The Indian Journal for Research in Law and Management

Open Access Law Journal – Copyright © 2026

Editor-in-Chief – Dr. Muktai Deb Chavan; Publisher – Alden Vas; ISSN: 2583-9896

ENVIRONMENTAL LAW IN INDIA: POLLUTION CONTROL, CLIMATE CHANGE LAW, AND WILDLIFE PROTECTION

~ Shiva Priyan M

I. Introduction

India occupies a unique and paradoxical position in global environmental governance. It is simultaneously one of the world's most biodiverse nations — home to approximately eight per cent of the world's recorded species, seventeen biodiversity hotspots, and some of the planet's most ecologically significant river systems, forests, wetlands, and coastal zones — and one of its most environmentally stressed. With a population exceeding 1.4 billion, rapid industrialisation, an agriculture sector under chronic pressure, and urbanisation proceeding at an unprecedented pace, India's natural environment faces pressures of extraordinary intensity. Air pollution in its major cities regularly reaches levels described by the World Health Organisation as hazardous; its rivers carry some of the highest pollutant loads in the world; its forest cover continues to decline despite legal protections; and its wildlife faces the combined threats of habitat loss, poaching, human-wildlife conflict, and the accelerating consequences of climate change.

The legal response to these environmental challenges has been substantial in legislative ambition, if uneven in operational effectiveness. India has enacted a comprehensive framework of environmental legislation over the past five decades, encompassing pollution control, environmental impact assessment, forest protection, biodiversity conservation, and wildlife protection. The constitutional foundation of this framework — particularly the right to a healthy environment implied by Article 21 of the Constitution and the directive principles of state environmental stewardship under Articles 48A and 51A(g) — has been progressively elaborated by a Supreme Court that has, in the field of environmental law, been among the most activist in the world. India has also engaged substantively with the international climate regime, making commitments under the United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement that have significant implications for its domestic legal and policy framework.

This paper analyses Indian environmental law under three principal heads. Part I examines the law of pollution control — the legislative framework, institutional architecture, and judicial enforcement of standards governing air, water, and land pollution. Part II examines India's emerging climate change law — the domestic legal framework for climate governance, India's international commitments, and the nascent climate litigation jurisprudence. Part III examines wildlife protection law — the statutory regime for the conservation of wild animals and their habitats, the enforcement challenges, and the emerging tensions between conservation, community rights, and development imperatives. The paper concludes with a synthetic assessment of the strengths and weaknesses of India's environmental law framework and a set of recommendations for reform.

PART I: POLLUTION CONTROL

II. Constitutional Foundations of Environmental Law

A. The Environment in the Constitutional Text

The Constitution of India, as originally enacted in 1950, contained no express provision relating to the environment. The constitutional recognition of environmental protection came through the 42nd Constitutional Amendment of 1976, which inserted Article 48A — directing the state to endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country — and Article 51A(g) — imposing on every citizen a fundamental duty to protect and improve the natural environment including forests, lakes, rivers, and wildlife. Although directive principles and fundamental duties are not directly enforceable before courts, they have been extensively used by the Supreme Court as interpretive tools to give content to enforceable fundamental rights in the environmental context.

The most significant constitutional development in environmental law has been the judicial derivation of an implicit right to a clean and healthy environment from Article 21's guarantee of the right to life. In the landmark decision of *Subhash Kumar v. State of Bihar*,[1] the Supreme Court held that the right to life under Article 21 includes the right to the enjoyment of pollution-free water and air for full enjoyment of life. This constitutional grounding — equating environmental degradation with a violation of the most fundamental of all fundamental rights — has enabled citizens to approach the Supreme Court and High Courts directly, through public interest litigation, to seek enforcement of environmental standards and remediation of environmental harm.

B. The Doctrine of Public Trust

The Supreme Court has, in a series of decisions, imported into Indian environmental law the doctrine of public trust — the principle that certain natural resources, including rivers, forests, the seashore, and the air, are held in trust by the state for the benefit of the public and cannot be appropriated for private use in a manner inconsistent with their public character. In *M.C. Mehta v. Kamal Nath*,[2] the Court held that the state, as trustee of natural resources, has a constitutional obligation to prevent their degradation and to ensure their availability for present and future generations. The public trust doctrine has been invoked to challenge the diversion of forest land for commercial purposes, the encroachment of river banks, and the allocation of coastal land for private development, providing a robust constitutional basis for environmental enforcement that supplements the specific provisions of the pollution control statutes.

---

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

2 M.C. Mehta v. Kamal Nath, (1997) 1 SCC 388.

III. The Statutory Framework for Pollution Control

A. The Water (Prevention and Control of Pollution) Act, 1974

The Water (Prevention and Control of Pollution) Act, 1974 was India's first comprehensive environmental legislation and marked the beginning of the statutory framework for pollution control.[3] Enacted in the wake of the United Nations Conference on the Human Environment (Stockholm, 1972), the Act established the Central Pollution Control Board (CPCB) at the national level and State Pollution Control Boards (SPCBs) at the state level, tasked with setting effluent standards, issuing consents for the discharge of pollutants into water bodies, monitoring water quality, and prosecuting violations. The Act prohibits the discharge of polluting matter into streams, wells, sewers, and inland waters without the consent of the relevant SPCB, and empowers the Boards to direct the closure of defaulting industries.

