

CLIMATE CONSTITUTIONALISM: CAN A RIGHT TO A HEALTHY ENVIRONMENT BE JUDICIALLY ENFORCED IN INDIA?¹

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Abstract

India's constitutional framework stands at a transformative juncture where environmental protection and fundamental rights converge to form a new paradigm of climate constitutionalism. This paper critically examines the judicial evolution from traditional environmental jurisprudence under Article 21 to the Supreme Court's recent recognition of a fundamental right to be free from the adverse effects of climate change in M.K. Ranjitsinh v. Union of India (2024). By analysing the doctrinal progression from *Maneka Gandhi* to *Vellore Citizens* and beyond, the study argues that the Indian judiciary has redefined constitutional life and equality to encompass climate security as an essential component of human dignity.

However, the research contends that while judicial recognition of climate rights marks a watershed in constitutional law, enforcement remains structurally inadequate due to institutional limitations, fragmented governance, and the complexity of climate policy. Drawing on comparative insights from jurisdictions such as the Netherlands, Germany, and Colombia, the paper proposes a comprehensive framework for climate constitutionalism rooted in both accountability and institutional restraint.

The paper introduces five innovative enforcement mechanisms—Climate Accountability Courts, Intergenerational Justice Commissioners, Rights-Based Climate Monitoring, Mandatory Climate Impact Assessments, and Judicial Climate Emergency Powers—to operationalise climate rights within India's constitutional boundaries. It concludes that the future of climate justice depends not merely on judicial declarations but on creating enduring institutions capable of translating constitutional promises into effective protection for present and future generations.

Keywords: Climate constitutionalism, Article 21, judicial enforcement, intergenerational equity, environmental rights, separation of powers.

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1. Introduction

India stands at a constitutional crossroads. As climate disasters ravage the nation with increasing frequency and intensity, the traditional boundaries between environmental protection and constitutional rights are dissolving. In 2024, India experienced extreme weather events on 322 out of 366 days, claiming over 3,400 lives and causing unprecedented economic damage.² This climate crisis has transcended the realm of policy discourse to become a fundamental constitutional challenge, demanding innovative judicial responses that traditional environmental jurisprudence may be ill-equipped to address.

The Supreme Court's landmark judgment in M.K. Ranjitsinh and Others v. Union of India and Others (2024) represents a watershed moment in Indian constitutional law, explicitly recognising for the first time a fundamental right to be free from the adverse effects of climate change.³ This judicial pronouncement, anchored in Articles 14 and 21 of the Constitution, signals the emergence of what scholars term "climate constitutionalism" and a paradigm where climate protection becomes not merely a policy preference but a justiciable constitutional mandate.⁴

However, the recognition of climate rights raises profound questions about judicial enforceability. Can courts, constrained by institutional limitations and the doctrine of separation of powers, effectively compel state action on climate change? How far can judicial intervention extend without transgressing into the executive domain? These questions assume critical importance as India's climate commitments under the Paris Agreement remain largely unmet, and extreme weather events continue to disproportionately impact the most vulnerable populations.⁵

This paper argues that while the judiciary has established robust constitutional foundations for climate rights, the enforcement mechanisms remain inadequate and require innovative institutional reforms. Through an analysis of evolving jurisprudence, international precedents, and enforcement challenges, this research proposes a framework for "climate constitutionalism" that enhances judicial accountability while respecting constitutional boundaries.

The methodology employed combines doctrinal analysis of constitutional and environmental jurisprudence with comparative examination of international climate litigation trends. The research examines landmark judgments from the Supreme Court and National Green Tribunal,

² Kiran Pandey and Rajit Sengupta, "In 2024, India experienced extreme weather events on 322 days, surpassing records of previous years", *Down To Earth*, Feb. 13, 2025, available at:

<https://www.downtoearth.org.in/climate-change/in-2024-india-experienced-extreme-weather-events-on-322-days-surpassing-records-of-previous-years> (last visited Aug. 8, 2025).

³ M.K. Ranjitsinh v. Union of India, 2024 INSC 280.

⁴ Parul Kumar and Abhayraj Naik, "India's New Constitutional Climate Right", *Verfassungsblog*, Apr. 25, 2024, available at: <https://verfassungsblog.de/indias-new-constitutional-climate-right/> (last visited Aug. 8, 2025).

⁵ Centre for Science and Environment, "Climate India 2024: An Assessment of Extreme Weather Events" (2024).

analyzes enforcement patterns in environmental cases, and draws insights from successful climate litigation models in other jurisdictions.

The central thesis posits that effective climate constitutionalism requires moving beyond traditional rights-based approaches toward innovative enforcement mechanisms that combine judicial oversight with institutional accountability. This includes establishing specialised climate courts, implementing rights-based monitoring systems, and creating intergenerational justice commissioners who can bridge the temporal gap between current actions and future consequences.

