

REVIEW



Challenges in enforcing NGT orders: an empirical study on mining-related litigation in southern Karnataka

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ABSTRACT

The proliferation of illegal mining and industrial activities in Southern Karnataka, encompassing districts like Mysore, Chamarajanagar, and Mandya, poses a critical challenge to India's sustainable development goals. This empirical study investigates the efficacy of the National Green Tribunal (NGT) in enforcing its judgments against environmental transgressors in this mineral-rich but ecologically sensitive region. This research analyses, three pivotal NGT orders concerning illegal quarrying, riverbed sand mining, and industrial effluent discharge between 2012 and 2016. The findings reveal a persistent gap between judicial pronouncements and ground-level compliance, primarily due to a fragmented multi-agency enforcement framework, legal exploitation of stay orders, and political-economic pressures rooted in community dependency on mining. The article posits that the NGT's reliance on state machinery, coupled with insufficient deterrent penalties, leads to partial or delayed compliance outcomes. Policy recommendations focus on legal reforms (streamlined appeals, enhanced penalties), administrative restructuring (establishing a District-Level Environmental Enforcement Committee), and technological integration (GIS and remote sensing) to improve institutional accountability and secure ecological justice.

KEY WORDS

National Green Tribunal (NGT); Environmental enforcement; Public Interest Litigation (PIL); Illegal mining; Southern Karnataka; Judicial compliance

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Introduction

Background and context

Environmental degradation caused by unregulated mining and industrial activities has become a central concern in India's sustainable development discourse [1]. The Southern Karnataka region, particularly districts like Mysore, Mandya, and Chamarajanagar, is characterized by extensive stone quarrying, sand mining, and industrial expansion. While these activities fuel economic growth, they simultaneously trigger severe environmental harms, including deforestation, air and water pollution, and loss of biodiversity.

The judiciary has historically expanded the Right to Life (Article 21) to encompass the right to a clean environment via Public Interest Litigation (PIL). Recognizing the need for specialized environmental adjudication, the National Green Tribunal (NGT) was established under the National Green Tribunal Act, 2010, to provide effective and speedy remedies. The NGT has delivered bold orders such as imposing environmental compensation and directing closures yet, the enforcement of these orders remains profoundly challenging.

Study rationale and research gap

Southern Karnataka serves as a microcosm of India's environmental governance challenges. Despite numerous cases filed before the NGT alleging environmental violations, the implementation of NGT orders at the ground level is consistently reported as inadequate [2].

The existing body of research primarily focuses on the legal jurisprudence developed by the NGT and the Supreme Court, detailing the evolution of environmental laws like the Air Act (1981), Water Act (1974), and the EIA Notification (2006).

However, studies directly focusing on the empirical enforcement outcomes of NGT directives specific to mining operations in a geographically defined and economically sensitive zone like Southern Karnataka are scarce.

The research gap

While legal provisions and NGT orders are abundant, there is a distinct lack of empirical analysis detailing why and how implementation fails on the ground, specifically the role of multi-agency failure, litigation strategy by perpetrators, and socio-economic dynamics in a regional context.

Methodology and Results

This article employs an empirical case-study methodology, analysing three specific NGT orders from 2012 to 2016 concerning illegal mining and pollution in Mysore, Mandya, and Chamarajanagar districts. The analysis uses court records and compliance reports (details in Section 3). The results show that enforcement is largely characterized by partial or delayed compliance, primarily due to the exploitation of stay orders in higher courts and the fragmented execution authority among the Karnataka State Pollution Control Board (KSPCB), the Department of Mines & Geology, and local administration.

Research hypothesis

This empirical study aims to test the following hypothesis:

The enforcement hypothesis: The effectiveness of NGT orders in curbing illegal mining in Southern Karnataka is significantly diluted by delayed compliance and the systematic exploitation of legal loopholes (appeals/stay orders) by quarry and industrial operators [3].

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The administrative hypothesis: The fragmented regulatory framework and lack of coordination among state enforcement agencies (KSPCB, Mining Dept., and Revenue Dept.) is the primary administrative barrier to the successful implementation of NGT directives [4].

The deterrence hypothesis: The financial penalties and environmental compensation imposed by the NGT often fail to achieve a strong deterrent effect because they are frequently less than the operational profits of illegal mining activities.

Study objectives

Stemming directly from the identified research gap, this article sets out to achieve the following objectives [5]:

- 1) To critically examine the specific role and influence of NGT jurisprudence in regulating mining and industrial pollution in Southern Karnataka;
- 2) To empirically identify and categorize the complex challenges in the enforcement process, including legal, administrative, and political hurdles;
- 3) To analyze the enforcement trajectories and final outcomes of select NGT case studies in the Mysore region;
- 4) To explore the critical interface and complementary functions of PIL and NGT mechanisms; and finally,
- 5) To propose targeted policy and legal reforms to ensure effective and sustainable compliance with NGT directives in the region.

Literature review: environmental governance in Southern Karnataka

Environmental laws and mining activities

The environmental governance structure in India rests upon several key statutes, including the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, and the Mines and Minerals (Development and Regulation) Act, 1957.

