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GREEN CONSTITUTIONALISM IN INDIA: JUDICIAL INNOVATION IN ENVIRONMENTAL PROTECTION

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ABSTRACT

The growing threats of climate change, ecological degradation, and unsustainable development have intensified the need for constitutional mechanisms that ensure effective environmental protection. In India, the judiciary has played a transformative role in developing the concept of green constitutionalism by interpreting constitutional guarantees in a manner that integrates environmental sustainability with fundamental rights. While the Constitution expressly incorporates environmental obligations through Articles 48A and 51A (g), the recognition of a clean and healthy environment as an integral component of the right to life under Article 21 has largely been the result of judicial innovation. Despite an extensive body of environmental jurisprudence, limited scholarly attention has been paid to evaluating how judicial creativity has shaped India's constitutional response to contemporary environmental and climate challenges. This paper addresses this gap by critically analysing the evolution of green constitutionalism through constitutional interpretation and landmark judicial decisions. The study adopts a doctrinal legal research methodology based on an examination of constitutional provisions, environmental legislation, judicial precedents, and international environmental law principles. It analyses the development and application of key environmental doctrines, including the precautionary principle, the polluter pays principle, the public trust doctrine, and the principle of sustainable development, while assessing their contribution to environmental governance and climate resilience. The paper further examines the role of Public Interest Litigation in expanding environmental justice and strengthening judicial oversight of executive action. The study argues that judicial innovation has significantly advanced environmental constitutionalism by filling legislative and policy gaps and promoting a rights-based approach to environmental protection. Nevertheless, persistent challenges such as inconsistent implementation, institutional capacity constraints, and conflicts between environmental conservation and developmental priorities continue to undermine the effectiveness of environmental governance. The paper concludes that a robust framework of green constitutionalism requires stronger institutional coordination, legislative reforms, and proactive environmental governance aligned with India's constitutional values and international climate commitments. By offering a contemporary legal analysis of judicial innovation, this study contributes to ongoing debates on constitutional environmentalism and provides policy recommendations for strengthening sustainable and climate-resilient governance in India.

INTRODUCTION

Environmental degradation, climate change, biodiversity loss, and the depletion of natural resources have emerged as pressing global challenges that threaten ecological balance and human well-being. These interconnected crises have transformed environmental protection from a matter of public policy into a constitutional imperative. As nations strive to reconcile economic development with ecological sustainability, constitutional law has increasingly become an important instrument for safeguarding environmental rights and promoting sustainable governance. The concept of green constitutionalism reflects this transformation by recognising environmental protection as an integral component of constitutional governance, fundamental rights, and the rule of law.

India presents a distinctive example of the evolution of green constitutionalism. Although the Constitution of India, adopted in 1950, did not explicitly recognise the right to a clean and healthy environment as a fundamental right, constitutional jurisprudence has gradually expanded environmental protection through purposive judicial interpretation. The Forty-Second Constitutional Amendment Act, 1976, introduced Article 48A, directing the State to protect and improve the environment, and Article 51A (g), imposing a fundamental duty upon every citizen to protect natural resources and the environment. These provisions established the constitutional foundation for environmental governance, but their practical significance has largely depended upon judicial interpretation and enforcement.

The Supreme Court of India has played a transformative role in expanding the scope of Article 21 of the Constitution, which guarantees the right to life and personal liberty. Through a series of landmark judgments, the Court has interpreted the right to life to include the right to live in a pollution-free, healthy, and ecologically balanced environment. This judicial approach has strengthened constitutional environmentalism by incorporating internationally recognised environmental principles, including sustainable development, the precautionary principle, the polluter pays principle, and the public trust doctrine. Furthermore, the liberalisation of procedural rules relating to Public Interest Litigation (PIL) has enhanced access to environmental justice and enabled courts to address issues affecting communities and ecosystems.

Despite these significant judicial developments, environmental governance in India continues to face substantial challenges. Weak enforcement of environmental legislation, competing developmental priorities, climate-induced vulnerabilities, and institutional limitations often undermine the effective protection of environmental rights. These challenges raise important questions regarding the scope and effectiveness of judicial innovation in advancing constitutional environmental governance.

Against this backdrop, the present study critically examines the evolution of green constitutionalism in India by analysing constitutional provisions, judicial doctrines, and landmark decisions that have shaped environmental jurisprudence. The paper further evaluates the contribution of judicial innovation in strengthening environmental governance while identifying existing legal and institutional challenges. It argues that although judicial activism has significantly advanced environmental protection, long-term ecological sustainability requires coordinated action by the legislature, executive, judiciary, and civil society to realise the constitutional vision of environmental justice and sustainable development.