The Water Act's enforcement record has been deeply disappointing. India's major rivers — the Ganga, the Yamuna, the Sabarmati, the Cooum — remain among the most heavily polluted in the world, notwithstanding decades of litigation, government schemes, and regulatory action. The State Pollution Control Boards have been chronically under-resourced, subject to political interference, and institutionally inclined toward accommodation of polluting industries rather than rigorous enforcement. The Supreme Court's observation in the Ganga pollution case that the Pollution Control Boards had 'failed in their statutory duty' has been repeated across a generation of environmental

litigation without producing structural change.

B. The Air (Prevention and Control of Pollution) Act, 1981

The Air (Prevention and Control of Pollution) Act, 1981 extends the pollution control board architecture to the regulation of air quality.[4] The Act empowers the CPCB and SPCBs to set ambient air quality standards, regulate emissions from industrial sources, and declare 'air pollution control areas' in which specific restrictions apply to the use of fuels and the operation of emission sources. The Act requires industries operating in air pollution control areas to obtain consent from the relevant SPCB.

India's air quality crisis — particularly in its northern cities, where the convergence of vehicular emissions, industrial pollution, crop burning, and meteorological conditions creates periods of air pollution that are among the worst recorded anywhere in the world — has exposed the profound inadequacy of the Air Act's enforcement framework. Delhi's air quality index has, during winter months, consistently reached levels described by public health experts as constituting a 'public health emergency.' The Commission for Air Quality Management in the National Capital Region and Adjoining Areas Act, 2021 — creating a dedicated statutory body for air quality management in the Delhi-NCR region — represents an acknowledgment of the failure of the existing SPCB-based framework to address the regional and transboundary character of the crisis.

C. The Environment (Protection) Act, 1986: The Framework Statute

The Environment (Protection) Act, 1986 was enacted in the aftermath of the Bhopal gas disaster — the world's worst industrial accident, in which the release of methyl isocyanate from Union Carbide's pesticide plant in Bhopal on the night of 2-3 December 1984 killed thousands of people and caused lasting health damage to hundreds of thousands more.[5] The catastrophe revealed that India's existing statutory framework was wholly inadequate for the regulation of hazardous industrial activities and the enforcement of environmental accountability. The Environment Protection Act was conceived as a framework statute — enabling the Central Government to take any measure it considered necessary for the protection and improvement of the environment, to set standards for emissions and discharges, to restrict industrial activities in environmentally sensitive areas, and to constitute authorities for environmental management.

The Act's most practically significant provision is the power of the Central Government to issue directions — including directions for closure, prohibition, or regulation of any industry, operation, or process — that override the provisions of any other law. This supremacy clause has been extensively used by the Supreme Court to direct environmental

remediation and industrial closure in cases where the specific pollution control statutes have proved inadequate. The Act also provides the statutory basis for the Environmental Impact Assessment (EIA) notification, which requires prior environmental clearance for a wide range of development projects — one of the most consequential and most contested instruments of Indian environmental governance.

D. The National Green Tribunal

The National Green Tribunal Act, 2010 established the National Green Tribunal (NGT) as a specialised forum for the adjudication of environmental disputes, providing for expeditious disposal of cases relating to environmental protection, the conservation of forests and other natural resources, and the enforcement of legal rights relating to the environment.[6] The NGT exercises original jurisdiction over substantial questions relating to the environment, appellate jurisdiction over environmental clearance decisions, and the power to award compensation for environmental damage and to impose penalties. Its composition — combining judicial and technical members with expertise in environmental science — is designed to bring both legal rigour and scientific understanding to environmental adjudication.

The NGT has, in its first decade of operation, emerged as one of the most active environmental adjudicatory bodies in the world. It has addressed air quality in Delhi, the pollution of the Yamuna and other rivers, the management of solid waste, the regulation of construction in coastal zones, and the environmental compliance of major industrial projects. However, the Tribunal's effectiveness has been hampered by resource constraints, frequent challenges to its jurisdiction, and the limited enforcement capacity of the state agencies that must implement its orders. The Supreme Court has, on occasion, found it necessary to supervise the implementation of NGT orders — suggesting that the NGT, while an important institutional innovation, has not yet resolved the enforcement deficit that has historically characterised Indian environmental regulation.

---

[3] Water (Prevention and Control of Pollution) Act, 1974, No. 6, Acts of Parliament, 1974 (India).

[4] Air (Prevention and Control of Pollution) Act, 1981, No. 14, Acts of Parliament, 1981 (India).

[5] Environment (Protection) Act, 1986, No. 29, Acts of Parliament, 1986 (India).

[6] National Green Tribunal Act, 2010, No. 19, Acts of Parliament, 2010 (India).

