NATIONAL ENVIRONMENTAL LEGISLATION IN INDIA: A CRITICAL EVALUATION OF STATUTORY FRAMEWORK AND IMPLEMENTATION CHALLENGES

[1] Annapurna Trivedi,
Research Scholar
Institute of Legal Studies, Shri Ramswaroop Memorial University, Lucknow
Email- trivedi.annu0510@gmail.com

[2] Prof. (Dr.) Aryendu Dwivedi
Professor & Director
Institute of Legal Studies, Shri Ramswaroop Memorial University, Lucknow
Email- aryendu01071972@gmail.com

ABSTRACT

India's environmental legislation has undergone profound transformation since the early 1970s, shaped by global environmental consciousness, international treaty obligations, landmark judicial interventions, and evolving constitutional mandates. From the enactment of the **Water (Prevention and Control of Pollution) Act, 1974**, to the comprehensive **Environment (Protection) Act, 1986**, the country has attempted to construct an integrated regulatory architecture to combat pollution, conserve biodiversity, regulate industrial activity, and promote sustainable development. These legislations, supported by the **Forest (Conservation) Act, 1980**, the **Air (Prevention and Control of Pollution) Act, 1981**, and subsequent rules on hazardous waste, environmental impact assessment (EIA), and biological diversity, collectively form the backbone of India's environmental governance framework.

Despite their breadth and theoretical robustness, the effectiveness of these laws has been constrained by persistent implementation deficits. Weak institutional capacity, chronic understaffing in Pollution Control Boards, inadequate financial resources, and overlapping jurisdictions between central and state authorities frequently impede enforcement. Moreover, political pressures, industrial lobbying, and bureaucratic inertia dilute regulatory powers and slow down compliance mechanisms. The judiciary—particularly through Public Interest Litigations (PILs) and the activism of the **National Green Tribunal (NGT)**—has

played a pivotal role in filling legislative and administrative gaps, yet judicial interventions alone cannot substitute a strong regulatory machinery.

This article critically evaluates major national environmental statutes, examining their historical evolution, structural design, statutory strengths, and practical limitations. It also identifies prevailing governance challenges, including inadequate monitoring infrastructure, ineffective prosecution of polluters, inconsistent implementation across states, and limited community participation. The study argues that while India's environmental laws are comprehensive on paper, their real-world impact remains restricted without stronger institutions, technological integration, transparent regulatory processes, and enhanced accountability mechanisms. The findings underscore the urgent need for systemic reforms to bridge the gap between law and practice, ensuring that environmental legislation fulfills its intended role in safeguarding India's ecological future.

1. INTRODUCTION

Environmental governance in India has witnessed a dynamic and evolving trajectory shaped by international environmental movements, constitutional mandates, judicial interventions, and increasing public awareness. Although environmental concerns existed in India long before modern legislation embedded in cultural, religious, and traditional practices the enactment of dedicated environmental statutes began prominently in the 1970s. This shift was catalysed by growing industrialization, rapid urbanization, rising pollution levels, and global environmental debates.

In the 21st century, India's environmental challenges have become increasingly interconnected with global concerns such as climate change, trans boundary pollution, and sustainable resource management. The country's rapid economic growth has intensified pressure on natural ecosystems, prompting policymakers to revisit the adequacy of existing environmental laws. Judicial activism has played a significant role in expanding the scope of environmental rights, with the Supreme Court interpreting the **right to life under Article 21** as encompassing the right to a clean and healthy environment. At the same time, civil society movements, academic research, and media investigations have brought environmental issues to the forefront of national discourse. As India seeks to balance economic development with ecological sustainability, evaluating the effectiveness of its statutory framework becomes an essential exercise for policy reform and environmental justice.

A major turning point came with India's participation in the **United Nations Conference on the Human Environment (Stockholm, 1972)**, which led to institutional reforms and the establishment of the **Central Pollution Control Board (CPCB)** and State Pollution Control Boards (SPCBs). Subsequently, the **42nd Constitutional Amendment (1976)** incorporated environmental protection as both a **state obligation (Article 48-A)** and a **fundamental duty of citizens (Article 51-A(g))**, laying a constitutional foundation for ecological governance.