Concept of Green Constitutionalism

Green constitutionalism is an emerging constitutional

doctrine that integrates environmental protection, ecological sustainability, and climate resilience into constitutional governance. It reflects the understanding that a healthy environment is indispensable for the enjoyment of fundamental human rights and that constitutional frameworks should impose enforceable obligations upon governments to conserve natural resources for present and future generations. Unlike traditional environmental regulation, which primarily relies upon statutory measures, green constitutionalism elevates environmental protection to the constitutional level by recognising environmental rights, imposing environmental duties, and strengthening judicial oversight of governmental action.

The development of green constitutionalism has been influenced by international environmental law and the global recognition of sustainable development. The 1972 Stockholm Declaration on the Human Environment established the principle that human beings have a fundamental right to live in an environment of a quality that permits a life of dignity and well-being. This approach was further strengthened by the 1992 Rio Declaration on Environment and Development, which introduced principles such as sustainable development, public participation, environmental impact assessment, and the precautionary principle. These international developments have encouraged constitutional courts across jurisdictions to interpret constitutional rights in a manner that promotes environmental protection and ecological justice.

In India, green constitutionalism has evolved primarily through judicial interpretation rather than explicit constitutional amendment. While Articles 48A and 51A(g) provide constitutional guidance regarding environmental conservation, the Supreme Court has relied upon Article 21 to recognise the right to a clean and healthy environment as an inseparable element of the right to life. This dynamic interpretation has enabled constitutional principles to respond to emerging environmental concerns that were not envisaged when the Constitution was originally enacted.

Indian courts have also developed several constitutional environmental doctrines that now form the cornerstone of environmental jurisprudence. The public trust doctrine recognises that natural resources such as forests, rivers, lakes, and coastal ecosystems are held by the State in trust for the benefit of the public and cannot be exploited solely for private interests. The precautionary principle requires preventive action where scientific uncertainty exists regarding serious environmental harm. Similarly, the polluter pays principle ensures that those responsible for environmental damage bear the financial responsibility for remediation and restoration. These doctrines have strengthened environmental accountability and promoted sustainable governance.

Green constitutionalism also emphasises intergenerational equity, recognising that the present generation has a constitutional responsibility to preserve natural resources for future generations. This principle reflects the broader constitutional objective of balancing economic development with environmental conservation. In recent years, judicial interpretation has increasingly linked environmental protection with climate change mitigation, biodiversity conservation, and sustainable resource management, thereby expanding the constitutional dimensions of environmental governance.

However, green constitutionalism should not be viewed solely as judicial activism. Its effective implementation depends upon coordinated legislative reforms, accountable executive action, scientific expertise, public participation, and strong environmental institutions. As climate change presents increasingly complex legal and governance challenges, green constitutionalism offers an important constitutional framework for integrating environmental sustainability, human rights, and democratic governance. It represents an evolving model of constitutional law that seeks to ensure ecological integrity while promoting inclusive and sustainable development.

Constitutional Framework for Environmental Protection in India

The constitutional framework for environmental protection in India represents a dynamic interplay between fundamental rights, Directive Principles of State Policy, Fundamental Duties, and judicial interpretation. Although the Constitution of India, adopted in 1950, did not expressly guarantee environmental rights, constitutional jurisprudence has progressively evolved to recognise environmental protection as an indispensable component of constitutional governance. The incorporation of environmental obligations through the Forty-Second Constitutional Amendment Act, 1976, coupled with an expansive interpretation of fundamental rights by the Supreme Court, has transformed environmental protection into a constitutional commitment. This constitutional framework not only guides legislative and executive action but also empowers the judiciary to safeguard ecological balance and ensure sustainable development.

Article 21: Right to Life and the Right to a Healthy Environment

Article 21 of the Constitution provides that *"No person shall be deprived of his life or personal liberty except according to procedure established by law."* Initially interpreted narrowly, Article 21 has been substantially expanded through judicial interpretation to include a wide range of socio-economic and environmental rights. The Supreme Court has consistently held that the right to life encompasses the right to live with dignity, which necessarily includes access to a clean and healthy environment.

The landmark decision in *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh* (1985) marked one of the earliest instances in which the Supreme Court intervened to prevent ecological degradation by ordering the closure of environmentally harmful limestone quarrying in the Mussoorie hills. Although the Court did not explicitly articulate environmental rights under Article 21, the judgment reflected the judiciary's willingness to prioritise ecological preservation over short-term economic interests.