2. Evolution of Environmental Rights Under Article 21

The constitutional foundation for climate rights in India rests upon the judicial evolution of Article 21, which has undergone remarkable transformation from a narrow procedural guarantee to an expansive charter of substantive rights. This evolutionary journey provides the doctrinal bedrock upon which contemporary climate constitutionalism is constructed.

The watershed moment in Article 21 jurisprudence emerged in *Maneka Gandhi v. Union of India* (1978), where the Supreme Court liberated the right to life from its procedural constraints, establishing that life encompasses more than mere animal existence.⁶ This interpretive shift created constitutional space for recognising environmental dimensions of the right to life, a potential that remained dormant until the environmental crises of the 1980s demanded judicial intervention.

The first explicit recognition of environmental rights under Article 21 materialised in *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh* (1988), popularly known as the Dehradun Quarrying Case.⁷ Here, the Court recognised that the right to live in a healthy environment forms an integral facet of the right to life, establishing that environmental degradation constitutes a violation of fundamental rights. This precedent transformed environmental protection from a directive principle into a justiciable fundamental right.

The jurisprudential foundation was further strengthened in *M.C. Mehta v. Union of India* (1987), where the Court held that the right to live in a pollution-free environment is part of the fundamental right to life under Article 21.⁸ The Court emphasised that environmental hazards directly impinge upon the quality of life, making environmental protection not merely desirable but constitutionally mandated.

Virender Gaur v. State of Haryana (1995) marked another crucial milestone, where the Supreme Court expansively interpreted Article 21 to encompass the right to a clean environment, establishing that environmental protection and preservation of ecological balance

⁶ *Maneka Gandhi v. Union of India*, AIR 1978 SC 597.

⁷ *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh*, AIR 1988 SC 2187.

⁸ *M.C. Mehta v. Union of India*, AIR 1987 SC 1086.

are essential components of the right to life.⁹ The Court emphasised that environmental degradation violates Article 21, creating positive obligations on the state to protect and improve environmental quality.

The constitutional architecture was further reinforced through *Vellore Citizens Welfare Forum v. Union of India* (1996), which integrated international environmental principles into Indian constitutional law.¹⁰ The Court recognised the precautionary principle and polluter pays principle as part of the constitutional framework, establishing that sustainable development forms the core of environmental jurisprudence under Article 21.

T.N. Godavarman Thirumulpad v. Union of India (1996) demonstrated the Court's willingness to expand environmental protection beyond traditional boundaries, adopting a broad definition of "forest" to preserve green expanses regardless of their official classification.¹¹ This case illustrated how Article 21 could be employed to override administrative classifications in favor of environmental protection.

The cumulative effect of these precedents created a robust constitutional foundation for environmental rights, establishing several key principles: first, that environmental quality is integral to the right to life; second, that the state bears positive obligations to protect and improve environmental conditions; third, that environmental protection can override economic considerations when fundamental rights are at stake; and fourth, that international environmental principles form part of Indian constitutional law.

However, traditional environmental jurisprudence under Article 21 has focused primarily on pollution control and resource conservation rather than addressing systemic climate challenges. The recognition of specific climate rights required a conceptual leap from localised environmental protection to global climate governance, a transition that remained incomplete until the M.K. Ranjitsinh judgment.

The evolution of Article 21 environmental jurisprudence reveals both the potential and limitations of judicial constitutionalism. While courts successfully expanded the scope of fundamental rights to encompass environmental protection, enforcement mechanisms remained largely dependent on traditional remedies such as mandamus and injunctions, which proved inadequate for addressing complex, long-term challenges like climate change.

3. The M.K. Ranjitsinh Watershed: Recognising Climate Rights

The Supreme Court's decision in *M.K. Ranjitsinh and Others v. Union of India and Others* (2024) represents a paradigmatic shift in Indian constitutional jurisprudence, marking the

⁹ *Virender Gaur v. State of Haryana*, AIR 1995 SC 1956.

¹⁰ *Vellore Citizens Welfare Forum v. Union of India*, AIR 1996 SC 2715.

¹¹ *T.N. Godavarman Thirumulpad v. Union of India*, (1997) 2 SCC 267.

transition from environmental constitutionalism to climate constitutionalism.¹² This landmark judgment, delivered by a three-judge bench led by Chief Justice D.Y. Chandrachud, establishes for the first time in Indian legal history an explicit constitutional right to be free from the adverse effects of climate change.

The case originated from a petition seeking protection for the critically endangered Great Indian Bustard from overhead power transmission lines in Rajasthan and Gujarat. However, the Court expanded the scope of inquiry to address India's broader climate obligations, transforming what began as a wildlife conservation case into a foundational climate rights judgment.¹³

The Court's reasoning rests on the recognition that climate change presents unprecedented challenges to the fundamental rights guaranteed by the Constitution. In paragraph 19 of the judgment, the Court explicitly states that "the right to be free from the adverse effects of climate change" is integral to the fundamental rights enshrined under Articles 21 and 14.¹⁴ This formulation represents a conceptual breakthrough, moving beyond traditional environmental rights to address the specific challenges posed by anthropogenic climate change.