IV. Landmark Environmental Judgments: Judicial Activism in Pollution Control

A. M.C. Mehta v. Union of India: A Generation of Environmental Litigation

The litigation initiated by advocate M.C. Mehta before the Supreme Court in the 1980s constitutes the most significant and sustained chapter in the history of Indian environmental law. Through a series of writ petitions filed under Article 32 of the Constitution — invoking the Court's original jurisdiction for the enforcement of fundamental rights — Mehta brought before the Supreme Court the pollution of the Ganga, the operation of hazardous industries in the Delhi urban area, the degradation of the Taj Mahal by industrial pollution, the discharge of untreated sewage into water bodies, and a host of other environmental problems. The Court's treatment of these petitions — retaining jurisdiction over environmental matters for years and decades, issuing continuous mandamus directing government action, and appointing court-monitored committees to oversee implementation — established the template for environmental public interest litigation that has been replicated across India's High Courts and before the NGT.

In the Oleum Gas Leak case (*M.C. Mehta v. Union of India*, 1987),[7] arising from the leakage of oleum gas from a factory in Delhi, the Supreme Court formulated the principle of 'absolute liability' for hazardous industries — a rule of strict, non-delegable liability for harm caused by the escape of hazardous substances, admitting of no exceptions. The Court held that where an enterprise engaged in a hazardous or inherently dangerous activity causes harm, it is absolutely liable to compensate all those who are affected, and that this liability is not subject to the exceptions recognised by the older English rule in *Rylands v. Fletcher*. The absolute liability principle — more stringent than anything in the pre-existing common law — represents the Supreme Court's most significant substantive contribution to Indian environmental law.

B. The Precautionary Principle and the Polluter Pays Principle

In *Vellore Citizens' Welfare Forum v. Union of India*,[8] the Supreme Court explicitly recognised the precautionary principle and the polluter pays principle as part of Indian environmental law, holding that they had been absorbed into the domestic legal system through Article 253 of the Constitution (which empowers Parliament to legislate in conformity with international treaties) and through the constitutional environmental mandate of Articles 48A and 51A(g). The precautionary principle — which holds that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty shall not be used as a reason for postponing protective measures — has been extensively applied by courts in cases involving the burden of proof in environmental cases, placing on the developer or polluter the burden of demonstrating that its activities

will not cause environmental harm, rather than on the affected community to prove that harm will occur.

The polluter pays principle — which holds that the costs of pollution should be borne by the entity responsible for causing the pollution — has provided the legal basis for substantial compensation orders in pollution cases. The Supreme Court has directed industries to pay for the remediation of contaminated land, the treatment of polluted water bodies, and the restoration of affected ecosystems — establishing environmental remediation as a legally enforceable obligation rather than a discretionary governmental function.

---

[7] M.C. Mehta v. Union of India (Oleum Gas Leak), (1987) 1 SCC 395.

[8] Vellore Citizens' Welfare Forum v. Union of India, (1996) 5 SCC 647.

PART II: CLIMATE CHANGE LAW

V. India's International Climate Commitments

A. From Stockholm to Paris: India in the International Climate Regime

India has been an active and influential participant in the international climate negotiations since the negotiation of the United Nations Framework Convention on Climate Change (UNFCCC) at the Rio Earth Summit in 1992. India's engagement with the international climate regime has been shaped by three abiding positions: the principle of common but differentiated responsibilities (CBDR) — which holds that developed countries, as the principal historical emitters of greenhouse gases, bear a greater responsibility for climate mitigation than developing countries; the priority of economic development and poverty eradication as national objectives; and the insistence that climate finance and technology transfer from developed to developing countries are obligations of international law, not merely expressions of generosity.

Under the Kyoto Protocol (1997), India, as a non-Annex I country, was not subject to binding emission reduction commitments. India participated actively in the Clean Development Mechanism (CDM), which enabled developed countries to offset their emissions by funding emission-reduction projects in developing countries — making India one of the largest recipients of CDM investment. The Protocol's structure, which exempted developing economies from binding commitments while imposing them on developed economies, was broadly consistent with India's CBDR position but attracted criticism from

the United States, which declined to ratify the Protocol partly on the ground of developing country exemptions.

B. The Paris Agreement and India's Nationally Determined Contributions

India's participation in the Paris Agreement (2015) represented a significant evolution in its international climate engagement.[9] The Paris Agreement — negotiated under the UNFCCC —

established a bottom-up architecture in which each party would determine its own 'nationally determined contribution' (NDC) to climate mitigation, with a global temperature goal of limiting warming to 'well below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 degrees Celsius.'

India's original NDC (2015) committed to three targets by 2030: reducing the emissions intensity of its GDP by thirty to thirty-five per cent from 2005 levels; achieving forty per cent of its cumulative electric power installed capacity from non-fossil fuel-based energy resources; and creating an additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent through additional forest and tree cover. India's updated NDC (2022) strengthened these commitments: a fifty per cent reduction in emissions intensity by 2030, fifty per cent cumulative electric power installed capacity from non-fossil fuel sources, and a long-term goal of achieving net zero emissions by 2070. These commitments — particularly the 2070 net zero target — position India as a serious participant in the global climate effort, while the 2070 timeline reflects India's insistence that its development trajectory cannot be compromised by the pace of climate transition demanded by developed economies.

