Kent Law Review 10 (1), November 2025

https://journals.kent.ac.uk/index.php/klr/index

THE ROLE OF JUDICIAL LITERACY IN CLIMATE CHANGE

NATHALIA CONTRERAS CECCARELLI

University of Kent, United Kingdom

ABSTRACT: As climate change litigation increasingly emerges as a crucial instrument in global environmental governance, courts are frequently tasked with the interpretation of complex scientific and technological evidence. This paper critically investigates whether legal frameworks genuinely shape the global response to climate change or whether this response is becoming more influenced by corporate technological power, leaving courts struggling to keep pace; in particular, through the case studies of *Milieudefensie v. Shell*,[1] *Urgenda v Netherlands*,[2] *and Juliana v United States*.[3] By integrating environmental law, judicial studies, and Foucault's theoretical framework on power and knowledge, this paper advocates for reforms that enhance judicial literacy and independence. Without climate-literate judiciaries, there is a risk of creating dangerous precedents and an overall delay in climate change action.

Keywords: Climate change litigation; environmental law; Foucault; judicial literacy and independence.

1. Introduction

The rise in global climate litigation has made the judiciary a key mediator in pressing states and corporations to take action on climate change.[4] However, this trend highlights a significant vulnerability, which is that judges often lack the understanding of the complex scientific and technological issues essential for effective climate governance. This paper argues that judicial responses to the climate crisis are increasingly shaped by corporate technology, creating a power imbalance. As courts

[1] *Milieudefensie et al. v Royal Dutch Shell Plc* (Case No C/09/571932 / HA ZA 19-379.
[2] *Urgenda Foundation v The State of the Netherlands* (Supreme Court of the Netherlands, 20 December 2019) ECLI:NL:HR:2019:2007.
[3] *Juliana v United States* 217 F Supp 3d 1224 (D Or 2016).
[4] Joana Setzer and Catherine Higham, *Global Trends in Climate Change Litigation: 2022 Snapshot* (Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science 2022) 1.

rely on complex climate technologies, the lack of specialised knowledge among judges allows corporate entities that control data and expertise to disproportionately influence legal outcomes and public discourse.

To substantiate this claim, this paper will be organised into four parts. First, it will precisely define the concepts of a “climate-literate judiciary”, “corporate technological power”, and “dangerous precedents”. Second, it will deploy Foucault’s framework of power/knowledge to theorise how corporate actors produce and legitimise technological "truths" within the courtroom. Third, through a comparative analysis of key case law from various jurisdictions, including *Milieudefensie v Shell,*[5] *Urgenda v Netherlands,*[6] *and Juliana v United States,*[7] it will demonstrate how judicial interpretation, or avoidance, of technology creates tangible legal outcomes. "Global" refers not to universal legal applicability, but to the difficulties courts face in addressing complex scientific and technological evidence in climate disputes. Lastly, the paper examines the societal implications of this judicial blind spot and suggests ways to enhance it.

2. Key Concepts

Before exploring the topic, it is useful to clarify key concepts. First, "climate-literate judiciary" refers to the need for judges to evolve their understanding and skills. This would assist them in engaging with the complex evidence presented in climate-related cases. Rather than simply accepting this evidence or dismissing claims due to the complexity of the research. In other words, the climate-literate judiciary is to move beyond a simple "battle of the experts" to a deeper inquiry into the political economy of knowledge production. As Smith and others explain, climate attribution science is currently underutilised in litigation, which leads to the dismissal of cases due to a lack of proof and understanding.[8] If the Judiciary evolves, climate change litigation could be more progressive and have more impact worldwide.