The integration of Article 14 (right to equality) alongside Article 21 (right to life) reflects the Court's recognition that climate change impacts are inherently unequal, disproportionately affecting vulnerable communities based on geography, economic status, and social position.¹⁵ The Court noted that climate change can cause acute food and water shortages that would have disproportionate impacts on poorer communities, thereby violating the constitutional guarantee of equality.

The judgment draws extensively on international legal frameworks, particularly India's obligations under the Paris Agreement and the United Nations Framework Convention on Climate Change. The Court emphasised that India's renewable energy commitments represent "not just a strategic energy goal but a fundamental necessity for environmental preservation".¹⁶ This integration of international climate obligations into domestic constitutional law creates binding legal duties that transcend political discretion.

Significantly, the Court anchored climate rights in both positive and negative obligations. While Article 21 traditionally imposed negative duties on the state (not to deprive life), the

¹² *Supra* note 2, para 19.

¹³ Nishant Sirohi and Lianne Lucia Dsouza, "Constitutionalising Climate Action: India's Supreme Court Decision on the Protection against Climate Change", *Oxford Human Rights Hub*, Jun. 3, 2024, available at: <https://ohrh.law.ox.ac.uk/constitutionalising-climate-action-indias-supreme-court-decision-on-the-protection-against-climate-change/> (last visited Aug. 10, 2025).

¹⁴ *Supra* note 2, para 24.

¹⁵ Michael Gerrard, "A Pioneering Decision from the Indian Supreme Court on the Right to a Healthy Environment and the Rights of the Great Indian Bustard", *Sabin Center for Climate Change Law Blog*, Apr. 22, 2024, available at: <https://blogs.climate.columbia.edu/2024/04/22/a-pioneering-decision-from-the-indian-supreme-court-on-the-right-to-a-healthy-environment-and-the-rights-of-the-great-indian-bustard/> (last visited Aug. 10, 2025).

¹⁶ *Supra* note 2, para 17.

climate rights formulation creates positive obligations to protect citizens from climate harms, even when such harms result from global rather than purely domestic sources.¹⁷

The Court's methodology in recognising climate rights involved three key steps: first, acknowledging that climate change directly threatens essential aspects of life such as access to clean air, water, and food; second, recognising that existing environmental jurisprudence under Article 21 provides the constitutional foundation for climate protection; and third, establishing that climate rights and environmental rights are “two sides of the same coin.”¹⁸

The judgment also addresses the temporal dimension of climate rights, recognising that current actions have consequences for future generations. While not explicitly invoking intergenerational equity, the Court's reasoning implicitly acknowledges that constitutional rights must be interpreted to protect not only present but also future generations from climate harms.¹⁹

However, the M.K. Ranjitsinh judgment also reveals the limitations of judicial climate constitutionalism. While establishing the constitutional foundation for climate rights, the Court provided limited guidance on enforcement mechanisms, compliance standards, or remedial frameworks. The judgment declares climate rights without establishing institutional mechanisms for their protection, leaving critical questions about implementation and accountability unresolved.

The Court's approach in balancing conservation with development also demonstrates the complex trade-offs inherent in climate constitutionalism. By permitting overhead transmission lines for renewable energy projects while requiring mitigation measures for bird protection, the Court acknowledged that climate rights do not automatically trump other environmental considerations.²⁰

The M.K. Ranjitsinh precedent has catalyzed climate litigation across India, with subsequent cases like Ridhima Pandey v. Union of India building upon its foundations to demand comprehensive climate action from the government.²¹ The judgment has transformed climate

¹⁷ Parth Chhapolia, “A Breath of Fresh Air: The Indian Supreme Court Declares a Right to Be Free from the Adverse Effects of Climate Change”, *Harvard Human Rights Journal*, Apr. 20, 2025, available at: <https://www.hhrjournal.org/2025/04/20/a-breath-of-fresh-air-indian-supreme-court-declares-protection-from-climate-change-a-fundamental-right/> (last visited Aug. 10, 2025).

¹⁸ *Supra* note 2, para 24.

¹⁹ Aman Mehta, “Breathing Life into the Right to Life: The Indian Supreme Court and the Right to be Free from the Adverse Effects of Climate Change”, *Blog of the International Association of Constitutional Law*, Apr. 30, 2024, available at: <https://blog-iacl-aidec.org/2024-posts/2024/4/30/breathing-life-into-the-right-to-life-the-indian-supreme-court-and-the-right-to-be-free-from-the-adverse-effects-of-climate-change> (last visited Aug. 10, 2025).