The constitutional scope of Article 21 was significantly broadened in *Subhash Kumar v. State of Bihar* (1991), where the Supreme Court unequivocally recognised that the right to life includes the right to enjoy pollution-free water and air. The Court observed that environmental pollution directly affects the quality of human life and that constitutional remedies under Article 32 may be invoked where environmental degradation infringes fundamental rights.

Similarly, in *M.C. Mehta v. Union of India* (Oleum Gas Leak Case), the Supreme Court introduced the doctrine of absolute liability for hazardous industries, emphasising that enterprises engaged in inherently dangerous activities owe a non-delegable duty to protect public health and the environment. This judgment strengthened constitutional accountability by imposing a higher standard of liability than the traditional English rule of strict liability.

Through these and subsequent decisions, Article 21 has become the constitutional cornerstone of environmental protection in India. It now encompasses rights relating to clean air, safe drinking water, ecological balance, protection against environmental hazards, and sustainable development.

Directive Principles of State Policy: Article 48A

The Forty-Second Constitutional Amendment Act, 1976 inserted Article 48A into Part IV of the Constitution, directing the State to "endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country." Although Directive Principles are not directly enforceable before courts, they constitute fundamental principles of governance and serve as guiding norms for legislative and executive policy.

The Supreme Court has repeatedly relied upon Article 48A while interpreting environmental statutes and constitutional rights. By reading Article 48A together with Article 21, the judiciary has strengthened the constitutional obligation of governments to formulate effective environmental policies and ensure sustainable utilisation of natural resources.

Article 48A reflects India's commitment to international environmental obligations and reinforces the constitutional objective of balancing economic growth with ecological conservation. Legislative enactments such as the Environment (Protection) Act, 1986, the Biological Diversity Act, 2002, and the Forest (Conservation) Act, 1980 derive constitutional support from this Directive Principle.

Fundamental Duty under Article 51A (g)

Article 51A (g), introduced by the Forty-Second Constitutional Amendment, imposes a fundamental duty upon every citizen "to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures."

Although Fundamental Duties are generally non-justiciable, courts have increasingly treated them as interpretative aids in constitutional adjudication. The Supreme Court has emphasised that environmental protection is not solely the responsibility of the State but also a collective obligation of citizens, industries, local authorities, and civil society.

Article 51A (g) has played an important role in encouraging public participation in environmental conservation. Judicial reliance upon this provision has strengthened environmental awareness, promoted responsible citizenship, and supported community participation in conservation initiatives.

Articles 32 and 226: Constitutional Remedies

One of the distinguishing features of Indian environmental jurisprudence is the availability of constitutional remedies for environmental protection. Article 32 empowers individuals to directly approach the Supreme Court for enforcement of fundamental rights, while Article 226 authorises High Courts to issue writs for enforcement of both fundamental and legal rights.

These provisions have facilitated the development of Public Interest Litigation (PIL), enabling public-spirited individuals, non-governmental organisations, and social activists to seek judicial intervention in matters involving environmental degradation. The liberalisation of locus standi has significantly expanded access to environmental justice, particularly for vulnerable communities unable to approach courts independently.

Environmental PILs have addressed diverse issues, including industrial pollution, deforestation, river conservation, hazardous waste management, air quality, mining, wildlife protection, and urban environmental governance. Judicial supervision through continuing mandamus has further strengthened the implementation of environmental laws.

Constitutional Principles Guiding Environmental Governance

The constitutional framework has enabled Indian courts to integrate internationally recognised environmental principles into domestic law. Among the most influential principles are:

- Sustainable Development, which seeks to reconcile economic development with environmental conservation.
- Precautionary Principle, requiring preventive measures where there is a risk of serious or irreversible environmental harm despite scientific uncertainty.
- Polluter Pays Principle, which mandates that those responsible for environmental damage bear the cost of restoration and compensation.
- Public Trust Doctrine, under which the State holds essential natural resources in trust for the benefit of present and future generations.
- Intergenerational Equity, requiring that natural resources be preserved so that future generations enjoy environmental conditions comparable to those available today.

These principles have acquired constitutional significance through judicial interpretation and now guide environmental decision-making across multiple sectors.

Critical Evaluation

The constitutional framework for environmental protection in India demonstrates remarkable judicial innovation and constitutional adaptability. Through the harmonious interpretation of Fundamental Rights, Directive Principles, and Fundamental Duties, the judiciary has constructed one of the most progressive environmental jurisprudence systems among constitutional democracies. Nevertheless, constitutional recognition alone cannot guarantee effective environmental protection.