C. The National Action Plan on Climate Change

At the domestic level, the primary policy framework for climate action is the National Action Plan on Climate Change (NAPCC), launched in 2008. The NAPCC consists of eight national missions covering solar energy, enhanced energy efficiency, sustainable habitat, water conservation, sustaining the Himalayan ecosystem, a 'Green India' mission for forest cover enhancement, sustainable agriculture, and strategic knowledge for climate change. The NAPCC missions have been implemented with varying degrees of effectiveness: the National Solar Mission has achieved remarkable success, with India's solar capacity growing from negligible levels in 2008 to over 70 gigawatts by 2023, well ahead of original targets. Other missions — particularly those relating to water conservation and the Himalayan ecosystem — have made more limited progress.

VI. The Domestic Legal Framework for Climate Governance

A. The Absence of a Framework Climate Law

India does not yet have a dedicated framework statute on climate change — a significant gap when compared with the United Kingdom (Climate Change Act, 2008), the European Union (European Climate Law, 2021), and a growing number of jurisdictions that have enacted primary legislation embedding their climate commitments in domestic law, establishing carbon budgets, and creating accountability mechanisms. The absence of a climate framework law means that India's climate commitments are implemented through a dispersed and uncoordinated array of sector-specific legislation, policy instruments, and executive programmes, without a legal obligation on the government to achieve specified emission reduction targets or a mechanism for parliamentary oversight of progress toward climate goals.

This legislative gap is significant for several reasons. First, without primary legislation, climate commitments can be varied or abandoned by executive decision without parliamentary scrutiny. Second, the absence of legislated emission targets makes it legally difficult for courts to enforce climate obligations — there is no statute that a court can apply to compel specific government action on climate. Third, the lack of a framework law creates coordination failures across ministries and between central and state governments, as no single legal authority integrates climate considerations across all relevant sectors of governance.

B. The Energy Conservation Act, 2001 and its 2022 Amendment

The Energy Conservation Act, 2001 establishes the Bureau of Energy Efficiency (BEE) and provides for the regulation of energy consumption by designated energy-intensive industries and commercial buildings.[10] The Act's energy efficiency standards and labelling requirements for appliances have contributed to significant reductions in energy intensity across multiple sectors. The Energy Conservation (Amendment) Act, 2022 represents the most significant legislative climate development in recent years. It introduces a carbon credit trading scheme — enabling the government to specify a carbon credit certificate regime and establish a market for the trading of such certificates — and requires a specified proportion of energy consumption by designated consumers to be met from non-fossil sources. The carbon market established by the 2022 Amendment has the potential to become an important instrument of domestic climate governance, though its effectiveness will depend on the stringency of the targets set and the robustness of the verification and enforcement architecture.

C. The Forest Conservation Act and Carbon Sinks

India's NDC commitment to creating additional carbon sinks through forest cover enhancement places the Forest (Conservation) Act, 1980 — which requires prior central government approval for the diversion of forest land to non-forest purposes — at the centre of domestic climate law.[11] The Act has been a significant, if imperfect, instrument of forest conservation; estimates suggest that without the Act's restrictions on forest diversion, substantially greater forest cover would have been lost to development projects. However, the Forest (Conservation) Amendment Act, 2023 has attracted significant criticism from environmentalists and forest rights advocates for provisions that exempt certain categories of land from the Act's protections — including land within one hundred kilometres of international borders and coastal areas — and for provisions that could facilitate the leasing of forest land to private entities for plantation forestry in the name of carbon sequestration.

D. Climate Change Litigation in India

Climate litigation — the use of judicial proceedings to enforce climate obligations, challenge inadequate climate policy, or seek remedies for climate-related harm — is a global phenomenon that has taken distinctive forms in India. In the landmark decision of *M.K. Ranjitsinh v. Union of India* (2024),[12] the Supreme Court for the first time explicitly recognised the right to be free from the adverse effects of climate change as a fundamental right, derived from the right to life under Article 21 and the right to equality under Article 14. The Court held that the government's obligation to address climate change is not merely a policy aspiration but a legally enforceable duty flowing from the constitutional guarantee of life and dignity.

The Ranjitsinh decision arose from a petition challenging the installation of high-voltage power transmission lines through the habitat of the critically endangered Great Indian Bustard in Rajasthan. The Court balanced the imperative of renewable energy expansion — specifically the development of solar energy projects whose transmission requires high-voltage lines — against the conservation obligation to protect a species on the brink of extinction. The judgment's recognition of climate rights as fundamental rights has opened the door to a new generation of constitutional climate litigation in India, and its implications for both climate governance and environmental adjudication are still being worked through by courts and litigants.