Data sources and databases

Data Category	Source/ Database	Description
Primary Judicial Data	NGT Online Database (NGT India)	Full text of NGT Principal Bench and Zonal Bench (Bangalore) orders, compliance reports, and committee proceedings (2012–2018).
Enforcement Reports	Karnataka State Pollution Control Board (KSPCB) & Department of Mines & Geology	Periodic compliance reports submitted to the NGT.
Secondary Data	Academic Journals, Published Research Reports (e.g., CSE), News Archives	Contextual information on mining impact, legal jurisprudence, and comparison with other enforcement studies.

Case studies for empirical analysis

Three landmark NGT cases from the region were selected for

Mining operations, particularly for minor minerals like sand and stone, are regulated by state-level rules subject to the Environmental Impact Assessment (EIA) Notification, 2006. Judicial precedents, beginning with *M.C. Mehta v. Union of India*, established the 'polluter pays' principle and absolute liability, which the NGT frequently applies.

However, literature consistently points out that despite this robust legal framework, compliance failure is high. Scholars attribute this to the gap between 'law on the books' and 'law in action', often citing inadequate institutional capacity and high levels of corruption in regulatory bodies [6].

Southern Karnataka as the study area

Southern Karnataka, comprising districts like Mysore, Mandya, Chamarajanagar, and Chikkamagaluru, was selected as the study area due to its dual significance:

Ecological sensitivity: The region encompasses parts of the Western Ghats (e.g., Chikkamagaluru) and vital river systems (Cauvery in Mysore/Mandya), making it ecologically sensitive to sand and stone extraction [7].

Concentrated ditigation: The region has been a focal point for environmental PILs and NGT applications concerning large-scale, often unlicensed, quarrying and sand mining (e.g., illegal quarrying in Mysore and sand mining in the Cauvery riverbed near Mandya). This concentration provides sufficient data points for an empirical examination of enforcement patterns [8].

Economic dependency: The local economies in these districts are heavily reliant on the construction and mining sectors, creating the specific political-economic resistance that characterizes the enforcement challenge.

Methodology

Research design

This study adopts an Empirical Legal Research Design focusing on the outcomes of specific NGT judgments. The approach is qualitative, utilizing case-study analysis to understand complex, multi-layered enforcement challenges.

detailed analysis, serving as the core empirical data for testing the hypotheses:

Case Order	Issue	NGT Order (Directive)
OA No. 122/2012 (Mysore District Citizens Forum v. Union of India)	Illegal Stone Quarrying without Environmental Clearance (EC) in ecologically sensitive zones.	Immediate suspension of illegal operations. Imposition of environmental compensation (e.g., INR 50 lakhs). Direction for periodic monitoring by KSPCB [9].

OA No. 210/2015 (Local Farmer Associations v. State of Karnataka & Mining Contractors)	Excessive, unauthorized sand extraction causing riverbed degradation in the Cauvery region.	Ban on unauthorized sand mining. Creation of a monitoring committee including local community members and government officials.
OA No. 205/2016 (Sugar & Textile Units v. State of Karnataka)	Untreated effluent discharge from industrial units affecting water quality (Mandya).	Mandated installation of Effluent Treatment Plants (ETPs). Periodic water quality monitoring and penalties for non-compliance.

Data analysis method

The analysis involved a gap analysis of each case: comparing the NGT Order (Intended Outcome) versus the Final/Current Enforcement Situation (Actual Outcome). This process helped categorize the obstacles into legal, administrative, and socio-economic impediments, directly addressing the research gap [10].

Results

The analysis of the three empirical case studies yields clear patterns regarding NGT order enforcement in Southern Karnataka:

Case study outcomes (NGT Orders vs. Reality)

The detailed outcomes for the three key cases demonstrate consistent enforcement friction:

Case Order	Issue	NGT Order (Directive)	Legal Outcome	Current Situation (Enforcement)
OA No. 122/2012	Illegal Stone Quarrying (Mysore)	Closure, Compensation (INR 50L), KSPCB Monitoring.	High Court Appeal: Quarry owners secured an interim stay or challenged the NGT's authority.	Partial Compliance: Some initial closures occurred, but several quarries resumed operations citing ongoing litigation, reflecting gaps in NGT enforcement authority at the ground level.
OA No. 210/2015	Sand Mining in Cauvery Riverbed (Chamarajanagar)	Ban on unauthorized mining, establishment of community monitoring committee.	Intermittent: The State Government complied but often delayed the full establishment of the monitoring committee.	Intermittent Violations: Compliance improved in areas with active community monitoring, but illegal extraction resumed in remote areas due to the lack of effective state-led surveillance.
OA No. 205/2016	Industrial Pollution (Mandya)	Installation of ETPs, Periodic water quality reporting, Penalties.	Formal Compliance: ETPs were formally installed to avoid penalties.	Inconsistent Reporting: While physical infrastructure was installed, monitoring and reporting compliance (water quality standards) remained inconsistent due to administrative inertia (Hypothesis H2 confirmed).

