



Climate Litigation: A New Frontier for Environmental Accountability

Nithin J R¹, Ratheesh Kumar²

Research Scholar, School of Law, VELS University, VISTAS
Assistant Professor, School of Law, VELS University, VISTAS

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Abstract

Climate litigation has emerged as a transformative legal mechanism for addressing environmental accountability in the face of accelerating climate change. This paper examines the evolution of climate litigation from a nascent legal strategy to a sophisticated and rapidly expanding field that encompasses strategic litigation against both governmental and corporate actors. Through analysis of landmark cases including *Urgenda Foundation v. State of the Netherlands* and *Milieudefensie v. Shell*, this study demonstrates how climate litigation has redefined legal concepts of duty of care, corporate responsibility, and human rights obligations in the climate context. The research reveals that climate litigation serves multiple functions: enforcing existing climate commitments, establishing new legal precedents for accountability, and creating pressure for enhanced climate action where political will is insufficient. With over 2,900 cases filed globally as of 2024, climate litigation represents a paradigm shift toward judicial enforcement of climate obligations, fundamentally altering the landscape of environmental law and accountability mechanisms. The analysis concludes that climate litigation constitutes a new frontier that bridges traditional environmental law with human rights principles, creating unprecedented opportunities for holding both state and non-state actors accountable for their contributions to climate change.

Keywords: - Climate litigation, environmental accountability, human rights, corporate responsibility, judicial enforcement, climate governance.

I. INTRODUCTION

The convergence of accelerating climate change and evolving legal frameworks has catalyzed the emergence of climate litigation as a powerful mechanism for environmental accountability. Climate litigation, broadly defined as legal proceedings that raise climate change as a central issue, has evolved from a marginal legal strategy to a sophisticated field of practice that fundamentally challenges traditional approaches to environmental governance and corporate responsibility.

The significance of climate litigation extends beyond individual case outcomes to encompass broader systemic changes in how legal systems address climate change. As of December 2022, there have been 2,180 climate-related cases filed in 65 jurisdictions, including international and regional courts, tribunals, quasi-judicial bodies, or other adjudicatory bodies, such as Special Procedures at the United Nations and arbitration tribunals. This represents a steady increase from 884 cases in 2017 and 1,550 cases in 2020. This exponential growth reflects not merely increased awareness of climate issues, but a fundamental shift in legal strategy and theory regarding environmental accountability.

The theoretical foundation of climate litigation rests on several converging legal doctrines: the intersection of human rights law with environmental protection, the evolution of corporate duty of care in climate contexts, and the application of international law principles to domestic climate governance. These developments have created what scholars characterize as a "new era of climate change litigation" that transcends traditional boundaries between public and private law, domestic and international jurisdiction, and procedural and substantive legal remedies.

This paper argues that climate litigation represents a transformative frontier in environmental accountability that has fundamentally altered the legal landscape for both governmental and corporate climate action. Through strategic use of established legal principles in novel contexts, climate litigation has created new forms of accountability that complement and, in some cases, substitute for inadequate political and regulatory responses to climate change. The analysis demonstrates that

climate litigation's significance lies not merely in individual case victories, but in its systemic impact on legal doctrine, corporate behavior, and the broader normative framework governing climate responsibility.

II. THEORETICAL FRAMEWORK: CLIMATE LITIGATION AS ACCOUNTABILITY MECHANISM

2.1 Legal Foundations and Evolution

Climate litigation emerges from the intersection of multiple legal traditions and doctrinal developments that collectively enable judicial intervention in climate governance. The theoretical foundation rests on three primary pillars: human rights law, tort principles, and administrative law doctrines, each of which contributes distinct mechanisms for establishing climate accountability.

The human rights dimension of climate litigation draws upon evolving interpretations of fundamental rights to life, health, and family life in the context of climate change impacts. The report demonstrates how courts are finding strong human rights linkages to climate change. This is leading to greater protections for the most vulnerable groups in society, as well as increased accountability, transparency and justice, compelling governments and corporations to pursue more ambitious climate change mitigation and adaptation goals. This human rights framework has proved particularly effective in establishing standing for climate plaintiffs and creating judicial obligations for climate protection.

The tort law foundation provides mechanisms for establishing duty of care relationships between large emitters and those affected by climate change. This approach has been particularly significant in corporate climate litigation, where traditional tort principles of negligence and nuisance have been adapted to address the global, long-term, and diffuse nature of climate harms. The Dutch Civil Code's duty of care provision, for instance, has become a model for extending traditional tort concepts to climate contexts.