---

9 Paris Agreement, Dec. 12, 2015, T.I.A.S. No. 16-1104.

10 Energy Conservation Act, 2001, No. 52, Acts of Parliament, 2001 (India).

[11] Forest (Conservation) Act, 1980, No. 69, Acts of Parliament, 1980 (India).

[12] M.K. Ranjitsinh v. Union of India, 2024 INSC 298 (Supreme Court of India).

VII. India's Climate Justice Position

A. The Equity Dimension of Climate Law

India's engagement with climate law is inseparable from its insistence on climate justice — the principle that the burdens of climate mitigation and the costs of climate adaptation must be distributed equitably between those who have contributed most to the problem historically and those who are most vulnerable to its consequences. India's per capita greenhouse gas emissions remain a fraction of those of the United States or the European Union, and a significant proportion of its population lacks access to reliable energy, adequate nutrition, and the basic material conditions of a dignified life. To demand of India the same pace of decarbonisation as economies that industrialised over two centuries is, from India's perspective, to demand that the poor pay for the profligacy of the rich.

This equity position has increasingly been given domestic legal expression. The NGT and the Supreme Court have, in climate-related proceedings, emphasised that climate adaptation — the protection of vulnerable communities from the floods, droughts, extreme heat, and sea level rise that climate change is already causing — is as much a legal obligation of the Indian state as climate mitigation. The constitutional guarantee of the right to life imposes on the government a duty to protect citizens from foreseeable, preventable environmental harm — including climate-induced harm — and the courts have begun to treat the failure to adequately fund climate adaptation as a potential constitutional violation.

B. Loss and Damage

The international law concept of 'loss and damage' — the acknowledgment that some climate impacts are beyond the capacity of affected communities to adapt to, and that the states historically responsible for climate change bear a legal or moral obligation to compensate for such irreversible losses — has been recognised in the Paris Agreement framework and was given institutional expression through the establishment of the Loss and Damage Fund at COP27 (Sharm el-Sheikh, 2022) and COP28 (Dubai, 2023). India has been a consistent advocate for robust loss and damage provisions in the international climate regime, reflecting both its climate vulnerability and its position as a representative of the developing world's interests in climate negotiations.

PART III: WILDLIFE PROTECTION

VIII. The Wildlife Protection Act, 1972: Framework and Provisions

A. Historical Context and Legislative Genesis

The Wildlife (Protection) Act, 1972 was enacted against the backdrop of a catastrophic decline in India's wildlife populations during the mid-twentieth century.[13] Unrestricted hunting — including by colonial administrators and indigenous aristocracy who regarded game hunting as a mark of status — deforestation for agriculture and development, and the absence of any effective legal protection for wildlife had reduced the populations of iconic species to alarming levels. The tiger population, estimated at over forty thousand at the turn of the century, had fallen to fewer than two thousand by 1970. The lion, rhinoceros, elephant, and numerous other species faced comparable crises. Against this background, and influenced by the global conservation movement galvanised by the Stockholm Conference, the Wildlife Protection Act was enacted to provide comprehensive legal protection to wild animals and plants, to regulate hunting and trade in wildlife and wildlife products, and to establish a network of protected areas.

The Act has been substantially amended on several occasions — most significantly in 1991, 2002, and 2022 — to strengthen its provisions, expand the categories of protected species, bring it into conformity with India's obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and address emerging conservation challenges. The Wildlife (Protection) Amendment Act, 2022 is the most recent and comprehensive revision, introducing provisions on invasive alien species, strengthening the CITES implementation framework, and reorganising the schedules of protected species.

B. The Schedule System and Species Protection

The Wildlife Protection Act protects wild animals and plants through a schedule system that differentiates the degree of protection by species. Under the 2022 amendment, species are distributed across four schedules (reduced from the previous six). Schedule I species — including the tiger, lion, elephant, rhinoceros, snow leopard, and other species of the highest conservation concern — receive the most stringent protection: hunting is absolutely prohibited, and any trade in Schedule I specimens or their derivatives is a cognisable and non-bailable offence attracting severe penalties, including imprisonment of up to seven years. Schedules II to IV provide graduated levels of protection for species of lesser conservation concern.

The Act defines 'hunting' broadly to include not merely the killing of wild animals but also capturing, poisoning, snaring, trapping, driving, and disturbing them. This broad definition

has been applied by courts to encompass a wide range of conduct that threatens individual animals and wildlife populations, including the destruction of nests, the collection of eggs, and activities that habitually disturb wildlife in their natural habitat. The prohibition on hunting is subject to limited exceptions: animals may be killed in the exercise of the right of private defence of persons or property (where the animal is a danger to human life or property), and the government may permit the capture of specified animals for recognised zoological purposes, scientific research, or education.

C. Protected Areas: National Parks and Wildlife Sanctuaries

The core mechanism for habitat protection under the Wildlife Protection Act is the designation of protected areas — national parks and wildlife sanctuaries — within which human activities are regulated or excluded to protect wildlife and their habitats. National parks represent the highest category of protection: within national parks, no human activity is permitted that may adversely affect wildlife, and the rights of any person over or within a national park may be extinguished by the government. Wildlife sanctuaries permit limited human activities, including the continuation of existing rights of forest-dwelling communities, but prohibit any destruction of wildlife or their habitat.