²⁰ Navroz K Dubash and Shibani Ghosh, “Towards Operationalising a New Climate Right for India”, *The India Forum*, Sep. 19, 2024, available at: <https://www.theindiaforum.in/climate-change/toward-operationalising-new-climate-right-india> (last visited Aug. 11, 2025).

²¹ “Climate Change and the Obligations of the State: Ridhima Pandey v Union of India”, *Supreme Court Observer*, available at: <https://www.scobserver.in/cases/climate-change-obligations-of-the-state-ridhima-pandey-v-union-of-india/> (last visited Aug. 11, 2025).

protection from a policy aspiration into a constitutional mandate, creating legal obligations that transcend electoral cycles and political preferences.

4. State Accountability and Climate Obligations

The recognition of constitutional climate rights in M.K. Ranjitsinh creates corresponding state obligations that extend beyond traditional environmental protection to encompass comprehensive climate governance. However, translating these constitutional mandates into effective state accountability mechanisms presents complex challenges that traditional public law remedies may be inadequate to address.

India's international climate commitments under the Paris Agreement provide the substantive content for domestic climate obligations. The country has pledged to reduce emissions intensity of GDP by 45% by 2030 from 2005 levels, achieve 40% of installed electricity capacity from non-fossil sources, and create additional carbon sinks of 2.5-3 billion tonnes of CO₂ equivalent through forest and tree cover.²² While India has made significant progress on renewable energy targets, achieving 242.78 GW of non-fossil fuel capacity by 2024, the integration of these commitments into justiciable domestic obligations remains incomplete.²³

The National Action Plan on Climate Change (NAPCC), launched in 2008, represents India's primary domestic climate policy framework, encompassing eight national missions covering solar energy, energy efficiency, sustainable habitat, water management, Himalayan ecosystem protection, green India, sustainable agriculture, and strategic knowledge.²⁴ However, the NAPCC's implementation has been characterised by fragmented institutional responsibility, inadequate funding, and weak monitoring mechanisms that undermine its effectiveness as a climate governance tool.²⁵

The enforcement gap between policy commitments and implementation outcomes is starkly illustrated by India's continued vulnerability to extreme weather events. Despite spending over 2.6% of GDP on climate adaptation measures, the country experienced extreme weather events on 88% of days in 2024, suggesting that current approaches are inadequate to address the scale and urgency of climate challenges.²⁶

²² Avantika Goswami, "India's updated climate pledge to Paris Agreement gets Union Cabinet nod", *Down To Earth*, Aug. 03, 2022, available at: <https://www.downtoearth.org.in/story/climate-change/india-s-updated-climate-pledge-to-paris-agreement-gets-union-cabinet-nod-84138> (last visited Aug. 11, 2025).

²³ "Progress on India's Climate Targets", *Drishti IAS*, Jul. 26, 2025, available at: <https://www.drishtiias.com/daily-updates/daily-news-analysis/progress-on-india-s-climate-targets> (last visited Aug. 11, 2025).

²⁴ Harshal T. Pandve, "India's National Action Plan on Climate Change", 13 *Indian Journal of Occupational and Environmental Medicine* 17 (2009), available at: <https://pmc.ncbi.nlm.nih.gov/articles/PMC2822162/> (last visited Aug. 11, 2025).

²⁵ *Ibid.*

²⁶ K. P. Vipin Chandran and Sandhya, "Adaptation and Mitigation strategies of Climate change: A Serious Concern", *Yojana*, Jul. 01, 2013, available at: <http://yojana.gov.in/adaptation-and-mitigation.asp> (last visited Aug. 11, 2025).

The ongoing Ridhima Pandey v. Union of India case exemplifies the potential for judicial intervention in climate governance accountability. Originally filed by a nine-year-old petitioner in 2017, the case challenges the government's failure to take adequate climate action as a violation of constitutional rights.²⁷ The Supreme Court's February 2025 directions ordering eight central ministries to coordinate on climate action represent an unprecedented judicial intervention in operational climate governance.²⁸

The Court's criticism of the "siloed" approach to climate policy and its demand for inter-ministerial coordination reflects recognition that climate challenges require integrated governance structures that transcend traditional administrative boundaries.²⁹ The July 2025 order directing the Ministry of Power to file a national carbon reduction roadmap for the power sector demonstrates the Court's willingness to mandate specific sectoral climate action plans.³⁰

However, the judicial monitoring of climate governance raises fundamental questions about institutional competence and separation of powers. Climate policy involves complex technical assessments, resource allocation decisions, and trade-offs between competing objectives that may exceed traditional judicial expertise. The appointment of amici curiae with technical expertise in the Ridhima Pandey case represents one attempt to address this institutional limitation.³¹

The enforcement of climate obligations also confronts the challenge of measuring compliance with inherently long-term and uncertain targets. Unlike traditional environmental violations that can be assessed through immediate impacts, climate obligations involve cumulative emissions reductions and adaptation measures whose effectiveness may only become apparent over decades.³²

International experience suggests that effective climate accountability requires combining judicial oversight with specialised institutional mechanisms. The Netherlands' approach following the Urgenda judgment, which established dedicated climate monitoring bodies and regular reporting requirements, provides a model for institutionalising climate accountability beyond traditional court proceedings.³³

²⁷ *Supra* note 20.

