

## **ENVIRONMENTAL GOVERNANCE AND POLLUTION CONTROL IN MADHYA PRADESH: A CRITICAL APPRAISAL OF THE NATIONAL GREEN TRIBUNAL AND LEGISLATIVE FRAMEWORK**

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### **ABSTRACT**

*Environmental protection has emerged as one of the most significant concerns of modern governance due to the increasing impact of industrialization, urbanization, and resource exploitation on ecological systems. India has experienced rapid economic growth during the last few decades; however, this development has simultaneously generated serious environmental challenges including air pollution, water contamination, land degradation, biodiversity loss, and improper waste management. Madhya Pradesh, often described as the “Heart of India,” possesses vast natural resources including forests, rivers, wildlife habitats, and mineral reserves. Despite its ecological richness, the state faces increasing environmental pressures resulting from industrial expansion, mining operations, thermal power generation, urban growth, and developmental activities. The constitutional commitment towards environmental protection, reinforced through judicial interpretation and legislative action, has led to the establishment of an extensive environmental regulatory framework. The National Green Tribunal (NGT), established under the National Green Tribunal Act, 2010, has emerged as a specialized environmental adjudicatory body aimed at ensuring effective and expeditious disposal of environmental disputes. The Tribunal has significantly contributed to environmental governance by enforcing environmental standards and promoting sustainable development principles. The present study critically examines environmental pollution in Madhya Pradesh with particular reference to statutory environmental laws and the role of the National Green Tribunal. The study evaluates constitutional provisions, environmental legislation, regulatory institutions, and judicial interventions relating to environmental protection. It further analyzes the effectiveness of environmental governance mechanisms and identifies challenges affecting implementation. The study concludes that although India possesses a comprehensive legal framework for environmental protection, greater institutional efficiency, public participation, and effective enforcement mechanisms are required to achieve sustainable environmental management in Madhya Pradesh.*

**Keywords:** Environmental Governance, National Green Tribunal, Pollution Control, Madhya Pradesh, Sustainable Development, Environmental Justice.

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## I. Introduction

The Environmental degradation has become a major global concern affecting ecological balance, public health, economic development, and human survival. The relationship between development and environmental sustainability has become increasingly complex due to growing industrial activities, urbanization, population expansion, and excessive utilization of natural resources. While development remains essential for economic progress, its environmental consequences often threaten ecological systems and long-term sustainability.

India has witnessed remarkable economic growth since liberalization; however, this growth has also intensified environmental challenges. Air pollution, water contamination, deforestation, climate change, and waste management problems have emerged as critical issues requiring legal and institutional intervention. Environmental concerns are no longer confined to scientific or administrative discussions but have become important constitutional, legal, and human rights issues.

Madhya Pradesh occupies a unique position within India's environmental landscape. The state contains extensive forest cover, wildlife sanctuaries, rivers, wetlands, and mineral resources. It contributes significantly to India's biodiversity conservation efforts. However, increasing industrialization, mining activities, infrastructure development, and urban growth have generated substantial environmental pressures. Industrial regions such as Pithampur, Mandideep, Malanpur, and Singrauli have become major contributors to environmental pollution.

The environmental challenges faced by Madhya Pradesh include air pollution from thermal power plants and industrial emissions, contamination of water bodies through industrial discharge and sewage disposal, land degradation caused by mining activities, and biodiversity loss resulting from deforestation and habitat destruction. These concerns highlight the necessity of strong environmental governance mechanisms.

India's environmental governance framework is based upon constitutional mandates, statutory regulations, regulatory institutions, and judicial oversight. Among these mechanisms, the National Green Tribunal represents a significant institutional innovation aimed at ensuring specialized environmental justice. Through its jurisdiction over environmental disputes and application of environmental principles, the Tribunal has emerged as an important instrument of environmental protection.

The present research seeks to examine environmental pollution control in Madhya Pradesh through the combined perspective of statutory environmental laws and National Green Tribunal interventions.