India's protected area network has expanded significantly since the Act's enactment. As of 2024, India has over 100 national parks, over 550 wildlife sanctuaries, and numerous conservation reserves and community reserves, covering approximately five per cent of the country's geographical area. This network, while substantial, is widely regarded as insufficient — both in its total extent and in the ecological connectivity between protected areas — to sustain viable populations of wide-ranging species such as tigers, elephants, and leopards. The fragmentation of habitat by roads, railways, canals, and agricultural development has created wildlife corridors under acute pressure, and human-wildlife conflict in the buffer zones of protected areas is a persistent and intensifying challenge.

---

[13] Wildlife (Protection) Act, 1972, No. 53, Acts of Parliament, 1972 (India).

IX. Project Tiger, Project Elephant, and Species Recovery Programmes

A. Project Tiger: A Conservation Success Story

Project Tiger, launched by Prime Minister Indira Gandhi in 1973, is India's flagship wildlife conservation programme and one of the most celebrated conservation success stories in the world. The programme established a network of tiger reserves — areas of enhanced protection and scientific management specifically designed to maintain viable

tiger populations — and provided dedicated funding, staffing, and management attention to tiger conservation. The National Tiger Conservation Authority (NTCA), established under the Wildlife Protection Act's 2006 amendment, oversees the tiger reserve network and is responsible for the preparation and implementation of Tiger Conservation Plans.

The results of Project Tiger have been remarkable. From a low of approximately 1,411 tigers (estimated by the first systematic all-India tiger census in 2006), India's tiger population has grown to an estimated 3,682 tigers as of the 2022 census — representing approximately seventy-five per cent of the world's wild tiger population. India has thus achieved the global 'TX2' target — the doubling of the wild tiger population from its 2010 baseline — making it the only major tiger range country to have done so. This achievement, celebrated internationally as a conservation milestone, reflects the effectiveness of the protected area model, the dedication of forest staff, and the legal protection provided by the Wildlife Protection Act.

The success of Project Tiger has, however, generated its own tensions. The expansion of tiger reserves
— and the strict exclusion of human habitation and activity from their core areas — has affected forest-dwelling communities who lived within or adjacent to these areas for generations. The recognition of forest rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 has created an ongoing tension between the conservation imperative of excluding human settlement from critical tiger habitats and the rights of indigenous communities to continue their traditional forest-based livelihoods.

B. The Forest Rights Act and Conservation: A Structural Tension

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (Forest Rights Act) recognises the rights of scheduled tribes and other traditional forest dwellers over forest land that they have occupied and cultivated for generations, and over the forest resources on which they have traditionally depended.[14] The Act was enacted to address the 'historical injustice' done to forest communities by colonial forest law — which had vested ownership of forest land in the state, criminalised traditional forest use, and denied communities any legal recognition of their occupancy rights — and by post-independence development projects that displaced communities without adequate rehabilitation.

The Forest Rights Act and the Wildlife Protection Act represent the two poles of an unresolved structural tension in Indian environmental law: the conservation imperative,

which demands the exclusion of human disturbance from critical wildlife habitats, and the rights imperative, which demands the recognition and protection of the livelihood rights of forest-dependent communities. The Supreme Court's order in the Wildlife First case (*Wildlife First v. Ministry of Forest and Environment*, 2019) — directing the eviction of millions of forest dwellers whose claims under the Forest Rights Act had been rejected — provoked a nationwide political controversy before being stayed, and the underlying legal question of how to reconcile conservation and community rights remains unresolved.

---

[14] Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, No. 2, Acts of Parliament, 2007 (India).

X. Wildlife Crime: Enforcement Challenges and Judicial Response

A. The Scale of Wildlife Crime in India

India is one of the world's major source, transit, and destination countries for illegal wildlife trade — a global criminal enterprise estimated by the United Nations Office on Drugs and Crime to generate between fifteen and twenty billion dollars annually. The illegal trade in tiger parts — skin, bone, and other body parts used in traditional medicine and luxury goods — remains the primary poaching threat to India's tiger population. Other significant wildlife crime categories in India include the illegal trade in elephant ivory and live elephants; the capture and sale of birds, reptiles, and primates for the pet trade; the poaching of rhinoceros for horn; the collection of sea turtle eggs and the killing of turtles for meat and shell; and the harvest of marine species including seahorses, sea cucumbers, and sharks for export to South and Southeast Asian markets.

The enforcement of wildlife crime law in India is distributed across forest department staff, the police, and — for offences with international dimensions — the Directorate of Revenue Intelligence and the Central Bureau of Investigation. The Wildlife Crime Control Bureau (WCCB), established under the Wildlife Protection Act, coordinates intelligence and enforcement activities across agencies and serves as India's national authority for CITES implementation. Notwithstanding these institutional arrangements, wildlife crime enforcement in India is chronically under-resourced: forest staff are inadequately trained and equipped, and the judicial processing of wildlife crime cases is slow, resulting in low conviction rates that reduce the deterrent effect of the law.