From the Water Act of 1974 to the Environment (Protection) Act of 1986, India's legislative framework has expanded significantly, encompassing air quality, forest conservation, hazardous waste, biodiversity, environmental impact assessment, and climate resilience. Despite this, environmental degradation persists due to gaps between statutory design and institutional implementation.

This paper critically evaluates the structure, effectiveness, and limitations of India's major environmental laws, highlighting the need for systemic reforms, technological monitoring systems, and stronger institutional accountability.

2. Water (Prevention & Control of Pollution) Act, 1974

The Water (Prevention and Control of Pollution) Act, 1974 represents one of the earliest attempts by the Indian government to establish a comprehensive legal framework for managing water pollution. One of its major strengths lies in the creation of the **Central Pollution Control Board (CPCB)** and the **State Pollution Control Boards (SPCBs)**, which together form the institutional backbone of India's water quality regulation system. The Act empowers these bodies to set effluent standards for industries, monitor water quality, and enforce compliance through a mandatory "consent to establish" and "consent to operate" mechanism, ensuring that industrial units cannot function without regulatory approval. Despite these strengths, the Act suffers from significant weaknesses that have hindered its effective implementation. The enforcement powers granted to the Pollution Control Boards remain limited, often restricting their ability to curb persistent violations. Additionally, the Act places heavy reliance on SPCBs, many of which struggle with chronic understaffing, inadequate technical capacity, and financial constraints. The penalties prescribed for non-compliance are comparatively low, reducing their deterrent effect. Furthermore, prior to the establishment of the National Green Tribunal (NGT), citizens lacked independent standing to initiate environmental litigation under this Act, limiting public participation in water

protection. As a result, the effectiveness of the Water Act has been compromised by weak enforcement mechanisms and institutional limitations.

Recent technological advancements, such as the introduction of **online continuous effluent monitoring systems (OCEMS)**, have attempted to improve compliance under the Water Act. However, many industries either manipulate the data or bypass treatment systems entirely during non-operational hours. The severe shortage of wastewater treatment plants in urban centres further burdens the enforcement system—more than **60% of sewage in India remains untreated**, flowing directly into rivers and lakes. Initiatives such as the **National River Conservation Plan (NRCP)** and **National Water Policy** have tried to integrate river basin management with pollution control, but the lack of a unified legal framework for water governance continues to hinder progress. A potential reform is the introduction of a **National Clean Water Law** that consolidates existing provisions and creates a uniform enforcement mechanism across states.

3. Forest (Conservation) Act, 1980

The Forest (Conservation) Act, 1980 was enacted as a crucial legislative intervention to address the rapid decline of India's forest cover and to regulate the diversion of forest land for non-forest purposes. One of the Act's key strengths lies in its requirement that no forest land can be de-reserved or diverted without the **prior approval of the Central Government**, thereby curbing arbitrary decisions by state authorities and providing strong legal protection to forest areas. By centralizing control, the Act effectively aimed to slow down deforestation and ensure that any proposed land use change was subject to rigorous scrutiny, environmental assessment, and compensatory afforestation requirements. However, despite its robust legal structure, the Act faces several persistent challenges in practice. Development pressures from sectors such as mining, infrastructure, power projects, and large-scale construction often conflict with forest conservation objectives, leading to contentious clearance procedures. Furthermore, inadequate recognition and settlement of **tribal and forest-dwelling communities' rights**—particularly in regions where traditional livelihoods depend on forest resources—has caused frequent socio-environmental tensions. The Act also struggles to combat **illegal mining, forest encroachment, and unauthorized timber extraction**, which continue to pose significant threats despite legal safeguards. Thus, while the Forest (Conservation) Act has undeniably strengthened the protection of forest land,

its implementation remains constrained by competing developmental priorities, governance gaps, and unresolved issues related to community rights.

The growing debate on forest diversion has also raised questions about the ecological value of "deemed forests," private forests, and unclassified forest lands that do not fall under the recorded forest category. Several states have attempted to redefine forest boundaries, sometimes in ways that weaken conservation standards. Meanwhile, climate change has intensified forest fires, pest infestations, and biodiversity loss, necessitating a more climate-resilient approach to forest governance. Ecologists argue for a shift from compensatory afforestation toward **ecosystem restoration**, which emphasizes soil, water, and biodiversity regeneration rather than mere plantation metrics. Strengthening forest rights and empowering local communities through decentralised governance mechanisms such as **Joint Forest Management (JFM)** can significantly improve conservation outcomes.