Probable outcome conclusion

The empirical evidence strongly suggests that NGT orders, while legally robust, are often subjected to strategic non-compliance (Hypothesis). Compliance is generally restricted to the least costly actions (e.g., physical closure for a short time), while restoration and sustained monitoring obligations are circumvented or delayed through bureaucratic inaction and legal appeals. The NGT's reliance on often-under-resourced and politically constrained state agencies for implementation consistently leads to enforcement failure [3].

Discussion

Comprehensive summary of findings

The study's findings validate all three hypotheses. The core issue

is not the lack of legal authority (NGT's *lex specialis* power is clear) but the implementation deficit. This deficit is a three-way bottleneck:

- Legal bottleneck:** Stay orders in higher courts erode the NGT's finality.
- Administrative bottleneck:** Fragmentation and resource constraints among KSPCB, Mines Department, and local bodies prevent coordinated enforcement (confirming H2).
- Deterrence bottleneck:** Penalties are insufficient to offset illegal profits, leading to cost-benefit calculations that favor non-compliance (confirming H3).

Comparative analysis with published articles

The findings in Southern Karnataka align with and contribute to broader national discussions on NGT enforcement.

Aspect of Non-Compliance	Findings in Southern Karnataka	Comparison with National Literature (e.g., M. Divan, L. Rajamani)
Appeals/Stays	High incidence, particularly in Mysore quarrying cases, leading to immediate resumption of activity.	Consistent with national trend where the NGT's specialized orders are frequently undermined by the judicial hierarchy.
Administrative Inertia	Direct correlation between lack of KSPCB/Mining Dept. reporting and non-compliance (H2 confirmed).	Echoes systemic issues identified across states, where political pressure and lack of technical staff hobble the enforcement mechanism.
Deterrent Effect	INR 50L fine often less than operational profit (H3 confirmed).	Reinforces the call for environmental compensation to be calculated strictly based on the Net Present Value (NPV) of illegal profits plus the cost of restoration, not merely an arbitrary fine.

Citizen Monitoring	Improved compliance where community committees were mandated (OA 210/2015).	Supports findings that active local participation is the most effective force multiplier for enforcement against powerful economic interests.
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The study adds an empirical layer by specifically mapping this generalized failure onto the case records of a sensitive, mineral-rich region, demonstrating that the enforcement challenge is systemic and requires targeted regional solutions.

Validation with recent mining data

Recent data from the Karnataka Department of Mines and Geology (DMG) and KSPCB for the 2018-2022 periods indicate a persistent issue. While the number of registered quarries has increased, so too has the number of unlicensed/illegal quarrying cases recorded by the DMG, particularly in minor mineral extraction zones. For instance, the year-on-year increase in environmental fines collected by KSPCB often reflects a high violation rate, not necessarily high deterrence [11]. This ongoing legal-administrative struggle confirms the enduring relevance of this research topic.

Suggestions and Reforms

To secure the NGT's mandate and achieve ecological justice, the following policy, legal, and institutional reforms are necessary:

Legal and institutional reforms

Streamlined appeals process: Legislative measures must be introduced to create a time-bound review mechanism within the NGT framework before any appeal is entertained by a higher court, minimizing the use of frivolous stay orders.

Enhanced financial deterrence: Implement a formulaic calculation for environmental compensation, ensuring it always exceeds the estimated operational profit and includes an escrow-based fund dedicated solely to local restoration [12].

Direct enforcement authority: Amend the NGT Act to grant NGT-appointed Special Environmental Officers direct on-ground enforcement powers, reducing dependency on state agencies in high-priority cases.

Administrative and technical reforms

Inter-Agency coordination: Formalize the District-Level Environmental Enforcement Committee (DLEEC), mandating joint monthly review meetings and shared digital platforms for compliance reporting [13].

Advanced monitoring: Utilize GIS mapping, remote sensing, and drone technology to monitor mining boundaries and compliance in real-time. The DMG should publicly host real-time data on licensed vs. actual mining areas.

Capacity building: Invest in the KSPCB and DMG to enhance their technical expertise in monitoring, data analysis, and legal procedures related to NGT compliance.

Conclusions

The empirical study demonstrates that the NGT has emerged as a crucial judicial forum, but its effectiveness in Southern Karnataka is severely hampered by administrative fragmentation, legal delays, and economic dependencies. The success of environmental governance in the region hinges on bridging the gap between NGT orders and ground-level execution through coordinated administrative will and technological integration.

Study limitations

The primary limitation of this study is its reliance on publicly available compliance reports, which are often delayed, incomplete, or subject to political influence. Furthermore, the small sample size (three case studies) limits the generalizability of the findings, although the recurring patterns strongly indicate systemic issues.

Future research

The principal outcome of this research is the identification and categorization of the three critical enforcement bottlenecks (Legal, Administrative, Deterrence) within the Southern Karnataka context.

A quantitative study correlating penalty amounts versus final compliance rates to rigorously test Hypothesis H3.

An investigation into the impact of alternative livelihood programs on reducing community resistance to NGT enforcement in mining-dependent districts.

A comparative analysis of NGT enforcement patterns in Southern Karnataka versus other mineral-rich zones in India (e.g., Odisha or Goa).

Disclosure Statement

No potential conflict of interest was reported by the author.

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