B. CITES and India's International Obligations

India is a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which regulates international trade in specimens of wild animals and plants to ensure that such trade does not threaten the survival of species in the wild. CITES lists species in three appendices according to the degree of protection required: Appendix I species — including the tiger, Asian elephant, Indian rhinoceros, snow leopard, and most marine turtles — are the most strictly protected, with commercial trade prohibited except in exceptional circumstances. India implements its CITES obligations primarily through the import and export permit system under the Foreign Trade (Development and Regulation) Act and through the prohibition on trade in scheduled species under the Wildlife Protection Act.

India has been an active participant in CITES decision-making, consistently opposing proposals to allow trade in ivory from African elephant populations on the ground that any legal trade creates cover for illegal trade and undermines enforcement. India's position — that the international ivory trade should remain prohibited — reflects both a principled conservation stance and a practical concern about the impact of resumed legal trade on the pressure facing India's own elephant populations.

C. Human-Wildlife Conflict: The Legal Dimension

Human-wildlife conflict — the direct interaction between humans and wildlife that results in harm to people, crops, livestock, property, or wildlife — is one of the most pressing and legally complex challenges of wildlife conservation in India. As wildlife populations recover and protected areas fill to carrying capacity, wild animals increasingly range beyond protected area boundaries into agricultural and residential landscapes, resulting in crop damage, livestock predation, and — in the case of elephants, tigers, and leopards — human casualties. Conversely, retaliatory killing of wildlife by affected communities, and the poisoning of wildlife as a form of pest control, poses a significant threat to conservation outcomes.

The legal framework for human-wildlife conflict is fragmented and inadequate. The Wildlife Protection Act prohibits the killing of protected species even in defence of property, creating a legal context in which farmers who kill a crop-raiding elephant or a livestock-predating tiger may face criminal prosecution. The compensation schemes established by state governments for wildlife-caused losses are widely regarded as inadequate, administratively burdensome, and poorly publicised. The result is a legal framework that simultaneously fails to protect affected communities adequately and fails

to deter retaliatory violence against wildlife — a failure of both justice and conservation.

XI. Biodiversity Law: The Biological Diversity Act, 2002

The Biological Diversity Act, 2002 gives domestic effect to India's obligations under the Convention on Biological Diversity (CBD) and establishes a framework for the access to, and benefit-sharing from, India's rich biological resources and associated traditional knowledge.[15] The Act establishes a three-tier governance structure: the National Biodiversity Authority (NBA) at the national level, State Biodiversity Boards (SBBs) at the state level, and Biodiversity Management Committees (BMCs) at the local body level. The NBA regulates access by foreigners and foreign-controlled entities to India's biological resources, requiring prior approval and the payment of benefit-sharing fees. The BMCs are responsible for the preparation of 'People's Biodiversity Registers' — documentation of local biological diversity and traditional knowledge — and have a say in decisions on access to local biological resources.

The Biological Diversity (Amendment) Act, 2023 has introduced significant changes to the Act's framework, including the exemption of 'codified traditional knowledge' from access and benefit-sharing requirements — a provision that has been criticised by biodiversity advocates as potentially weakening the protection of traditional knowledge — and provisions intended to facilitate the access to biological resources by domestic industry. The amendments have been characterised by some commentators as prioritising commercial access over conservation and community rights, and their consistency with India's obligations under the Nagoya Protocol on Access and Benefit-Sharing remains a subject of legal debate.

---

[15] Biological Diversity Act, 2002, No. 18, Acts of Parliament, 2003 (India).

XII. Conclusion and Recommendations

A. Synthesis: Strengths and Weaknesses of India's Environmental Law Framework

India's environmental law framework is, in legislative terms, among the most comprehensive in the developing world. The constitutional foundation — the judicially developed right to a clean environment, the public trust doctrine, the absolute liability principle, the precautionary and polluter pays principles — is robust and distinctive. The statutory framework, while fragmented, covers the principal dimensions of environmental governance. The NGT provides a specialised forum for environmental adjudication. The protected area network covers significant portions of the most

ecologically sensitive landscape. And Project Tiger stands as a globally celebrated conservation achievement.

Yet the gap between the promise of this framework and its operational reality is profound. Rivers remain heavily polluted notwithstanding decades of litigation and regulation. Air quality in India's major cities routinely reaches levels that constitute a public health crisis. Deforestation continues, enabled by exemptions and administrative processes that undermine the Forest Conservation Act's protective intent. Wildlife crime persists at levels that continue to threaten the survival of iconic species. And the institutional architecture of environmental enforcement — the Pollution Control Boards, the forest departments, the Wildlife Crime Control Bureau — remains chronically under-resourced, politically influenced, and institutionally resistant to rigorous enforcement.

B. Recommendations

First, a framework Climate Change Act should be enacted as a matter of constitutional urgency, embedding India's NDC commitments in primary legislation, establishing legally binding carbon budgets for each five-year period through 2070, creating a Climate Change Commission with independence analogous to the Election Commission, and requiring annual parliamentary reporting on progress toward climate targets. Such a statute would transform climate governance from a matter of executive policy into a matter of legal accountability.