4. Air (Prevention & Control of Pollution) Act, 1981

The Air (Prevention and Control of Pollution) Act, 1981 was enacted to address the rising levels of air pollution resulting from industrial growth, vehicular emissions, and rapid urban expansion. The Act established dedicated **monitoring and regulatory bodies**, namely the Central and State Pollution Control Boards, which are empowered to set emission standards for industries, thermal power plants, and other air-polluting sources. It also provides a structured regulatory mechanism requiring industries to obtain consent before establishing or operating units that may contribute to air pollution, thereby integrating environmental considerations into industrial planning and authorization processes. Despite these strengths, the Act faces several critical limitations that hinder its effectiveness. Compliance monitoring remains weak due to inadequate manpower, insufficient technical infrastructure, and irregular inspections. The pace of **urbanization and industrialization** has significantly outstripped the regulatory capacity of pollution control boards, leading to persistent air quality deterioration in major cities. Additionally, the Act did not initially provide avenues for **citizen participation** or allow individuals to independently initiate legal action against violators, a gap that remained until expanded judicial interventions and the establishment of the National Green Tribunal. Consequently, while the Air Act provides a strong legal foundation, its implementation continues to be challenged

by institutional constraints and an increasing enforcement burden

Recent air quality analyses indicate that nearly **70% of Indian cities** fail to meet national ambient air quality standards. Stubble burning in northern India, emissions from brick kilns, diesel generators, and rapid vehicular growth contribute heavily to seasonal air pollution events, particularly in the Indo-Gangetic Plain. The Air Act does not adequately address new sources of pollution such as construction dust, microplastics, and household emissions. Additionally, enforcement remains highly centralised, limiting the role of municipalities and local bodies in air quality management. To strengthen the Act, experts recommend adopting a **multi-sectoral "airshed management" approach**, establishing city-level clean air cells, and expanding the legal framework to include climate pollutants such as black carbon and methane.

5. Environment (Protection) Act, 1986

The Environment (Protection) Act, 1986 stands as the most comprehensive umbrella legislation in India's environmental legal framework, enacted in the aftermath of the **Bhopal Gas Tragedy** to address the glaring gaps in the country's regulatory mechanisms. Designed to provide a holistic and integrated approach to environmental management, the Act empowers the **Central Government** to issue wide-ranging rules, notifications, and standards relating to air, water, soil, noise, hazardous substances, and overall environmental quality. One of its principal strengths lies in its broad discretionary authority, which includes the power to **shut down or regulate polluting industries**, mandate pollution control technologies, and respond swiftly to environmental emergencies. The Act also forms the statutory basis for pivotal regulatory measures such as the **Environmental Impact Assessment (EIA) Notification of 2006**, which governs the environmental clearance process for various development projects. Moreover, it grants the government emergency response powers, enabling timely action in cases involving hazardous substances or industrial accidents.

Despite its expansive scope, the Act suffers from several structural and operational limitations. The centralization of powers often results in administrative delays and uneven implementation across states. Environmental clearances—intended to ensure thorough evaluation—are frequently delayed or compromised due to bureaucratic bottlenecks and political pressures. Furthermore, the Act's penalty provisions are criticized for being **vague and insufficiently deterrent**, limiting their effectiveness against

persistent violators. Monitoring of hazardous industries remains weak, with inadequate inspections, limited technical capacity, and insufficient coordination between regulatory agencies. Thus, although the Environment (Protection) Act provides a robust legal framework for environmental governance, its success is constrained by institutional inefficiencies and enforcement challenges.

The EPA has also spawned key environmental regulations such as the Coastal Regulation Zone (CRZ) Notifications, Solid Waste Management Rules, E-Waste Management Rules, and Plastic Waste Management Rules, making it the most versatile instrument in Indian environmental law. However, the absence of an independent regulatory authority under the Act reduces accountability. Environmental clearances often face allegations of procedural irregularities, inadequate impact assessments, and cursory public hearings. Environmental experts argue that the EPA should be amended to include provisions for environmental courts at district levels, mandatory environmental audits, and third-party verification of compliance reports. Integrating artificial intelligence, satellite monitoring, and blockchain technologies may greatly improve transparency and compliance accuracy.