Administrative law provides the procedural and substantive framework for challenging government climate policies and decision-making processes. This includes requirements for environmental impact assessments, consideration of climate effects in permitting decisions, and judicial review of government climate commitments and their implementation.

2.2 Strategic Litigation Theory

Two litigation strategies stand out: obligations strategy and rights strategy. Obligations strategy consists of bestowing an erga omnes character to existing obligations regarding the protection of the global environment, thereby providing standing for a non-injured party before international courts. Rights strategy, on the other hand, significantly increases in practice. It consists in the invocation, before national and international courts, of remedies for environmental damages through the legal categories of human rights law.

The obligations strategy seeks to leverage existing international law commitments, particularly under the Paris Agreement and other climate treaties, to create enforceable domestic obligations. This approach has been particularly effective in cases challenging government climate targets as inadequate under international law standards.

The rights strategy transforms climate protection from a matter of policy discretion into a fundamental rights issue, creating stronger judicial obligations for climate action and broader standing for affected populations. This approach has proved particularly powerful in establishing intergenerational obligations and protecting vulnerable populations.

2.3 Accountability Mechanisms in Climate Litigation

Climate litigation creates accountability through multiple complementary mechanisms that extend beyond traditional legal remedies. These include prospective relief requiring changes in future behavior, declaratory judgments establishing legal principles, and damages addressing past harms.

Many are conventional remedies, including: damages for climate-related harms that vary substantially in the amount sought; various forms of injunctive relief; declaratory judgments on whether an action or inaction is legal; and requests for vacatur of administrative and/or regulatory action(s). Some plaintiffs are seeking unconventional remedies, which have at times been sweeping in their scale and scope, directed at making changes to foundational elements of energy and transportation policy.

The prospective nature of much climate litigation distinguishes it from traditional environmental law, which often focuses on remedying past harms. Climate litigation frequently seeks forward-looking remedies that require changes in emissions trajectories, investment patterns, and policy frameworks, creating ongoing accountability relationships between courts, defendants, and affected communities.

III. LANDMARK CASES AND LEGAL PRECEDENTS

3.1 Urgenda Foundation v. State of the Netherlands: Establishing Government Accountability

The Urgenda decision represents a watershed moment in climate litigation, establishing the principle that governments have legally enforceable obligations to protect their citizens from climate change. The court in the Hague ordered the Dutch state to limit GHG emissions to 25% below 1990 levels by 2020, finding the government's existing pledge to reduce emissions by 17% insufficient to meet the state's fair contribution toward the UN goal of keeping global temperature increases within two degrees Celsius of pre-industrial conditions.

The legal significance of Urgenda extends beyond its specific emission reduction requirement to encompass broader principles of government duty of care in climate contexts. The Dutch Supreme Court's 2019 affirmation of the decision

established that the Dutch government has an obligation under the ECHR to protect these rights from the real threat of climate change. This human rights foundation has become a template for subsequent government-focused climate litigation worldwide.

The case's theoretical contribution lies in its integration of international climate science with domestic legal obligations, creating a framework for translating global climate targets into binding national commitments. However, scholarly analysis has questioned whether Urgenda's approach creates effective accountability mechanisms or merely symbolic victories. Urgenda has not led to enhanced climate action; if anything, it has impeded such action. This case study reflects structural issues that are likely to arise in other target-setting cases.

3.2 Milieudefensie v. Shell: Corporate Climate Responsibility

The Shell case marked the first successful application of climate accountability principles to a major corporation, establishing unprecedented legal obligations for corporate climate action. The Court ordered Shell to reduce emissions by a net 45% across both emissions from its own operations and emissions from the use of the oil it produces. The Court made its decision provisionally enforceable, meaning Shell will be required to meet its reduction obligations even as the case is appealed.

The legal foundation of the Shell decision rests on extending the duty of care principle from government to corporate contexts. The Court concluded that the standard of care included the need for companies to take responsibility for Scope 3 emissions, especially "where these emissions form the majority of a company's CO₂ emissions, as is the case for companies that produce and sell fossil fuels." This expansion of corporate liability to encompass downstream emissions from sold products represents a significant evolution in climate accountability doctrine.

However, the November 2024 appeal decision significantly limited the original ruling's scope. While the Court cannot find a scientific basis to impose on Shell a concrete obligation to reduce Scope 1-3 emissions, it does point to the concrete mitigation obligations Shell does have. The appeals court maintained the principle of corporate climate responsibility while rejecting specific numerical targets, creating a framework for future corporate climate litigation that emphasizes general obligations rather than precise reduction requirements.