²⁸ *Ibid.*

²⁹ Gunjan Soni and Jui Dharwadkar, "Is Ridhima Pandey v. Union of India Going to Change the Future of Climate Change Litigation in India? – An Assessment of the Indian Supreme Court's Recent Order", *World's Youth for Climate Justice Legal*, available at: <https://www.wy4cj.org/legal-blog/is-ridhima-pandey-v-union-of-india-going-to-change-the-future-of-climate-change-litigation-in-india-an-assessment-of-the-indian-supreme-courts-recent-order> (last visited Aug. 11, 2025).

³⁰ *Supra* note 20.

³¹ *Ibid.*

³² Aaditi Anand Sinha, "Holding the State Accountable: Navigating Climate Change Litigation in India", *Vidhi Centre for Legal Policy*, Nov. 11, 2024, available at: <https://vidhilegalpolicy.in/blog/holding-the-state-accountable/> (last visited Aug. 11, 2025).

³³ Arpitha Kodiveri, "The Genre-Bending of Climate Litigation in India", *Verfassungusblog*, May 7, 2024, available at: <https://verfassungusblog.de/the-genre-bending-of-climate-litigation-in-india/> (last visited Aug. 11, 2025).

The Indian context requires addressing the particular challenge of climate finance and technology transfer obligations. The Supreme Court's recognition that climate action requires international support creates potential obligations for the government to actively pursue climate finance and technology cooperation, moving beyond domestic mitigation efforts to encompass international climate diplomacy as a constitutional duty.³⁴

State accountability for climate action also intersects with federalism challenges, as many climate adaptation and mitigation measures require state-level implementation. The development of State Action Plans on Climate Change (SAPCCs) under the NAPCC framework provides a mechanism for devolving climate responsibilities, but ensuring coherent national climate action while respecting federal autonomy remains an ongoing challenge.³⁵

5. Innovative Enforcement Mechanisms and Proposed Reforms

The constitutional recognition of climate rights demands enforcement mechanisms that transcend traditional public law remedies to address the unique temporal, technical, and institutional challenges posed by climate change. Conventional legal remedies such as mandamus, injunctions, and damages, while foundational to environmental jurisprudence, prove inadequate for the complex, long-term, and scientifically sophisticated nature of climate governance.

The inherent limitations of traditional remedies become apparent when applied to climate challenges. Mandamus orders, which command specific government action, struggle to address the multi-faceted nature of climate policy that requires coordination across sectors, jurisdictions, and timeframes. The *Vanashakti v. Union of India* (2025) judgment, which struck down retrospective environmental clearances, demonstrates judicial capacity to establish procedural standards but highlights the difficulty of ensuring substantive climate outcomes.³⁶

The Supreme Court's approach in the ongoing *Ridhima Pandey* case suggests emerging recognition of these limitations and experimentation with innovative enforcement mechanisms. The Court's February 2025 order establishing inter-ministerial coordination requirements represents a departure from traditional command-and-control remedies toward structural institutional reforms.³⁷ By requiring ministries to develop joint action plans and report on coordination mechanisms, the Court is attempting to address the "siloed" nature of climate governance that undermines policy effectiveness.

The appointment of *amici curiae* with technical expertise in climate science and policy represents another innovative approach to addressing institutional limitations of traditional

³⁴ *Ibid.*

³⁵ *Supra* note 23.

³⁶ Katherine Abraham, "Supreme Court Requires Environmental Clearance Before Projects", *Law Asia*, available at: <https://law.asia/vanashakti-supreme-court-ruling/> (last visited Aug. 12, 2025).

³⁷ *Supra* note 20.

adjudication.³⁸ This mechanism enables courts to access specialised knowledge while maintaining judicial independence, potentially serving as a model for incorporating scientific expertise into climate constitutionalism.

Building upon these precedents, this paper proposes five innovative enforcement mechanisms designed specifically for climate constitutionalism:

Climate Accountability Courts: Specialised judicial bodies with dedicated jurisdiction over climate-related constitutional violations, staffed by judges with environmental and scientific training and supported by technical assessors. These courts would have continuing jurisdiction over climate cases, enabling long-term monitoring and adaptive remedies that respond to evolving scientific understanding and changing circumstances.

Intergenerational Justice Commissioners: Independent constitutional officers charged with representing the interests of future generations in climate-related proceedings. These commissioners would have standing to initiate climate litigation, participate in policy development processes, and monitor compliance with intergenerational equity principles. The concept draws inspiration from similar institutions in other jurisdictions while adapting to India's constitutional framework.