Persistent challenges include inadequate enforcement of environmental legislation, institutional fragmentation, delays in environmental clearances, weak regulatory capacity, and increasing conflicts between developmental projects and ecological conservation. Climate change further complicates environmental governance by creating new legal questions relating to adaptation, disaster resilience, and climate justice that existing constitutional doctrines only partially address.

Accordingly, while the Constitution provides a robust normative foundation for environmental governance, achieving genuine environmental sustainability requires coordinated legislative reform, efficient administration, scientific expertise, and active public participation alongside continued judicial vigilance.

Judicial Innovation in Environmental Protection

To Begin with explaining why judicial innovation became necessary ; it is pertinent to mention here that although the Constitution originally contained only limited express environmental provisions, the Supreme Court interpreted Articles 21, 32, 48A, and 51A(g) to create a constitutional framework for environmental protection. Emphasise that judicial innovation has transformed environmental law from a collection of statutory obligations into a constitutional guarantee linked to the right to life. The four landmark cases can be discuss through them, the Court developed important doctrines such as the Public Trust Doctrine, Precautionary Principle, Polluter Pays Principle, and Sustainable Development. Those cases are M.C. Mehta v. Union of India: Expanding Constitutional Environmental Protection, Vellore Citizens' Welfare Forum v. Union of India: Constitutionalising Sustainable Development, Indian Council for Enviro-Legal Action v. Union of India: Strengthening Environmental Accountability and T.N. Godavarman Thirumulpad v. Union of India: Judicial Governance of Forests

Judicial innovation has emerged as one of the defining characteristics of environmental governance in India. Although the Constitution originally contained only limited express provisions relating to environmental protection, the Supreme Court adopted a dynamic and purposive approach

to constitutional interpretation by reading Articles 21, 32, 48A and 51A(g) together. Through this interpretative process, environmental protection evolved from a statutory concern into a constitutional obligation closely linked with the fundamental right to life. The judiciary recognised that environmental degradation directly affects human health, dignity and quality of life and therefore requires constitutional safeguards. By expanding the meaning of Article 21 and incorporating internationally accepted environmental principles into domestic law, the Supreme Court has transformed Indian environmental jurisprudence into one of the most progressive constitutional environmental regimes in the world.

Judicial innovation became particularly necessary because legislative and administrative mechanisms often failed to prevent pollution, illegal mining, deforestation and ecological destruction. Environmental statutes such as the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, and the Environment (Protection) Act, 1986 provided regulatory mechanisms, but weak enforcement and institutional deficiencies frequently undermined their effectiveness. In response, the judiciary assumed a proactive role by interpreting constitutional provisions to fill legal and governance gaps while ensuring accountability of public authorities. Public Interest Litigation (PIL) further strengthened this process by allowing concerned citizens and environmental organisations to approach the courts in matters affecting ecological protection and public welfare.

M.C. Mehta v. Union of India: Expanding Constitutional Environmental Protection

No individual has contributed more significantly to the development of environmental jurisprudence in India than environmental lawyer M.C. Mehta, whose series of public interest petitions transformed constitutional environmental law. The Supreme Court utilised these cases to redefine environmental rights and governmental responsibility under Article 21.

The Oleum Gas Leak Case (1987) marked a turning point in Indian environmental law. Following the leakage of oleum gas from a hazardous industrial unit in Delhi, the Supreme Court held that enterprises engaged in inherently dangerous activities owe an absolute and non-delegable duty to ensure that no harm results from their operations. Rejecting the traditional English rule of strict liability established in *Rylands v. Fletcher*, the Court evolved the doctrine of Absolute Liability, making hazardous industries liable irrespective of fault or negligence. This doctrine reflected the constitutional commitment to protecting life and health under Article 21 while imposing greater responsibility upon industries operating in a developing economy.

Subsequent M.C. Mehta cases relating to pollution of the Ganga River, vehicular emissions in Delhi, relocation of hazardous industries, and protection of the Taj Mahal further expanded constitutional environmental governance. Through continuous judicial monitoring, the Court directed the closure of polluting industries, ordered conversion of public transport to compressed natural gas (CNG), and required industries surrounding the Taj Trapezium Zone to adopt cleaner technologies. These decisions demonstrated that environmental protection is not merely a policy objective but an enforceable constitutional obligation.

The significance of the M.C. Mehta decisions lies in their recognition that environmental quality forms an indispensable component of the right to life. They also established judicial monitoring as an important mechanism for enforcing environmental compliance where executive authorities failed to discharge their statutory responsibilities.