3.3 International Court of Justice Climate Advisory Opinion

The ICJ's 2025 advisory opinion represents the culmination of efforts to establish clear international legal obligations regarding climate change. The International Court of Justice (ICJ) decision delivers historic protections that strengthen the responsibilities of States under international law beyond the Paris Agreement, with several key additional obligations including the duty of all countries to prevent significant harm to the environment and the duty to cooperate.

The advisory opinion's significance extends beyond its non-binding status to encompass authoritative interpretation of existing international law obligations. The Court's decision obligates States to regulate businesses on the harm caused by their emissions regardless of where the harm takes place. Significantly, the Court found that the right to a clean, healthy and sustainable environment is fundamental for all other human rights, and that intergenerational equity should guide the interpretation of all climate obligations.

The ICJ opinion creates a comprehensive framework for climate accountability that bridges domestic and international law, providing authoritative guidance for national courts and creating new foundations for future climate litigation.

IV. CORPORATE ACCOUNTABILITY AND CLIMATE LITIGATION

4.1 Evolution of Corporate Climate Cases

Corporate climate litigation has evolved from early unsuccessful attempts to establish causation and damages to sophisticated strategic litigation targeting corporate governance, disclosure, and investment decisions. Around 20% of climate cases filed in 2024 targeted companies, or their directors and officers. The range of targets of corporate strategic litigation continues to expand, including new cases against professional services firms for facilitated emissions, and the agricultural sector for climate disinformation.

The strategic evolution reflects growing sophistication in legal theory and evidence. This article contributes to the burgeoning literature on climate litigation by examining recent developments in climate litigation launched against corporations. We argue that, notwithstanding the failure of a past generation of climate litigation to hold private actors to account, the second wave of pending court challenges is by no means doomed to failure.

4.2 Corporate Framework Cases and Governance

A distinct category of corporate climate litigation focuses on challenging corporate climate policies and governance frameworks rather than seeking damages for specific harms. This type of litigation calls into question the legitimacy of the internal climate policy framework for a company or group of companies. Typically, these cases seek more mitigation ambition from companies, often arguing for alignment with the Paris Agreement or net zero goals. There are now more than 20 such cases around the world, many of them yet to be decided.

These cases create accountability by requiring companies to align their governance structures and strategic planning with climate science and international climate commitments. The approach focuses on corporate decision-making processes rather than specific emission reduction requirements, creating flexibility while maintaining accountability pressure.

4.3 Greenwashing and Disclosure Litigation

Climate-related corporate disclosure and greenwashing litigation represents a rapidly growing area of corporate accountability. Another defining feature of 2025 will be the continued rise of greenwashing lawsuits. These cases, which

challenge companies for making deceptive claims about their climate commitments or sustainability efforts, are becoming a cornerstone of climate litigation. Over 140 such cases have been filed globally since 2016, with 47 new filings in 2023 alone.

These cases create accountability by challenging corporate communications and disclosure practices, requiring alignment between corporate climate representations and actual business practices. The success rate of greenwashing litigation has been notably high, with more than 70% of completed cases decided in favour of the claimants.

V. GLOBAL EXPANSION AND REGIONAL VARIATIONS

5.1 Growth in the Global South

Climate litigation is experiencing rapid expansion beyond traditional jurisdictions in North America and Europe to encompass the Global South, where different legal traditions and governance structures create distinct approaches to climate accountability. Climate litigation in the Global South is in a phase of dynamic growth. Almost 60% of cases recorded were filed since 2020. Understanding litigation in these jurisdictions requires a broader approach that includes cases where climate change is a peripheral issue.

The role of government actors in Global South climate litigation differs significantly from patterns in developed countries. In the Global South, governments, regulatory agencies and public prosecutors are playing a key role in climate litigation developments. In 2024, 56% of cases were initiated by government bodies. This signals a shift towards enforcement actions and cases seeking compensation for localised climate damages, such as from deforestation in Brazil.

5.2 International and Regional Court Developments

International and regional courts have increasingly become venues for climate litigation, creating new forms of accountability that transcend national boundaries. The International Tribunal for the Law of the Sea issued a significant advisory opinion in 2024, while the European Court of Human Rights has established important precedents regarding state obligations to protect citizens from climate harms.