Rights-Based Climate Monitoring: Mandatory monitoring and reporting systems that track compliance with climate rights obligations using justiciable indicators and targets. Unlike policy-based monitoring that focuses on inputs and processes, rights-based monitoring would emphasise outcomes and impacts on affected populations, creating enforceable obligations for remedial action when rights violations are identified.

Mandatory Climate Impact Assessments: Constitutional requirements for climate impact assessments of all significant government policies, programs, and projects, with judicial review of adequacy and compliance. This mechanism would extend environmental impact assessment principles to encompass climate considerations, ensuring that all government action considers climate implications and alternatives.

Judicial Climate Emergency Powers: Specialised emergency jurisdiction enabling courts to issue immediate protective orders when climate emergencies threaten fundamental rights. These powers would operate similarly to disaster management authorities but with constitutional grounding and judicial oversight, enabling rapid response to climate emergencies while maintaining legal protections.

The implementation of these mechanisms requires addressing several institutional and constitutional challenges. First, the creation of specialised climate courts requires legislative action and judicial administration reforms that may face resource and jurisdictional constraints. Second, intergenerational justice commissioners must be integrated into existing constitutional

³⁸ *Ibid.*

structures while maintaining independence from political influence. Third, rights-based monitoring systems require developing justiciable indicators that can bridge scientific uncertainty with legal certainty.

International experience provides valuable precedents for these innovations. The Colombian Constitutional Court's establishment of comprehensive monitoring mechanisms following the Urgenda judgment demonstrates how courts can maintain long-term oversight of climate compliance.³⁹ The German Federal Constitutional Court's approach in *Neubauer v. Germany* (2021), which required legislative action on intergenerational climate protection, illustrates how constitutional courts can mandate structural reforms while respecting separation of powers.⁴⁰

The enforcement mechanisms must also address the global nature of climate change, which creates accountability challenges when domestic actions have limited impact on global outcomes. Rights-based approaches that focus on government efforts and compliance with international obligations, rather than absolute emission reduction outcomes, may provide more realistic and enforceable standards for judicial oversight.⁴¹

6. Doctrinal Foundations: Environmental Principles in Climate Context

The emergence of climate constitutionalism in India builds upon established environmental law principles that provide doctrinal foundations for judicial intervention while requiring adaptation to address the unique characteristics of climate change. Four foundational principles—the Public Trust Doctrine, intergenerational equity, the precautionary principle, and the polluter pays principle—form the conceptual framework for climate constitutionalism but require reinterpretation to address temporal, spatial, and causal complexities inherent in climate challenges.

The Public Trust Doctrine has evolved from its traditional focus on navigable waters and shorelines to encompass atmospheric resources and climate stability. The Supreme Court's recognition in *M.C. Mehta v. Kamal Nath* (1997) that the government holds natural resources in trust for public use provides the foundation for extending trust obligations to encompass climate protection.⁴² The doctrine's emphasis on intergenerational stewardship aligns naturally with climate governance, which requires present-day trustees to protect atmospheric stability for future beneficiaries.

However, applying the Public Trust Doctrine to climate governance requires addressing the global nature of atmospheric resources. Unlike traditional trust resources that fall within clearly

³⁹ Heather Colby, Ana Stellar Ebbersmeyer *et. al.*, “Judging Climate Change: The Role of the Judiciary in the Fight Against Climate Change”, *7 Oslo Law Review*, 168 (2020).

⁴⁰ *Neubauer v Germany*, 1 BvR 2656/18.

⁴¹ Environmental Law Alliance Worldwide, “Climate Litigation Strategies” (2025), available at: <https://elaw.org/climate> (last visited Aug. 15, 2025).

⁴² *M.C. Mehta v. Kamal Nath*, AIR 1997 SC 734.

defined jurisdictional boundaries, climate stability depends on global cooperation and cannot be protected through purely domestic action. The Intellectuals Forum, Tirupathi v. State of A.P. & Ors case recognised that the Public Trust Doctrine rests on intergenerational equity as part of the Constitution's basic structure, suggesting that climate trust obligations may override traditional sovereignty limitations.⁴³

The climate application of the Public Trust Doctrine also requires reconceptualising the relationship between trustee obligations and beneficiary rights. Traditional trust law focuses on preserving specific resources for defined beneficiaries, while climate trusteeship involves maintaining atmospheric conditions for indefinitely extended future generations. This temporal extension requires developing new legal frameworks for representing future interests and measuring trust compliance across extended time horizons.⁴⁴

Intergenerational equity provides perhaps the most compelling doctrinal foundation for climate constitutionalism, given that climate change represents the quintessential intergenerational challenge. The principle's recognition in Indian environmental jurisprudence through cases like Karnataka Industrial Areas Development Board v. C. Kenchappa (2006) establishes constitutional obligations to preserve environmental resources for future generations.⁴⁵