The British Institute of International and Comparative Law recognise that judges need to be more knowledgeable about climate change to make strong decisions

[5] *Milieudefensie et al. v Royal Dutch Shell Plc* (Case No C/09/571932 / HA ZA 19-379).
[6] *Urgenda Foundation v The State of the Netherlands* (Supreme Court of the Netherlands, 20 December 2019) ECLI:NL:HR:2019:2007.
[7] *Juliana v United States* 217 F Supp 3d 1224 (D Or 2016).
[8] Rupert Stuart-Smith and others, 'Filling the evidentiary gap in climate litigation' (2021) 11 Nature Climate Change 651.

regarding the urgency of climate litigation.[9] This judicial evolution is required because of the rise of corporate technological power. This technology includes peer-reviewed science and speculative or commercially motivated studies. The judiciary should have the ability to evaluate, considering their affiliations, funding sources, and any potential biases that may influence their decisions and provide transparency and acknowledge this in their decisions.

On the other hand, failing to develop this literacy leads to the creation of "dangerous precedents". This term goes beyond simply indicating an unfavourable judgment for environmental claimants. A dangerous precedent is a legal outcome that, while seeming to address an issue, embeds weak standards into the foundation of environmental law. Examples of such legal precedents include rulings that, either formally or informally, endorse ineffective or speculative technologies as legitimate alternatives. Furthermore, procedural judgments that classify the scientific and technical complexities associated with climate change as "political questions," which are considered to fall outside the court's jurisdiction, present significant challenges. A notable case in this context is *Juliana v United States,* where such a ruling effectively closes the courthouse doors to future claims, creating a legal vacuum in which accountability should otherwise exist.[10] These precedents pose risks beyond their individual cases, leading to delays in climate change action, which affects everyone.

3. Power, Knowledge, and the Judiciary's Weaknesses

Michel Foucault's theory of power/knowledge provides a lens for analysing these dynamics. Foucault posits that knowledge is never neutral. It is produced within regimes of power that shape what counts as truth.[11] Foucault suggested that modern power functions not necessarily by repression, but by generating knowledge that shapes perceptions of truth and normality.[12] In the context of the law, legal rulings not only validate existing laws but also play a crucial role in shaping them. In climate litigation, courts often depend on expert testimony, disclosures, or scientific models to

[9] Roberto Buizza and others, 'The Role of Science in Climate Change Litigation' (BIICL Blog, 2023).
[10] *Juliana* (n 7).
[11] Michel Foucault, *Power/Knowledge Selected Interviews and Other Writings 1972-1977* (Gordon Colin ed, The Harvester Press 1980) 98-107.
[12] Michel Foucault, 'Order of Discourse' in Robert Young (ed), *Untying the Text: A Post-Structuralist Reader* (Routledge & Kegan Paul 1981) 53.

assist them in their decisions. However, as Kotze and others analyse, these sources of knowledge can be influenced by corporate interests, proprietary data systems, and unclear methodological choices.[13] Therefore, embedding them into jurisprudence and thereby shaping climate governance. Moreover, the courtroom serves as a venue where information provided by corporations is presented, scrutinised, and ultimately accepted as "truth". As Smith explains, legal institutions do not merely apply existing expert knowledge. They actively shape, endorse, and assert their power over what is deemed valid scientific evidence.[14] However, when there is a significant imbalance in resources and understanding, this process can be misused and therefore influence the judge's judgment and the outcome of the cases.

A judiciary that lacks the capacity to question the foundational assumptions of a complex climate model or to examine the limitations of a proposed technology risks becoming a passive recipient of the corporate narrative. In Foucault's terms, it transforms into an institution that, without any overt coercion, disciplines itself to function within the regime of truth set by the more powerful entity.[15] Judicial evolution is necessary because, without climate-literate judges and independent scientific oversight, courts risk setting dangerous precedents that could delay climate change action. Judges are faced with extensive data from a corporate defendant and limited information from a non-profit plaintiff may favour the more detailed submission. When a corporation showcases a significant investment in speculative technology, it appears proactive and reasonable, leading the court to accept it without fully assessing the actual risks.

4. Case Studies: *Milieudefensie v Shell*, *Urgenda v Netherlands*, and *Juliana v United States*

Milieudefensie concerns Shell's corporate responsibility to reduce its global emissions by 45% by 2030.[16] The ruling was based on Dutch tort law (Article 6:162 of the Dutch Civil Code), interpreted in light of human rights and international climate obligations.