## **II. Objectives of the Study**

The study aims to achieve the following objectives:

1. To examine the nature and extent of environmental pollution in Madhya Pradesh.
2. To analyze constitutional provisions relating to environmental protection.
3. To examine statutory environmental laws governing pollution control.
4. To evaluate the role of the National Green Tribunal in environmental governance.
5. To assess environmental challenges and implementation gaps in Madhya Pradesh.
6. To suggest measures for strengthening environmental protection and sustainable development.

## **III. Research Methodology**

The present study adopts a doctrinal and analytical research methodology. The research is primarily based upon secondary sources including constitutional provisions, environmental statutes, judicial decisions, government reports, environmental policy documents, books, journals, and reports published by environmental institutions. Relevant judgments of the Supreme Court, High Courts, and National Green Tribunal have been examined to evaluate the development of environmental jurisprudence. The study further analyses report of the Madhya Pradesh Pollution Control Board and environmental regulatory authorities.

## **IV. Review of Literature**

Environmental governance has attracted considerable scholarly attention in India. Researchers have extensively examined environmental legislation, judicial activism, environmental rights, and sustainable development.

Divan and Rosencranz emphasize that environmental law in India has evolved through judicial creativity and constitutional interpretation. Their work highlights the role of public interest litigation and environmental jurisprudence in strengthening environmental protection.

Shyam Divan argues that environmental governance in India reflects a continuous struggle between developmental objectives and ecological sustainability. He observes that

environmental laws provide extensive regulatory mechanisms but often suffer from weak implementation.

Scholars studying the National Green Tribunal have recognized its importance in improving environmental adjudication and reducing delays associated with environmental litigation. The Tribunal's specialized jurisdiction has contributed significantly to environmental accountability.

Research relating to Madhya Pradesh has primarily focused on industrial pollution, mining activities, forest conservation, river pollution, and waste management. Studies concerning the Singrauli region have highlighted the environmental consequences of coal mining and thermal power generation. Urban studies relating to Bhopal and Indore emphasize challenges concerning waste management and urban pollution.

The existing literature demonstrates that although India possesses an extensive environmental legal framework, effective implementation remains a significant challenge.

#### **V. Constitutional Framework of Environmental Protection**

The Constitution of India provides the normative foundation for environmental governance. Article 48A directs the State to protect and improve the environment and safeguard forests and wildlife. Article 51A(g) imposes a duty upon citizens to protect and improve the natural environment.

The judiciary has significantly expanded environmental rights through interpretation of Article 21. The Supreme Court has repeatedly held that the right to life includes the right to a healthy and pollution-free environment.

In *M.C. Mehta v. Union of India*, the Court adopted a proactive approach toward environmental protection. In *Subhash Kumar v. State of Bihar*, the Court recognized the right to pollution-free water and air as an integral component of Article 21. The constitutional framework has thus transformed environmental protection into an essential component of human rights and governance.

#### **VI. Environmental Pollution Scenario in Madhya Pradesh**

Madhya Pradesh occupies a strategically significant position within India's environmental landscape because of its rich natural resources, extensive forest cover, diverse ecosystems, and mineral wealth. The state accounts for one of the largest forest areas in India and is home to

several nationally important wildlife reserves, including Kanha, Bandhavgarh, Pench, Satpura, and Panna National Parks. Despite these ecological advantages, increasing developmental activities have exerted considerable pressure on environmental resources. The process of industrialization, urbanization, infrastructure development, and resource extraction has generated complex environmental challenges affecting air, water, land, forests, and biodiversity.

Air pollution has emerged as a significant environmental concern in urban and industrial regions of the state. The growth of vehicular traffic, industrial emissions, thermal power plants, construction activities, and biomass burning contribute substantially to deteriorating air quality. Industrial centres such as Pithampur, Mandideep, Malanpur, and Singrauli have experienced increasing levels of atmospheric pollution due to emissions from manufacturing industries and energy production units. Suspended particulate matter, sulphur dioxide, nitrogen oxides, and other pollutants adversely affect public health and ecological systems. Studies indicate that prolonged exposure to polluted air increases the risk of respiratory diseases, cardiovascular disorders, and reduced quality of life among affected populations.