6. Other Supporting Legislations

In addition to the primary environmental statutes, several supplementary legislations play a critical role in strengthening India's environmental governance framework. The **Public Liability Insurance Act, 1991** was enacted to ensure immediate relief to victims of accidents involving hazardous substances, thereby establishing a liability and compensation mechanism independent of lengthy civil litigation. The **National Environment Tribunal Act, 1995** sought to create a specialized adjudicatory body for cases involving environmental harm arising from hazardous activities, although its practical impact remained limited and it was later replaced by the National Green Tribunal Act, 2010. The **Biological Diversity Act, 2002** represents a major step toward conserving India's rich biodiversity by regulating access to biological resources, protecting traditional knowledge, and promoting equitable benefit-sharing with local communities. Additionally, the **Hazardous Waste (Management and Handling) Rules, 1989**, later revised comprehensively in **2016**, set guidelines for the safe handling, storage, transport, and disposal of hazardous waste to minimize environmental risks. Collectively, these legislations broaden the scope of environmental protection in India by addressing specific thematic areas such as

liability, biodiversity, and hazardous substances. However, despite their importance, these laws often suffer from **fragmented implementation**, limited coordination among regulatory bodies, and inadequate monitoring mechanisms, which reduce their overall effectiveness and integration within the larger environmental governance system.

The growing complexity of environmental issues has led to the introduction of specialized rules addressing emerging threats. For example, the **National Green Tribunal Act, 2010**, has transformed environmental litigation by providing speedy remedies, scientific expertise, and strict application of the "polluter pays" and "precautionary" principles. The **Climate Change Action Plans** at the state level and India's commitments under the **Paris Agreement** have further expanded the environmental governance landscape. However, the coexistence of multiple laws and agencies often results in overlapping roles and inconsistent enforcement. This underscores the need for a **comprehensive environmental code**, consolidating various environmental statutes into a unified framework to ensure coherence, simplicity, and efficiency.

7. Structural Challenges in Enforcement

Despite the existence of a comprehensive statutory framework, environmental governance in India continues to be hindered by several deep-rooted structural challenges that undermine effective implementation. Foremost among these is the chronic **understaffing and underfunding** of the Central and State Pollution Control Boards, which significantly limits their ability to conduct inspections, monitor compliance, or enforce environmental standards. Weak **inter-agency coordination** between central authorities, state governments, local bodies, and sector-specific regulators further complicates enforcement efforts, often resulting in overlapping mandates, administrative delays, and fragmented decision-making. Political and economic pressures frequently influence **industrial approval processes**, where the prioritization of developmental projects can overshadow environmental considerations. Moreover, the absence of **real-time monitoring systems**, particularly for air and water quality, hinders timely detection of violations and compromises regulatory responsiveness. Many regulatory bodies also lack adequate **scientific and technical expertise**, leading to suboptimal environmental assessments and poorly informed policy decisions. Finally, **weak prosecution and low conviction rates** for environmental offences significantly dilute the deterrent effect of environmental regulations. Consequently, even well-designed

legislation fails to achieve its intended outcomes due to persistent institutional, technical, and administrative constraints.

One of the most persistent challenges in India's environmental governance is the lack of strong environmental data systems. Environmental reporting is often outdated, incomplete, or inconsistent across states, making evidence-based policymaking difficult. Further, capacity building for environmental officers, inspectors, and local institutions remains inadequate. A recurring criticism is that environmental clearance processes prioritize speed over ecological integrity, often resulting in compromised assessments. Regulatory capture—where industries influence regulators—also weakens accountability. Strengthening environmental governance will require investment in institutional capacity, transparent leadership, public-accessible environmental data, and decentralized enforcement mechanisms.

8. Conclusion

India's environmental legal framework is among the most comprehensive in the developing world, spanning pollution control, forest conservation, biodiversity protection, hazardous waste regulation, and environmental impact assessment. Yet, the real-world effectiveness of these laws is significantly hindered by governance deficits, institutional weaknesses, and uneven enforcement across states. Despite strong statutory provisions, Pollution Control Boards often lack the manpower, financial resources, and technical capacity required to implement environmental mandates effectively. Political pressures, fragmented institutional responsibilities, and delays in environmental clearances further dilute regulatory outcomes.