Second, the Pollution Control Boards must be structurally reformed. Their dual role as development facilitators (issuing consents for industrial activity) and environmental enforcers creates a structural conflict of interest that systematically produces regulatory capture. Enforcement functions should be separated from consent-granting functions, Board members should be appointed through a process insulated from political interference, and Board budgets should be funded from pollution penalties rather than state government appropriations.

Third, the legal framework for human-wildlife conflict must be comprehensively reformed. Affected communities must have access to rapid, adequate, and non-bureaucratic compensation for wildlife-caused losses; the prohibition on killing wildlife in defence of property should be replaced by a proportionate right of self-defence that protects human life without criminalising the defence of crops and livestock; and community-based conservation mechanisms — which align the interests of forest communities with the conservation of wildlife — should be legally recognised and financially supported.

Fourth, India should enact a comprehensive Wetlands Protection Act, bringing all wetland ecosystems
— including mangroves, floodplains, and inland water bodies — within a unified protective framework with enforceable prohibitions on draining, filling, and pollution. Wetlands provide critical ecosystem services — flood moderation, water purification, carbon sequestration, and biodiversity habitat — that are indispensable to climate resilience, and their protection is a climate adaptation imperative as well as a conservation obligation.

Fifth, wildlife crime enforcement must be professionalised and resourced. The Wildlife Crime Control Bureau should be expanded and given investigative powers equivalent to those of the CBI in relation to serious organised wildlife crime. Forest department staff should receive regular training in evidence collection, court procedure, and the use of technology for wildlife crime detection. And the judicial processing of wildlife crime cases should be expedited through the designation of specialised environmental courts in major jurisdictions.

The environment is not a gift from the present generation to the next; it is held in trust for the next generation by the present one. India's constitutional environmental jurisprudence — in its most powerful formulations — recognises this inter-generational dimension of environmental obligation. The legal framework that India builds for pollution control, climate governance, and wildlife protection in the next decade will determine not merely the quality of the natural environment that future generations inherit, but the ecological conditions within which those generations can live with dignity, security, and health. The urgency of the challenge is commensurate with the ambition of the legal response required.

Bibliography

Primary Sources: Legislation

Water (Prevention and Control of Pollution) Act, 1974, No. 6, Acts of Parliament,

1974 (India). Air (Prevention and Control of Pollution) Act, 1981, No. 14, Acts of

Parliament, 1981 (India). Environment (Protection) Act, 1986, No. 29, Acts of

Parliament, 1986 (India).

Forest (Conservation) Act, 1980, No. 69, Acts of Parliament, 1980 (India).

Forest (Conservation) Amendment Act, 2023, No. 34, Acts of Parliament, 2023

(India). Wildlife (Protection) Act, 1972, No. 53, Acts of Parliament, 1972 (India).

Wildlife (Protection) Amendment Act, 2022, No. 22, Acts of Parliament, 2023

(India). Biological Diversity Act, 2002, No. 18, Acts of Parliament, 2003 (India).

Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, No. 2, Acts of Parliament, 2007 (India).

National Green Tribunal Act, 2010, No. 19, Acts of Parliament, 2010 (India).

Energy Conservation (Amendment) Act, 2022, No. 3, Acts of Parliament, 2023 (India).

Commission for Air Quality Management in the National Capital Region and Adjoining Areas Act, 2021 (India).

United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107.

Paris Agreement, Dec. 12, 2015, T.I.A.S. No. 16-1104.

Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, 27
U.S.T. 1087.

Primary Sources: Case Law

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

M.C. Mehta v. Union of India (Oleum Gas Leak), (1987) 1 SCC 395.

M.C. Mehta v. Kamal Nath, (1997) 1 SCC 388.

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

T.N. Godavarman Thirumulpad v. Union of India, (1997) 2 SCC 267.

Wildlife First v. Ministry of Forest and Environment, W.P. (C) No. 109/2008 (Supreme Court of India, 2019).

M.K. Ranjitsinh v. Union of India, 2024 INSC 298 (Supreme Court of India).

Secondary Sources: Books and Articles

P. Leelakrishnan, *Environmental Law in India* (4th ed., LexisNexis, 2016).

Armin Rosencranz, Shyam Divan & Martha Noble, *Environmental Law and Policy in India*

(2nd ed., Oxford University Press, 2001).

Ritwick Dutta, 'The Forest Rights Act: A Decade of Hope and Despair' 52 *Economic and Political Weekly* 16 (2017).

Lavanya Rajamani, 'India's Climate Change Law and Policy' 12 *Indian Journal of International Law* 1 (2022).

Navroz K. Dubash (ed.), *India in a Warming World: Integrating Climate Change and Development*
(Oxford University Press, 2019).

Shyam Divan, 'The National Green Tribunal: Promise and Performance' 50 *Journal of the Indian Law Institute* 4 (2008).