Water pollution represents another major environmental challenge in Madhya Pradesh. Rivers such as the Narmada, Chambal, Betwa, Son, and Tapti constitute important water resources for domestic, agricultural, and industrial purposes. However, increasing discharge of untreated sewage, industrial effluents, agricultural runoff, and solid waste has contributed to water contamination. Urban centers often lack adequate sewage treatment infrastructure, resulting in direct discharge of wastewater into rivers and water bodies. Industrial activities release pollutants including heavy metals, toxic chemicals, and hazardous substances that affect aquatic ecosystems and groundwater quality. Water pollution not only threatens biodiversity but also undermines public health and economic productivity.

Land degradation and soil pollution have intensified due to mining activities, industrial waste disposal, excessive use of chemical fertilizers, and unsustainable agricultural practices. Mining operations in districts such as Singrauli, Balaghat, Chhindwara, and Katni have resulted in deforestation, soil erosion, and contamination of land resources. The accumulation of industrial waste and hazardous substances adversely affects soil fertility and agricultural productivity. Furthermore, urban expansion and infrastructure projects have contributed to the conversion of agricultural and forest land into built-up areas, thereby altering ecological balance.

Biodiversity conservation has become increasingly challenging due to habitat fragmentation, illegal mining, deforestation, and encroachment. Although Madhya Pradesh continues to be recognized as a biodiversity-rich state, anthropogenic pressures have affected wildlife habitats and ecological connectivity. Environmental degradation therefore poses multidimensional challenges requiring comprehensive legal, institutional, and policy interventions.

## VII. Statutory Framework Governing Environmental Protection

The environmental regulatory framework in India has evolved considerably over the last five decades. Environmental legislation seeks to regulate human activities that adversely affect ecological systems while promoting sustainable development. The legal framework governing environmental protection in Madhya Pradesh derives primarily from national environmental statutes implemented through central and state regulatory institutions.

The Water (Prevention and Control of Pollution) Act, 1974 represents one of the earliest comprehensive environmental statutes enacted in India. The Act aims to prevent and control water pollution and maintain the wholesomeness of water resources. It established the Central Pollution Control Board and State Pollution Control Boards and empowered these institutions to monitor water quality, regulate industrial discharges, and enforce pollution control standards. The legislation provides regulatory mechanisms for obtaining consent before establishing or operating industries likely to discharge pollutants into water bodies.

The Air (Prevention and Control of Pollution) Act, 1981 was enacted to address growing concerns relating to atmospheric pollution. The legislation authorizes pollution control authorities to establish emission standards, regulate industrial emissions, monitor air quality, and designate air pollution control areas. The Act plays a critical role in addressing pollution generated by industries, vehicles, thermal power plants, and construction activities.

The Environment (Protection) Act, 1986 constitutes umbrella legislation for environmental governance in India. Enacted following the Bhopal Gas Disaster, the Act grants extensive powers to the Central Government to take measures necessary for environmental protection and improvement. The legislation facilitates the formulation of environmental standards, regulation of hazardous substances, environmental impact assessments, and implementation of pollution control measures. Numerous environmental rules and regulations have been framed under this Act, making it one of the most important instruments of environmental governance.

The Forest (Conservation) Act, 1980 seeks to regulate the diversion of forest land for non-forest purposes and promote forest conservation. The legislation has played a significant role in reducing indiscriminate deforestation and preserving ecological balance. Similarly, the Biological Diversity Act, 2002 aims to conserve biological diversity, ensure sustainable utilization of biological resources, and facilitate equitable sharing of benefits arising from biodiversity utilization.

In addition to these statutes, various subordinate legislations including the Solid Waste Management Rules, Plastic Waste Management Rules, Biomedical Waste Management Rules, Hazardous Waste Management Rules, and E-Waste Management Rules contribute significantly to pollution prevention and environmental management. Collectively, these legal instruments create a comprehensive framework for environmental governance.