In 2024, the International Tribunal for the Law of the Sea (ITLOS) issued a landmark advisory opinion affirming that greenhouse gas emissions constitute marine pollution under the United Nations Convention on the Law of the Sea (UNCLOS). ITLOS went further, clarifying the obligations of states to prevent, reduce, and control emissions, protect marine ecosystems, and collaborate internationally to address climate-related ocean impacts.

5.3 Anti-Climate Litigation

A significant development in climate litigation has been the emergence of cases that challenge rather than support climate action. Approximately 27% of 2024 cases opposed climate goals, with most originating in the US. Litigation included challenges to state initiatives on energy efficiency and federal ESG policies. Anti-ESG cases, sometimes alleging anti-trust violations, were prevalent, as were Strategic Litigation Against Public Participation (SLAPP) suits designed to silence climate advocacy.

This counter-litigation creates new challenges for climate accountability, as opponents of climate action increasingly use legal strategies to challenge climate policies and corporate sustainability initiatives. The emergence of anti-climate litigation demonstrates the contested nature of climate law and the ongoing struggle over legal frameworks for climate governance.

Table 1. Major Climate Litigation Categories and Outcomes

Category	Description	Success Rate	Key Examples	Primary Accountability Mechanism
Government Framework	Challenges to adequacy of national climate policies	High in Europe	Urgenda, KlimaSeniorinnen	Mandatory emission reductions
Corporate Framework	Challenges to corporate climate governance	Mixed	Shell, various energy companies	Policy alignment requirements
Project-Specific	Challenges to fossil fuel infrastructure	Moderate	Pipeline cases, LNG terminals	Environmental impact assessment
Greenwashing	Challenges to misleading climate claims	High (>70%)	Consumer product cases	Disclosure and truth in advertising
Adaptation Failure	Challenges to inadequate climate adaptation	Emerging	Coastal protection cases	Infrastructure and planning requirements
Rights-Based	Human rights violations from climate change	Increasing	Torres Strait Islanders	Constitutional and human rights protection

Source: Compiled from Grantham Research Institute Global Trends reports 2024-2025 and Sabin Center litigation databases

VI. SCIENTIFIC EVIDENCE AND LEGAL STANDARDS

6.1 Climate Attribution Science in Litigation

The integration of climate attribution science into legal proceedings has become increasingly sophisticated, enabling courts to establish causal relationships between specific actors and climate impacts. Attribution researchers seeking to inform climate litigation should take into account the standards of evidence required. Decisions about standards of evidence inherently entail judgments as to the relative risk of type 1 errors (attributing causation where it is not warranted) versus type 2 errors (not attributing causation where it is warranted).

The development of litigation-relevant attribution science requires careful consideration of legal standards of proof. Lloyd et al. (2021) point out that a standard of "more likely than not," commonly characterized as greater than 50%, most closely approaches the legal standard often applied in civil climate litigation. They argue that scientists seeking to do litigation-relevant attribution research should avoid "setting the bar too high" by only reporting results with more traditional scientific standards of evidence such as greater than 95% probability.

6.2 Source Attribution and Corporate Responsibility

Source attribution research has become particularly important in establishing corporate responsibility for climate harms. Source attribution data include national emissions inventories, sectoral emissions estimates, and corporate-oriented data such as Heede's carbon majors study. These are important to establish whether a defendant's emissions contribution is large enough, from a legal perspective, to be fairly traced to climatic changes and climate change-related injuries.

The development of comprehensive emissions databases and attribution methodologies has enabled courts to move beyond general causation to establish specific relationships between particular defendants and climate impacts, creating new possibilities for accountability litigation.

VII. CHALLENGES AND LIMITATIONS

7.1 Procedural and Jurisdictional Barriers

Climate litigation faces significant procedural challenges that limit its effectiveness as an accountability mechanism. Standing requirements, causation standards, and separation of powers doctrines continue to pose barriers to climate cases in many jurisdictions. Additionally, the global nature of climate change creates jurisdictional complexities that limit the effectiveness of national court remedies.

The political question doctrine and similar concepts in other legal systems create ongoing challenges for climate litigation, as courts struggle to balance judicial intervention with democratic governance principles. These tensions are particularly acute in cases seeking broad policy changes or specific emission reduction targets.

7.2 Implementation and Compliance

Even successful climate litigation faces significant challenges in implementation and compliance. As climate litigation continues to mature as a field, attention will turn to implementation of judgments hailed as landmark wins for the climate movement. In 2024, significant attention turned to the implementation of the KlimaSeniorinnen judgment.