Vellore Citizens' Welfare Forum v. Union of India: Constitutionalising Sustainable Development

The decision in Vellore Citizens' Welfare Forum v. Union of India (1996) represents one of the most influential judgments in Indian environmental jurisprudence because it formally incorporated internationally recognised environmental principles into constitutional law. The case concerned extensive pollution caused by tanneries in Tamil Nadu, which discharged untreated industrial effluents into agricultural lands and water sources, causing severe ecological damage and public health risks.

Recognising the inadequacy of conventional regulatory approaches, the Supreme Court held that environmental protection and economic development must proceed together through the principle of Sustainable Development. The Court observed that developmental activities cannot be permitted to destroy ecological resources essential for present and future generations.

More importantly, the Court expressly declared that the Precautionary Principle and the Polluter Pays Principle form part of the law of the land. According to the Precautionary Principle, where there exists a threat of serious or irreversible environmental damage, scientific uncertainty cannot be used as a justification for postponing preventive measures. The burden of proving that an activity is environmentally benign rests upon the person proposing the activity rather than the affected community.

Similarly, the Polluter Pays Principle requires that the polluting industry bear the costs of preventing, controlling and remedying environmental damage. Compensation must therefore extend beyond payment to affected individuals and include restoration of degraded ecosystems.

By constitutionalising these principles through Articles 21, 48A and 51A(g), the Court aligned Indian constitutional law with evolving international environmental standards while strengthening environmental accountability within domestic governance.

Indian Council for Enviro-Legal Action v. Union of India: Strengthening Environmental Accountability

The judgment in Indian Council for Enviro-Legal Action v. Union of India (1996) further reinforced environmental accountability by ensuring that industries causing ecological degradation bear the full financial burden of environmental restoration.

The case involved chemical industries in Rajasthan that had discharged toxic wastes into surrounding land and groundwater, resulting in severe environmental contamination affecting local communities and agriculture. Despite repeated governmental directions, effective remedial measures were not undertaken, compelling judicial intervention.

The Supreme Court strongly criticised administrative inaction and reaffirmed that environmental protection constitutes a constitutional obligation rather than a matter of governmental discretion. The Court directed the polluting industries to compensate affected persons and to bear the complete cost of restoring the damaged environment. In doing so, it strengthened the practical application of the Polluter Pays Principle, making it clear that environmental restoration is an essential component of liability.

The judgment emphasised that industries cannot externalise the costs of pollution onto society or future generations. Instead, economic development must internalise environmental costs so that those responsible for ecological degradation remain financially accountable for remediation. The decision significantly enhanced environmental

governance by reinforcing corporate responsibility, deterrence and environmental justice.

T.N. Godavarman Thirumulpad v. Union of India: Judicial Governance of Forests

Among the longest-running environmental litigations in Indian constitutional history, T.N. Godavarman Thirumulpad v. Union of India fundamentally transformed forest governance and biodiversity conservation.

Originally initiated to prevent illegal deforestation in the Nilgiri forests, the litigation gradually expanded into nationwide judicial supervision of forest conservation. The Supreme Court adopted an expansive interpretation of the term "forest," holding that it includes not merely areas formally notified under forest legislation but all lands satisfying the dictionary meaning of forests. This interpretation substantially widened the scope of legal protection available to forest ecosystems.

The Court issued continuing directions regulating timber extraction, forest diversion, mining operations and conservation planning across India. Through the mechanism of continuing mandamus, the Supreme Court retained jurisdiction over the matter for several decades, ensuring sustained monitoring of governmental compliance with forest conservation laws.

The Godavarman litigation also strengthened the constitutional application of the Public Trust Doctrine, recognising forests as ecological assets held by the State in trust for present and future generations. The Court repeatedly emphasised that natural resources cannot be treated as ordinary commercial commodities and that developmental projects affecting forests must satisfy constitutional standards of environmental sustainability.

This continuing judicial supervision substantially improved forest governance, biodiversity conservation and institutional accountability while influencing subsequent environmental policy and legislation.

Development of Constitutional Environmental Doctrines

Collectively, these landmark decisions enabled the Supreme Court to develop a coherent body of constitutional environmental principles that now guide environmental decision-making throughout India.

The Public Trust Doctrine, recognised prominently in *M.C. Mehta v. Kamal Nath* and reinforced in later decisions, imposes a fiduciary obligation upon the State to preserve natural resources such as forests, rivers, lakes and coastal ecosystems for public benefit. Government authorities therefore cannot alienate these resources for purely private commercial interests where such actions compromise ecological sustainability.

