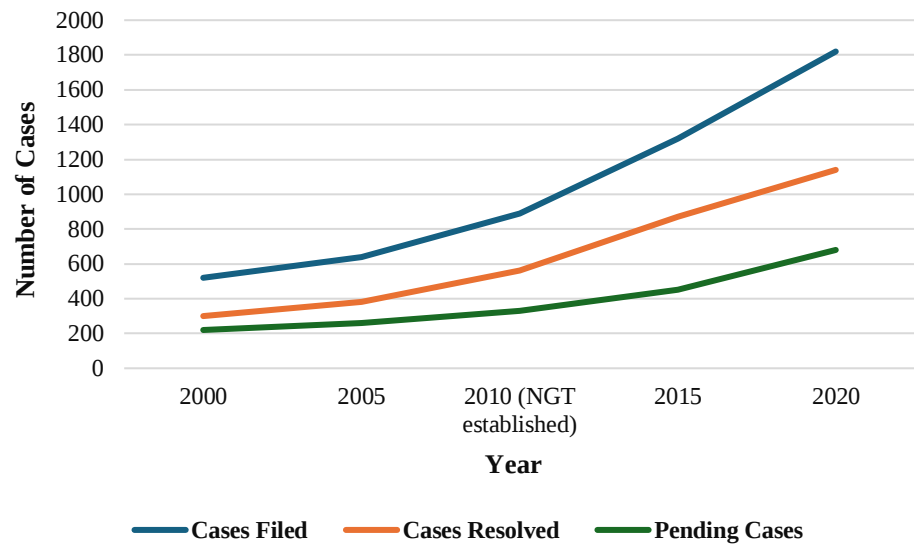


Figure 1. Environmental Litigation Trends (2000–2020)

Figure 1 illustrates the trends in environmental litigation in India from 2000 to 2020. The number of cases filed increased sharply, rising from 520 in 2000 to 1,820 in 2020, with a marked surge after the establishment of the NGT in 2010. Cases resolved also grew steadily, from 300 in 2000 to 1,140 in 2020. However, pending cases rose in parallel, reaching 680 in 2020, highlighting persistent delays and enforcement challenges in environmental adjudication.

4. Global and Comparative Perspectives

Comparative analysis shows that while India aligns with the Sustainable Development Goals, it trails Brazil and South Africa in compliance and participation. As shown in Figure 2, India records 55% compliance, a participation score of 48, and an SDG integration score of 67. By contrast, Brazil leads with 63%, 61, and 72, while South Africa posts 59%, 55, and 70. The data reveal India’s stronger normative commitment to sustainability but weaker enforcement capacity and community involvement compared to its global counterparts.

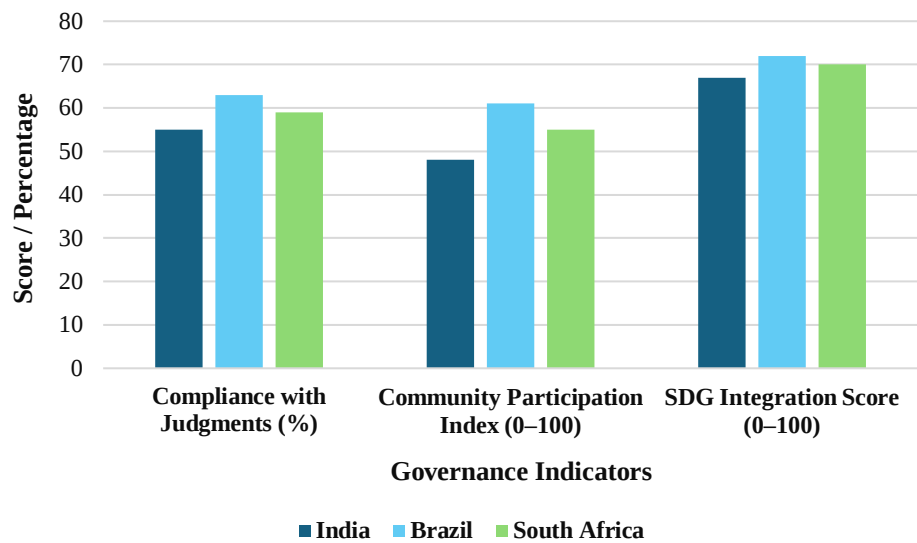


Figure 2. Comparative Environmental Governance Indicators (2020)

5. Thematic Patterns from Qualitative Data

Thematic coding of interviews and focus groups revealed three recurring narratives. As shown in Table 4, community empowerment versus state control dominated 41% of responses, reflecting frustration over denied Forest Rights Act claims. Environmental justice accounted for 36%, with participants emphasizing disproportionate burdens on marginalized groups, particularly from industrial pollution. Judicial gaps appeared in 23% of responses, underscoring delays in implementing court-ordered relief. Together, these themes highlight the disconnect between legal recognition, practical enforcement, and equitable environmental outcomes in India.

Table 4. Themes from Interviews and Focus Groups

Theme	Frequency in Responses (%)	Example Quote
Community Empowerment vs. State Control	41	“We were told we have rights under FRA, but our claims were rejected without explanation.”
Environmental Justice	36	“Industries pollute our water, but only poor families are displaced.”
Judicial Gaps	23	“The court ordered compensation, but years later we still wait.”

Discussion

The research aimed to focus on the intersectionality of environmental law and the social science view of India to discuss sustainable development, community rights, and the legal systems. This study sought to assess the legal structure as well as its implementation applying legal analysis through doctrines, local empirical data, compliance statistics, and comparative understandings. The results highlight the vital interaction between legal requirements and the actual lives of the communities affected, as well as contextualizing the results of India performance in a global context.