### **VIII. Madhya Pradesh Pollution Control Board**

The Madhya Pradesh Pollution Control Board (MPPCB) serves as the principal environmental regulatory authority responsible for implementing environmental laws within the state. Established under the Water Act, 1974 and entrusted with additional responsibilities under the Air Act, 1981 and Environment Protection Act, 1986, the Board plays a pivotal role in environmental monitoring and enforcement.

The Board's primary functions include granting environmental clearances and consent certificates, monitoring industrial compliance, conducting environmental inspections, collecting environmental samples, and initiating legal action against violators. It is also responsible for maintaining environmental databases and coordinating with governmental agencies involved in environmental management.

The MPPCB has established regional offices and monitoring stations across the state to ensure effective implementation of environmental regulations. Through continuous monitoring of industrial emissions, wastewater discharges, and environmental quality indicators, the Board seeks to prevent environmental degradation and ensure compliance with statutory standards.

Despite its important role, the Board faces several operational challenges. These include inadequate staffing, financial constraints, technological limitations, and increasing regulatory responsibilities arising from expanding industrial and urban activities. Strengthening the institutional capacity of the MPPCB remains essential for improving environmental governance and regulatory effectiveness.

## **IX. National Green Tribunal and Environmental Justice**

The establishment of the National Green Tribunal under the National Green Tribunal Act, 2010 marked a significant development in India's environmental governance framework. The Tribunal was established to provide a specialized judicial forum for the effective and expeditious disposal of environmental disputes involving substantial environmental questions.

The NGT represents a departure from traditional litigation mechanisms by combining legal expertise with scientific and technical knowledge. The Tribunal is empowered to adjudicate disputes arising under major environmental statutes and possesses authority to grant relief, compensation, and restitution in environmental matters.

One of the most important contributions of the NGT lies in its application of internationally recognized environmental principles. The principle of sustainable development requires balancing environmental protection with economic development. The precautionary principle mandates preventive action in situations involving environmental risk, even where scientific certainty is lacking. The polluter-pays principle requires polluters to bear the financial costs associated with environmental damage and restoration.

The Tribunal has significantly improved access to environmental justice by providing a specialized forum capable of addressing complex environmental disputes. It has enhanced accountability among industries, governmental authorities, and regulatory institutions while strengthening enforcement of environmental standards.

## **X. Significant NGT Interventions in Madhya Pradesh**

The National Green Tribunal has played a proactive role in addressing environmental concerns in Madhya Pradesh. Several important matters concerning industrial pollution, waste management, mining activities, and water pollution have been brought before the Tribunal.

One of the most significant areas of intervention relates to environmental degradation in the Singrauli region. The Tribunal has examined issues concerning coal mining operations, thermal power generation, fly ash disposal, groundwater contamination, and air pollution. Through various orders and directions, the NGT has sought to ensure compliance with environmental norms and promote restoration of affected ecosystems.

The Tribunal has also addressed river pollution and water contamination issues. It has issued directions concerning sewage treatment infrastructure, prevention of industrial discharges,

restoration of water bodies, and protection of aquatic ecosystems. These interventions have highlighted the importance of environmental compliance by local authorities and industrial establishments.

Waste management has emerged as another important area of NGT intervention. Municipal authorities have frequently been directed to improve solid waste management systems, establish scientific waste disposal facilities, and comply with environmental regulations. The Tribunal has emphasized the responsibility of urban local bodies to ensure environmentally sound waste management practices.

The NGT has also dealt extensively with illegal mining activities and environmental violations associated with extraction of natural resources. Its decisions have reinforced environmental accountability and contributed significantly to the development of environmental jurisprudence in India.

## **XI. Challenges in Environmental Governance**

Despite the existence of comprehensive environmental legislation and specialized institutions, environmental governance in Madhya Pradesh continues to face several challenges. One of the most significant challenges relates to weak implementation of environmental laws. Regulatory agencies often encounter difficulties in monitoring compliance and enforcing environmental standards.