The Precautionary Principle, firmly established in *Vellore Citizens' Welfare Forum*, requires preventive action whenever there exists a credible risk of significant environmental harm, even where complete scientific certainty is unavailable. This doctrine shifts environmental governance from reactive remediation to preventive regulation.

The Polluter Pays Principle, elaborated in both *Vellore Citizens' Welfare Forum* and *Indian Council for Enviro-Legal Action*, ensures that environmental costs are borne by those responsible for pollution rather than by society at large. It strengthens deterrence while promoting ecological restoration.

Finally, the doctrine of Sustainable Development provides the overarching constitutional framework within which developmental activities must be balanced against ecological preservation. The judiciary has consistently emphasised that economic progress cannot be pursued at the irreversible cost of environmental degradation and that developmental decisions must respect intergenerational equity and ecological integrity.

Critical Assessment

Judicial innovation has undeniably transformed environmental protection in India by constitutionalising environmental rights and strengthening accountability of both the State and private actors. Through expansive interpretation of Article 21 and harmonious reading of Directive Principles and Fundamental Duties, the Supreme Court has created an integrated constitutional framework capable of addressing complex environmental challenges. Public Interest Litigation has further democratised access to environmental justice and enabled judicial intervention in matters involving pollution, forest conservation, biodiversity protection and climate-related governance.

Nevertheless, judicial innovation is not without limitations. Courts possess neither the institutional capacity nor the technical expertise to supervise environmental governance indefinitely. Continuing judicial monitoring, though effective in several instances, may blur the constitutional separation of powers by drawing the judiciary into administrative functions traditionally performed by the executive. Moreover, inconsistent implementation of judicial directions, inadequate regulatory capacity, political considerations and competing developmental priorities continue to impede effective environmental protection. Emerging challenges such as climate change, carbon neutrality, renewable energy transitions and environmental displacement require coordinated legislative, administrative and scientific responses that extend beyond judicial intervention.

Accordingly, while judicial innovation has established a strong constitutional foundation for green governance, long-term environmental sustainability depends upon effective implementation of environmental laws, institutional strengthening, scientific decision-making, meaningful public participation and coherent climate policies. The judiciary has laid the constitutional foundations of green constitutionalism; however, its enduring success ultimately depends upon collaborative governance among all constitutional institutions.

Challenges to Green Constitutionalism in India

Despite the remarkable contribution of judicial innovation in developing environmental constitutionalism, the practical implementation of environmental rights continues to face significant legal, institutional, and governance challenges. While the Supreme Court has transformed environmental protection into an integral component of the constitutional right to life under Article 21, judicial pronouncements alone cannot ensure ecological sustainability unless supported by effective legislative, executive, and administrative action. The gap between constitutional principles and their implementation remains one of the most pressing concerns in Indian environmental governance.

One of the foremost challenges is the weak enforcement of environmental laws. India possesses an extensive statutory framework comprising the Environment (Protection) Act, 1986, the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Forest (Conservation) Act, 1980, and the Biological Diversity Act, 2002. However, enforcement agencies frequently suffer from inadequate financial resources, shortage of technical expertise, bureaucratic inefficiency, and overlapping institutional jurisdictions. Pollution Control Boards often lack sufficient manpower and scientific capacity to effectively monitor industrial compliance or enforce environmental standards.

Another significant challenge arises from the conflict between economic development and environmental conservation. Rapid industrialisation, urban expansion, infrastructure projects, mining, and energy development frequently generate competing claims between developmental priorities and ecological preservation. Although the doctrine of sustainable development seeks to reconcile these competing interests, environmental clearances are often granted without comprehensive environmental impact assessments or meaningful public participation. Consequently, ecological concerns are sometimes subordinated to short-term economic objectives, undermining constitutional commitments to environmental protection.

The increasing impact of climate change presents an additional constitutional challenge. Rising temperatures, erratic monsoons, glacial retreat, coastal erosion, biodiversity loss, and extreme weather events have expanded the scope of environmental governance beyond traditional pollution control. Existing constitutional doctrines such as sustainable development and the precautionary principle provide valuable guidance; however, they were primarily developed in response to conventional environmental disputes rather than contemporary climate-related risks. Consequently, there remains a growing need for judicial and legislative responses specifically addressing climate adaptation, mitigation, carbon governance, and climate justice.