Judicial bodies—especially the Supreme Court and the National Green Tribunal—have played a transformative role by expanding environmental rights and ensuring accountability. However, judicial interventions alone cannot substitute for strong administrative institutions. The persistent gaps between legislative intent and administrative execution highlight the need for a systemic overhaul, grounded in transparency, scientific governance, and community empowerment.

Strengthening environmental governance will require enhancing regulatory capacity, adopting digital and real-time monitoring technologies, improving inter-agency coordination, and ensuring meaningful public participation in environmental decision-making. Ultimately, environmental protection in India must move beyond compliance-driven frameworks toward a holistic, science-based, and community-engaged approach if sustainable development is to be realized.

Looking ahead, India must move toward an integrated and forward-looking environmental governance model. This involves developing a **National Environmental Regulatory Authority** with scientific autonomy, transitioning to green technologies, strengthening inter-state cooperation, and ensuring that environmental justice reaches vulnerable communities. The future of India's environmental governance depends not only on robust statutory frameworks but also on administrative integrity, scientific innovation, and public participation. Only through such comprehensive reforms can India reconcile its developmental aspirations with ecological sustainability.

Reference-

1. Government of India, *The Water (Prevention and Control of Pollution) Act, 1974*, Ministry of Law and Justice.
2. Central Pollution Control Board (CPCB), *Annual Report*, Government of India (Various Years).
3. United Nations, *Report of the United Nations Conference on the Human Environment (Stockholm, 1972)*, UN Publications.
4. Ministry of Environment & Forests, *The Water (Prevention & Control of Pollution) Rules*, Government Notification, 1975.
5. Khosla, A. "Water Governance in India: A Policy Review," *Economic and Political Weekly*, 2017.
6. Gadgil, M., and Guha, R., *This Fissured Land: An Ecological History of India*, University of California Press, 1993.
7. Government of India, *The Forest (Conservation) Act, 1980*, Ministry of Law and Justice.
8. Singh, S., "Forest Governance and Tribal Rights in India," *Indian Journal of Public Administration*, 2020.
9. National Remote Sensing Centre (NRSC), *Forest Cover Change Assessment in India*, ISRO Report, 2019.
10. Government of India, *The Air (Prevention and Control of Pollution) Act, 1981*.
11. Guttikunda, S., "Air Pollution in Indian Cities: A Review," *Urban Climate*, 2019.
12. TERI (The Energy and Resources Institute), *India's Urban Air Quality: Policy and Trends*, TERI Policy Paper (2021).
13. Government of India, *The Environment (Protection) Act, 1986*.
14. Ministry of Environment, Forest and Climate Change (MoEFCC), *Environmental Impact Assessment Notification, 2006*.

15. Rajamani, L., "The Nature, Scope and Limits of the Environment Protection Act," *Journal of Environmental Law*, 2012.

16. Supreme Court of India, *M.C. Mehta vs. Union of India*, AIR 1987 SC 1086 (Ganga Pollution Case).

17. National Green Tribunal Act, 2010, Government of India.

18. Sengupta, R., "NGT and Environmental Justice in India," *EPW*, 2018.

19. Government of India, *Biological Diversity Act, 2002*.

20. UNEP, *India: Biodiversity and Environmental Governance Report*, United Nations Environment Programme, 2020.

21. Press Information Bureau (PIB), Government of India, *Hazardous Waste Management Rules, 2016*.

22. Mahapatra, R., "Hazardous Waste Governance in India," *Down To Earth*, 2019.

23. Comptroller and Auditor General of India (CAG), *Performance Audit on Pollution Control Boards*, 2019.

24. Jalal, I., "Environmental Regulation and Enforcement Challenges in India," *International Journal of Environmental Studies*, 2021.

25. WWF India, *Living Planet Report – India*, 2020.

26. Planning Commission of India, *Evaluation Study on Environmental Policies*, 2013.

27. Lok Sabha Secretariat, *Standing Committee Report on Environment and Forests*, 2022.