Institutional limitations constitute another major obstacle. Environmental agencies frequently operate with limited financial resources, inadequate technical expertise, and insufficient infrastructure. These constraints reduce their capacity to effectively regulate increasingly complex environmental issues.

Rapid urbanization and industrialization have further intensified environmental pressures. Expanding cities generate substantial quantities of waste, increase demand for natural resources, and contribute to environmental degradation. Similarly, industrial development creates challenges relating to emissions, waste disposal, and resource utilization.

Public participation in environmental decision-making remains relatively limited. Environmental awareness among citizens and local communities is often inadequate, reducing opportunities for community-based environmental monitoring and accountability.

The coexistence of developmental objectives and environmental protection requirements creates policy dilemmas. Governments frequently face pressure to prioritize economic growth and infrastructure development, sometimes at the expense of environmental sustainability. Balancing these competing interests remains one of the most difficult aspects of environmental governance.

## **XII. Findings of the Study**

The study reveals that Madhya Pradesh possesses significant ecological resources that are increasingly threatened by developmental pressures. Environmental pollution within the state is closely associated with industrialization, urbanization, mining activities, and inadequate waste management systems.

The constitutional framework provides a strong normative basis for environmental protection, while statutory laws establish comprehensive mechanisms for pollution control and environmental management. The National Green Tribunal has emerged as an effective institution for environmental adjudication and enforcement of environmental principles.

However, the study finds that implementation gaps continue to undermine environmental governance. Regulatory institutions often face capacity constraints, and compliance levels remain unsatisfactory in several sectors. Public participation in environmental decision-making remains limited, and environmental awareness requires further strengthening.

The study further demonstrates that judicial interventions have significantly advanced environmental protection by promoting accountability and reinforcing environmental principles. Nevertheless, long-term environmental sustainability requires stronger administrative commitment and institutional effectiveness.

## **XIII. Suggestions and Recommendations**

Effective environmental governance in Madhya Pradesh requires a multifaceted approach involving legal reforms, institutional strengthening, technological innovation, and public participation. Environmental enforcement mechanisms should be strengthened through enhanced monitoring systems and stricter penalties for violations.

The institutional capacity of the Madhya Pradesh Pollution Control Board should be improved through increased funding, recruitment of technical experts, modernization of monitoring infrastructure, and adoption of digital compliance systems. Technological innovations such as

remote sensing, geographic information systems, and real-time environmental monitoring can significantly improve regulatory effectiveness.

Public awareness programs should be expanded to promote environmental literacy and encourage citizen participation in environmental governance. Educational institutions, civil society organizations, and local communities should play a greater role in environmental conservation initiatives.

Industrial establishments should be encouraged to adopt cleaner technologies, renewable energy systems, and sustainable production practices. Environmental impact assessment procedures should be strengthened to ensure comprehensive evaluation of developmental projects.

Finally, greater coordination among governmental agencies, regulatory authorities, local bodies, industries, and community organizations is essential for achieving sustainable environmental management. Environmental governance should be viewed not merely as a regulatory function but as a collective responsibility aimed at safeguarding ecological resources for future generations.

#### **XIV. Conclusion**

Environmental protection has become indispensable for sustainable development and human well-being. Madhya Pradesh's ecological significance makes environmental governance particularly important within the state. Although constitutional provisions, statutory laws, regulatory institutions, and judicial mechanisms collectively provide a strong environmental framework, significant challenges remain in implementation and enforcement.

The National Green Tribunal has emerged as an important institution for environmental justice by ensuring accountability and effective dispute resolution. Through its interventions, the Tribunal has strengthened environmental governance and promoted sustainable development principles.

However, legal mechanisms alone cannot ensure environmental sustainability. Effective environmental governance requires institutional efficiency, technological advancement, public participation, environmental awareness, and political commitment. A coordinated and sustainable approach is essential to preserve the ecological heritage of Madhya Pradesh and protect the rights of future generations.

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