Institutional coordination also remains inadequate. Environmental governance in India involves multiple ministries, regulatory authorities, local governments, specialised tribunals, and judicial institutions. The absence of effective coordination frequently results in fragmented decision-making, inconsistent policy implementation, and regulatory overlap. Strengthening inter-agency cooperation is therefore essential for ensuring coherent environmental governance.

Further, concerns have occasionally been raised regarding judicial overreach. While judicial activism has undoubtedly strengthened environmental protection, prolonged judicial monitoring through continuing mandamus may blur the constitutional separation of powers by requiring courts to supervise executive functions over extended periods. Sustainable environmental governance ultimately requires capable regulatory institutions rather than continuous judicial intervention.

Finally, public participation in environmental decision-making remains uneven. Although Public Interest Litigation has democratised access to environmental justice, meaningful community involvement in environmental planning, impact assessment, biodiversity conservation, and climate adaptation policies continues to be limited. Greater environmental awareness, transparency, and citizen participation are indispensable for realising the constitutional vision of environmental democracy.

Future Directions for Green Constitutionalism

The future of green constitutionalism in India lies in strengthening the relationship between constitutional values, environmental governance, and climate resilience. Judicial innovation has successfully established environmental protection as a constitutional obligation; however, future progress requires institutional reforms that complement judicial developments.

First, Parliament should undertake comprehensive reforms to modernise environmental legislation by integrating climate change governance, biodiversity conservation, renewable energy, and carbon neutrality within a unified legal framework. Existing environmental statutes should be harmonised to reduce fragmentation and improve regulatory certainty.

Secondly, regulatory institutions must be strengthened through greater financial autonomy, scientific expertise, technological capacity, and independent enforcement mechanisms. Pollution Control Boards and environmental authorities require enhanced technical resources for monitoring pollution, assessing environmental risks, and enforcing compliance.

Thirdly, environmental decision-making should become increasingly science-based. Courts and regulatory authorities should rely upon independent scientific expertise while evaluating environmental impact assessments, biodiversity conservation measures, and climate adaptation strategies. Scientific evidence should complement constitutional interpretation to ensure informed environmental governance.

Another important direction involves expanding climate constitutionalism. Indian constitutional jurisprudence is gradually recognising that climate change directly affects the enjoyment of fundamental rights, including the rights to life, health, livelihood, food security, and shelter. Future judicial interpretation may further strengthen constitutional obligations relating to climate mitigation, disaster resilience, intergenerational equity, and environmental justice.

The National Green Tribunal (NGT) should also be empowered through greater institutional support and improved coordination with constitutional courts. As a specialised environmental adjudicatory body, the Tribunal possesses technical expertise that can facilitate quicker and more effective resolution of environmental disputes while reducing the burden on constitutional courts.

Finally, greater emphasis should be placed upon environmental education and public participation. Article 51A (g) recognises environmental protection as a fundamental duty of every citizen. Realising this constitutional responsibility requires widespread environmental awareness, community participation, transparent governance, and collaborative decision-making involving governments, civil society organisations, industries, academic institutions, and local communities.

CONCLUSION

Green constitutionalism in India represents one of the most significant achievements of constitutional jurisprudence in the post-independence era. Through innovative constitutional interpretation, the Supreme Court has transformed environmental protection from a collection of statutory obligations into a constitutional guarantee rooted in the right to life under Article 21. By harmoniously interpreting Fundamental Rights, Directive Principles of State Policy, and Fundamental Duties, the judiciary has established an integrated constitutional framework capable of addressing complex environmental challenges.

Landmark decisions such as *M.C. Mehta v. Union of India*, *Vellore Citizens' Welfare Forum v. Union of India*, and *Indian Council for Enviro-Legal Action v. Union of India*, and *T.N. Godavarman Thirumulpad v. Union of India* have fundamentally reshaped Indian environmental jurisprudence. These judgments constitutionalised internationally recognised environmental principles, including the Public Trust Doctrine, the Precautionary Principle, the Polluter Pays Principle, Sustainable Development, and Intergenerational Equity. Collectively, these doctrines have strengthened environmental accountability, enhanced access to environmental justice through Public Interest Litigation, and promoted responsible governance of natural resources.

Nevertheless, judicial innovation alone cannot guarantee environmental sustainability. Persistent challenges relating to

weak enforcement, institutional fragmentation, climate change, developmental pressures, and inadequate public participation continue to limit the effective realisation of constitutional environmental rights. While the judiciary has laid the normative foundations of green constitutionalism, its continued success depends upon coordinated legislative reforms, efficient executive implementation, robust regulatory institutions, scientific decision-making, and active citizen participation.