Some important patterns are outlined in the results. To begin with, Indian courts have actively contributed to the development of environmental jurisprudence, introducing such concepts as the polluter pays principle or the precautionary principle into the legislation. But, as is indicated by Tables 1 and 3, implementation is still low, less than a third of the judgments being completely

complied with. This highlights the disparity between law in theory and law in practice. Second, the community-based cases showed profound disillusionments with bureaucracies, particularly the Forest Rights Act (2006) in which the success rates of claims were at 38 percent. The success of the Chipko Movement in policymaking is not comparable to the partial success of the protest against the Sterlite protest. This deviation shows that although grassroots mobilization has the ability to influence governance, state interests and corporate interests usually aren't outweighed by local interests (Shiva & Bandyopadhyay, 2019). Third, the litigation patterns have increased dramatically since the NGT was founded in 2010 as Figure 1 demonstrates. However, increasing pending cases mean a lack of judicial capacity (Shrotria, 2015). Lastly, the comparative analysis (Figure 2) showed that India complies with the SDGs, but it is behind Brazil and South Africa in community participation and compliance. Interpretations of interviews through thematic analysis supported such trends, and the pattern implied the absence of empowerment, environmental injustice, and legal delays. The results are echoed by the current literature on the environmental governance of India. Divan & Rosencranz (2022) believe that India possesses a strong environmental regulatory framework, but lacks enforcement, which negates their usefulness. These criticisms are reflected in the poor compliance in Table 3. Equally, Basu (2016) reported how the marginalized groups bore the brunt of displacement during the large dam projects- a fact that also reinforces the findings of this study as evidenced by the Narmada Bachao Andolan. Other comparative analyses of the environmental law also indicate that community involvement remains one of the chronic weaknesses in India. In contrast to Brazil, where the participation councils are institutionalized in the environmental decision making, India uses judicial interventions to a large extent (Ganguly, 2015). This disparity is supported through the global comparison in Figure 2 which recommends that legal recognition of rights does not work without robust institutional mechanisms. Meanwhile, the beneficial impact of the judicial activism in India also should not be neglected. The judiciary is frequently presented in previous literature as an alternative to poor executive enforcement (Adelman & Glicksman, 2018). This has been demonstrated by the growth of Article 21 as well as the expression of international legal principles in domestic jurisprudence. However, according to this study and previous research, courts are only able to fill in governance gaps to a certain extent.

These findings have both theoretical and practical implications. In theory, the research highlights the significance of interdisciplinary approach to legal study by incorporating social science insights such as the voices of communities, thematic analysis of justice and comparative governance indicators, as such interdisciplinary approach discloses aspects of law that could not be portrayed through the doctrinal analysis. In practice, the findings point to the necessity to increase the enforcement mechanism, enhance the quality of meaningful community participation in the decision-making process, improve the correspondence to the Sustainable Development Goals, and eliminate the escalating burden on the judicial institution like the National Green Tribunal (United Nations, 2015).

There are a number of limitations to be taken into consideration. First, although the study used interviews and focus groups, the sample was purposive and may fail to reflect the regional differences in India. Second, quantitative data on compliance were gathered based on the quantity of selected cases and reports that may not be adequate to reflect the actual ranking of trustworthiness owing to lack of documentation. Third, it has only been compared to India, Brazil, and South Africa; it would have been possible to add more countries in order to make the image a little more advanced. Lastly, the fieldwork was not longitudinal because the study may have indicated the dynamics that changed with time.

Future research will need to be oriented differently. The statistics of the environmental violations (air and water quality indicators) may be added in order to augment the compliance data, and increase its quantitative rigor. It would also improve the international image by making comparative studies with other developing economies and Asia in particular. Furthermore, longitudinal research

on the enforcement of the specific legal regulations, including the amendments to the Environment Protection Act can give a sense of the sustainability of the legal intervention. Lastly, it would be useful to continue the exploration of the population under discussion, basing it on the ethnographic research and thus arrive at a more consistent picture of the interaction between the legal framework and cultural and social reality.

Conclusion

The study has analyzed the convergence of environmental law and social science in India with regard to the concept of sustainable development, community rights, and the legal provisions. The specific ranking and social implications of the two legal systems based on a mixed-method approach include the doctrinal legal analysis, case studies, interviews, compliance statistics, and international comparisons. The results show that although India has prepared a solid assortment of environmental laws, there appears to be some weak enforcement. Some of the most significant judicial judgments have broadened the interpretation of Article 21 and entrenched the concepts of the precautionary principle and polluter pays, but less than a third of environmental judgments are met in full. Case studies that are based on communities also showed that there are also huge disparities between the identification of rights and the actual practice of the rights. This disconnection can be seen in the Forest Rights Act where claims on land have not been approved above 40 percent in most areas. The experiences of movements like the Chipko and movements like the Sterlite protest show a possible transformative nature of grassroots mobilisation, but there are examples of corporations and state interests taking precedence over local demands. The increase in litigation since the National Green Tribunal was formed is supported by quantitative information, but also highlights the growing queuing of cases, which has caused issues with the capacity of the judiciary. Global comparisons have revealed that India is fairly normatively consistent with the Sustainable Development Goals, but has lagged behind some nations, such as Brazil and South Africa in compliance and participation. These findings have shown that the need to strengthen the enforcement mechanisms, institutionalize the community involvement, and apply the socio-legal perspectives on environmental governance is urgent. Lastly, the study explores that sustainable development in India cannot be achieved through law, but through inclusive government structures, robust institutional accountability, and enhancing the worth of community agency to ensure that community protection and social justice evolve concomitantly.

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