The climate context requires expanding intergenerational equity beyond resource conservation to encompass atmospheric stability and climate security. This expansion involves recognising that present generations' emission patterns create irreversible consequences for future generations' ability to enjoy fundamental rights. The principle also requires developing mechanisms for representing future generations' interests in present-day decision-making processes.⁴⁶

Intergenerational equity in climate governance also confronts distributive justice challenges, as the benefits of emission-intensive development accrue primarily to present generations while costs fall disproportionately on future populations. The principle's application requires balancing legitimate development needs with intergenerational fairness, potentially requiring slower development pathways that preserve greater atmospheric space for future generations.⁴⁷

The precautionary principle, established in Indian law through Vellore Citizens Welfare Forum v. Union of India (1996), provides crucial support for climate action in the face of scientific uncertainty.⁴⁸ The principle's requirement for preventive action when facing potentially

⁴³ Intellectuals Forum, Tirupathi v. State of Andhra Pradesh, AIR 2006 SC 1350.

⁴⁴ David Takacs, "The Public Trust Doctrine, Environmental Human Rights", 16 *New York University Environmental Law Journal* 711 (2008).

⁴⁵ Karnataka Industrial Areas Development Board v. C. Kenchappa, (2006) 6 SCC 371.

⁴⁶ Olle Mjengwa, "Fostering Intergenerational Equity in Climate Action", *Youth4Climate*, Mar. 12, 2024, available at: <https://community.youth4climate.info/group/7/discussion/fostering-intergenerational-equity-climate-action> (last visited Aug. 17, 2025).

⁴⁷ *Ibid.*

⁴⁸ *Supra* note 9.

irreversible environmental harm aligns with climate science findings that emphasise the risks of delayed action and irreversible tipping points.

Climate applications of the precautionary principle require addressing temporal mismatches between immediate costs and long-term benefits of climate action. The principle supports present-day mitigation investments even when future climate impacts remain uncertain, but requires developing frameworks for balancing precautionary costs against other constitutional obligations such as poverty reduction and development rights.⁴⁹

The precautionary principle also supports adaptive interpretations of climate obligations as scientific understanding evolves. Rather than locking in specific emission reduction pathways, precautionary climate governance requires maintaining flexibility to strengthen climate action as scientific evidence develops, potentially requiring constitutional mechanisms for updating climate obligations without formal amendment processes.⁵⁰

The polluter pays principle, recognised in landmark cases like Indian Council for Enviro-Legal Action v. Union of India (1996), faces particular challenges in climate applications due to the diffuse nature of emission sources and the historical accumulation of atmospheric greenhouse gases.⁵¹ The principle's traditional focus on immediate causal relationships between polluting activities and environmental harm requires adaptation to address the cumulative and delayed nature of climate impacts.

Climate applications of the polluter pays principle raise complex questions about historical responsibility and capability to pay. While the principle supports imposing costs on current emitters, it must address the reality that many current climate impacts result from historical emissions by actors who may no longer exist or have capacity to pay. The principle may require developing collective responsibility mechanisms that address cumulative emissions while maintaining incentives for current emission reductions.⁵²

The principle also requires addressing global dimensions of climate causation, as domestic climate impacts result from both domestic and international emissions. This raises questions about whether the polluter pays principle creates obligations for international climate finance and cooperation, potentially transforming domestic environmental principles into international legal obligations.⁵³

⁴⁹ Aishwarya Agrawal, "Polluter Pays Principle in India", *Law Bhoomi*, Jan. 21, 2025, available at: <https://lawbhoomi.com/polluter-pays-principle-in-india/> (last visited Aug. 18, 2025).

⁵⁰ Aishwarya Nayak, "Short Overview Of Public Trust Doctrine, Precautionary Principle And Polluter Pays Principle", *Legal Service India*, available at: https://www.legalserviceindia.com/legal/article-6636-short-overview-of-public-trust-doctrine-precautionary-principle-and-polluter-pays-principle.html#google_vignette (last visited Aug. 18, 2025).

⁵¹ Indian Council for Enviro-Legal Action v Union of India, AIR 1996 SC 1446.

⁵² *Supra* note 48.

⁵³ Madhuri Parikh, "Global Perspectives on Corporate Climate Legal Tactics - India National Report", *British Institute of International and Comparative Law*, available at: https://www.biicl.org/documents/12168_global_perspectives_on_corporate_climate_legal_tactics_-india_national_report_v1.pdf (last visited Aug. 19, 2025).

These foundational principles, while providing essential support for climate constitutionalism, require substantial adaptation to address the unique characteristics of climate challenges. Their successful application depends on developing institutional mechanisms that can operationalise complex temporal, spatial, and causal relationships while maintaining legal certainty and enforceability.