As environmental degradation and climate change increasingly threaten human welfare and ecological security, the constitutional vision of environmental justice assumes even greater significance. Green constitutionalism must therefore evolve beyond judicial activism into a comprehensive governance framework that integrates constitutional values, sustainable development, ecological resilience, and climate responsibility. Such an approach will not only strengthen India's environmental rule of law but also contribute meaningfully to global efforts aimed at achieving sustainable and climate-resilient development for present and future generation

REFERENCES

1. Upendra Baxi, *The Future of Human Rights* (3rd ed., Oxford University Press, 2008).
2. Shyam Divan & Armin Rosencranz, *Environmental Law and Policy in India: Cases, Materials and Statutes* (3rd ed., Oxford University Press, 2019).
3. Philippe Sands, Jacqueline Peel, Adriana Fabra & Ruth Mackenzie, *Principles of International Environmental Law* (4th ed., Cambridge University Press, 2018).
4. Constitution of India, Articles 21, 48A, 51A(g), 32 and 226.
5. *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh*, 1985 SCC.
6. M.C. Mehta v. Union of India (Oleum Gas Leak Case), (1987) 1 SCC 395.
7. Vellore Citizens' Welfare Forum v. Union of India, (1996) 5 SCC 647.
8. M.C. Mehta v. Kamal Nath, (1997) 1 SCC 388.
9. Indian Council for Enviro-Legal Action v. Union of India, (1996) 3 SCC 212.
10. United Nations, *Stockholm Declaration on the Human Environment* (1972).
11. United Nations, *Rio Declaration on Environment and Development* (1992).
12. Constitution of India, Arts. 21, 32, 48A, 51A(g), 226.
13. *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh*, 1985 SCC.
14. *Subhash Kumar v. State of Bihar*, (1991) 1 SCC 598.
15. *M.C. Mehta v. Union of India* (Oleum Gas Leak Case), (1987) 1 SCC 395.
16. *Sachidanand Pandey v. State of West Bengal*, (1987) 2 SCC 295.
17. Shyam Divan & Armin Rosencranz, *Environmental Law and Policy in India* (3rd ed., Oxford University Press, 2019).
18. Baxi, U. (2008). *The future of human rights* (3rd ed.). Oxford University Press.
19. Biological Diversity Act, No. 18 of 2002, India.
20. Constitution of India.
21. Divan, S., & Rosencranz, A. (2019). *Environmental law and policy in India: Cases, materials and statutes* (3rd ed.). Oxford University Press.
22. Forest (Conservation) Act, No. 69 of 1980, India.
23. Indian Council for Enviro-Legal Action v. Union of India, (1996) 3 SCC 212.
24. M.C. Mehta v. Kamal Nath, (1997) 1 SCC 388.
25. M.C. Mehta v. Union of India (Oleum Gas Leak Case), (1987) 1 SCC 395.
26. M.C. Mehta v. Union of India (Ganga Pollution Case), (1988) 1 SCC 471.
27. M.C. Mehta v. Union of India (Taj Trapezium Case), (1997) 2 SCC 353.
28. M.C. Mehta v. Union of India (Vehicular Pollution Case), (1998) 6 SCC 63.
29. Rio Declaration on Environment and Development, U.N. Doc. A/CONF.151/26 (Vol. I), 31 I.L.M. 874 (1992).
30. Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh, 1985 Supp SCC 79.
31. Sachidanand Pandey v. State of West Bengal, (1987) 2 SCC 295.
32. Sands, P., Peel, J., Fabra, A., & Mackenzie, R. (2018). *Principles of international environmental law* (4th ed.). Cambridge University Press.
33. Stockholm Declaration of the United Nations Conference on the Human Environment, U.N. Doc. A/CONF.48/14/Rev.1 (1972).
34. Subhash Kumar v. State of Bihar, (1991) 1 SCC 598.
35. T.N. Godavarman Thirumulpad v. Union of India, (1997) 2 SCC 267.
36. The Air (Prevention and Control of Pollution) Act, No. 14 of 1981, India.
37. The Environment (Protection) Act, No. 29 of 1986, India.
38. The National Green Tribunal Act, No. 19 of 2010, India.
39. The Water (Prevention and Control of Pollution) Act, No. 6 of 1974, India.
40. United Nations Framework Convention on Climate Change, 1771 U.N.T.S. 107 (1992).
41. United Nations. (2015). *Paris Agreement*. United Nations.
42. Vellore Citizens' Welfare Forum v. Union of India, (1996) 5 SCC 647.
43. World Commission on Environment and Development. (1987). *our common future*. Oxford University Press.