The gap between legal victories and actual emission reductions raises questions about the effectiveness of litigation as an accountability mechanism. Courts generally lack the institutional capacity to monitor ongoing compliance with complex climate commitments, creating enforcement challenges.

7.3 Corporate Responses and Strategic Behavior

Corporate responses to climate litigation have evolved to include both compliance efforts and strategic resistance. Companies have developed sophisticated legal and public relations strategies to manage litigation risk while potentially limiting the substantive impact of legal requirements.

The emergence of anti-climate litigation funded by corporate interests creates additional challenges for accountability, as opponents of climate action use legal strategies to challenge both government policies and corporate sustainability initiatives.

VIII. FUTURE DIRECTIONS AND IMPLICATIONS

8.1 Emerging Legal Theories

Climate litigation continues to evolve through the development of new legal theories and the adaptation of existing doctrines to climate contexts. Future developments are likely to include increased emphasis on intergenerational equity, expanded concepts of corporate fiduciary duty in climate contexts, and integration of international law principles into domestic climate cases.

The development of climate litigation in new jurisdictions, particularly in the Global South, is likely to create new legal theories and approaches that reflect different legal traditions and governance structures. These developments may influence climate litigation globally by providing alternative frameworks for accountability.

8.2 Integration with Climate Policy

The relationship between climate litigation and policy-making is likely to become increasingly complex as courts and legislatures develop complementary and sometimes competing approaches to climate governance. Successful integration of litigation and policy approaches will require careful attention to institutional roles and democratic accountability.

Future climate litigation may increasingly focus on implementation and compliance with existing climate commitments rather than establishing new obligations, creating more sophisticated accountability mechanisms that bridge legal and policy domains.

8.3 Corporate Governance Evolution

Climate litigation is likely to drive continued evolution in corporate governance practices, particularly regarding climate risk disclosure, strategic planning integration of climate considerations, and board oversight of climate-related business risks. These changes may create more effective accountability mechanisms than specific emission reduction requirements.

The expansion of climate litigation to new sectors and types of corporate actors, including financial institutions and professional services firms, is likely to create new forms of accountability that address the full range of actors contributing to climate change.

IX. CONCLUSION

Climate litigation has emerged as a transformative frontier in environmental accountability that fundamentally alters the legal landscape for climate governance. Through strategic adaptation of existing legal principles to climate contexts, litigation has created new forms of accountability that complement and, in some cases, substitute for inadequate political responses to climate change.

The analysis demonstrates that climate litigation's significance extends beyond individual case outcomes to encompass systemic changes in legal doctrine, corporate behavior, and normative frameworks governing climate responsibility. The integration of human rights principles with environmental law, the extension of corporate duty of care to climate contexts, and the development of new procedural mechanisms for climate accountability represent fundamental shifts in environmental law.

The global expansion of climate litigation, with over 2,900 cases filed worldwide, reflects not merely increased awareness of climate issues but a fundamental transformation in how legal systems address global environmental challenges. The emergence of climate litigation in the Global South, the development of international and regional court precedents, and the evolution of sophisticated legal theories demonstrate the maturation of climate litigation as a distinct field of legal practice.

However, climate litigation faces significant challenges that limit its effectiveness as a comprehensive accountability mechanism. Procedural barriers, implementation difficulties, and strategic corporate responses create ongoing obstacles to effective climate accountability through litigation. The emergence of anti-climate litigation further complicates the legal landscape and demonstrates the contested nature of climate law.

The future of climate litigation as an accountability mechanism will depend on continued evolution in legal theory, improved integration with climate policy, and development of more effective implementation and compliance mechanisms. The successful establishment of climate litigation as a new frontier for environmental accountability represents a significant achievement, but realizing its full potential will require ongoing innovation and strategic development.

Climate litigation's contribution to environmental accountability lies not in replacing other forms of climate governance but in creating complementary mechanisms that enhance overall climate action. By establishing legal obligations where political will is insufficient, creating transparency where corporate disclosure is inadequate, and providing remedies where administrative processes fail, climate litigation creates a more comprehensive and robust framework for climate accountability.

The emergence of climate litigation as a new frontier represents a fundamental shift from discretionary to obligatory approaches to climate governance, from political to legal accountability mechanisms, and from national to transnational frameworks for addressing global environmental challenges. This transformation establishes climate litigation as an essential component of contemporary environmental law and governance, with implications that extend far beyond individual cases to encompass the broader legal and institutional framework for addressing climate change.

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