7. Conclusion and Future Directions

The emergence of climate constitutionalism in India, crystallised through the Supreme Court's recognition of climate rights in M.K. Ranjitsinh and ongoing development in cases like Ridhima Pandey, represents both a remarkable judicial achievement and an institutional challenge of unprecedented complexity. This research demonstrates that while Indian courts have successfully established robust constitutional foundations for climate protection, the translation of these rights into effective enforcement mechanisms requires innovative institutional reforms that transcend traditional public law remedies.

The analysis reveals that climate constitutionalism operates at the intersection of established environmental jurisprudence and emerging global climate governance, requiring legal frameworks that can address temporal, technical, and institutional challenges inherent in climate protection. The evolution from pollution-focused environmental rights under Article 21 to comprehensive climate rights under Articles 14 and 21 reflects the judiciary's capacity for constitutional adaptation, but also highlights the limitations of traditional enforcement mechanisms when applied to complex, long-term challenges.

The examination of state accountability mechanisms demonstrates that while India has established extensive climate policy frameworks through instruments like the NAPCC and international commitments under the Paris Agreement, implementation gaps persist due to fragmented institutional responsibility, inadequate monitoring systems, and weak enforcement mechanisms. The Supreme Court's intervention in Ridhima Pandey through inter-ministerial coordination orders represents an innovative attempt to address these systemic limitations, but reveals the need for more comprehensive institutional reforms.

The paper's central contribution lies in proposing five innovative enforcement mechanisms specifically designed for climate constitutionalism: Climate Accountability Courts, Intergenerational Justice Commissioners, Rights-Based Climate Monitoring, Mandatory Climate Impact Assessments, and Judicial Climate Emergency Powers. These mechanisms address identified limitations in traditional remedies while respecting constitutional boundaries and separation of powers principles.

Climate Accountability Courts would provide specialised expertise and continuing jurisdiction necessary for effective climate oversight, while Intergenerational Justice Commissioners would address the temporal dimension of climate rights by representing future generations' interests in present-day proceedings. Rights-Based Climate Monitoring would transform policy

compliance tracking into justiciable rights enforcement, while Mandatory Climate Impact Assessments would ensure systematic consideration of climate implications in all significant government action. Judicial Climate Emergency Powers would enable rapid response to climate emergencies while maintaining constitutional protections.

The doctrinal analysis demonstrates that established environmental principles, such as the Public Trust Doctrine, intergenerational equity, precautionary principle, and polluter pays principle, provide essential foundations for climate constitutionalism but require adaptation to address the global, cumulative, and long-term characteristics of climate challenges. These principles support judicial intervention in climate governance while requiring development of new legal frameworks for addressing international dimensions and temporal extensions of traditional environmental protection.

However, the research also identifies significant limitations and challenges in implementing climate constitutionalism. The global nature of climate change creates accountability challenges when domestic actions have limited impact on global outcomes. The technical complexity of climate science and policy requires judicial institutions to develop new forms of expertise and advisory mechanisms. The long-term nature of climate impacts creates difficulties in establishing immediate legal causation and remedies.

Future research directions should focus on several critical areas. First, empirical studies of climate litigation outcomes and enforcement effectiveness are needed to assess the practical impact of constitutional climate rights. Second, comparative analysis of international climate constitutionalism experiences can provide insights for adapting successful models to the Indian context. Third, interdisciplinary research combining legal, scientific, and policy perspectives is essential for developing effective institutional mechanisms.

Legislative and policy implications of this research suggest several priority reforms. Parliamentary action is needed to establish specialised climate courts and intergenerational justice commissioners, requiring constitutional amendments or statutory reforms. Administrative reforms are necessary to implement rights-based climate monitoring and mandatory climate impact assessments. Judicial administration must develop capacity for handling complex climate cases through training programs and technical support systems.

The broader implications for climate governance extend beyond India's borders. As one of the world's largest emitters and most climate-vulnerable countries, India's development of climate constitutionalism could influence global climate governance through precedent-setting and norm development. The integration of international climate obligations with domestic constitutional rights may provide a model for other jurisdictions seeking to enhance climate accountability.

The path forward requires recognising that climate constitutionalism is not merely about expanding judicial power but about developing institutional mechanisms that can effectively protect climate rights while respecting democratic governance and separation of powers.

Success depends on collaborative efforts between judiciary, legislature, executive, and civil society to develop comprehensive climate governance frameworks that can meet the urgency and scale of climate challenges.

Climate constitutionalism in India stands at a critical juncture. The constitutional foundations have been established, and innovative enforcement mechanisms have been proposed. The challenge now lies in implementation, i.e., translating constitutional recognition into institutional reality, rights-based rhetoric into effective protection, and judicial declarations into lived improvements in climate security for present and future generations. The stakes could not be higher: the constitutional promise of life, liberty, and dignity for India's 1.4 billion citizens depends on our collective ability to make climate constitutionalism work.