[13] Louis Kotzé and others, 'Courts, climate litigation and the evolution of earth system law' (2023) *Global Policy* 6-11.
[14] Carole Smith, 'The Sovereign State v Foucault: Law and Disciplinary Power' (2000) 48(2) *The Sociological Review* 284-296.
[15] Michel Foucault, *Discipline and Punish: The Birth of the Prison* (Pantheon Books 1975) 184-224.
[16] *Milieudefensie* (n 5).

The court determined that Shell owes a duty of care not only to Dutch citizens but also to global populations affected by climate change.[17] It rejected Shell's argument that fulfilling such targets was speculative and beyond its control. The courts initially ruled in favour of the claimant, but Shell appealed, leading to significant ambiguities. While the judgment clarified that companies like Shell must contribute to climate change mitigation, it allowed them to set their own reduction targets instead of following the Paris Agreement's recommended 45% reduction.[18] This gives companies latitude to increase profits without fully addressing climate change.

The courts often avoid technical disputes over emissions accounting, which limits the effectiveness of climate litigation. For instance, the court ruled in favour of Shell regarding Scope 3 emissions, which make up about 95% of its reported emissions. The court set a high standard for scientific evidence and rejected specific reduction percentages due to a lack of consensus. Although it acknowledged that the 45% target is just an average, the appellate court's approach does not adequately address the systemic nature of climate change, and transnational corporate liability adds further complexity to the issue.

Other important landmark cases confirm the judiciary's mixed record in grappling with technological claims. In *Urgenda v Netherlands*,[19] the Dutch Supreme Court in 2019 affirmed that the state had violated its duty of care under the European Convention on Human Rights (Articles 2 and 8) by failing to meet minimum emissions reductions. As noted by Spinjkers, this ruling highlights that the court adopted a progressive stance, primarily relying on established international scientific consensus instead of conducting a critical assessment of the underlying data.[20] This dependence raises important questions about the ability of judges to evaluate scientific information. The *Urgenda* legacy should not be viewed as a universal model but rather critically assessed for future legal cases. Civil courts in this jurisdiction have a strong tradition of intervening in matters of public interest. For climate law to be effective, judges must improve their ability to navigate complex data systems and understand legal

[17] Maurits Dolmans and Andreas Wildner, '*Milieudefensie v Shell* – a Pyrrhic victory for the oil and gas industry?' (Law Forward Review, 13 November 2024) 1-3.
[18] ibid.
[19] *Urgenda Foundation* (n 6).
[20] Otto Spijkers, 'The Influence of Climate Litigation on Managing Climate Change Risks: The Pioneering Work of the Netherlands Courts' (2022) 18(2) Utrecht Law Review 127, 134-138.

intricacies, rather than relying solely on established frameworks, to avoid endorsing misleading climate claims.

In contrast, the case of *Juliana v United States* in the U.S. involves young plaintiffs who claim that the government violated their constitutional rights by failing to act on climate change, as the government's inaction endangers future generations' right to life, liberty, and property.[21] While acknowledging the climate crisis, the court dismissed the case on the basis of standing and redressability, stating that it lacked the institutional competence to mandate comprehensive climate policy. This case highlights the challenges that courts face when addressing complex scientific and policy issues. The Harvard Law Review notes that attempts to tie courts to limited and precise legal standards effectively restrict their ability to address existential issues, such as those presented by climate change.[22] This case and its critiques highlight the central thesis of this paper, which is that unless judges improve their scientific literacy and flexibility, their role in climate litigation is largely symbolic rather than transformative.

Judges are trained legal experts who resolve disputes based on established principles. However, the complexity of climate claims linked to science and long-term projections often clashes with traditional legal doctrines such as standing and causation. The case of *Juliana* highlights how strict thresholds can impede engagement with relevant climate science. The focus should not be on judges always favouring climate action, but on evolving legal reasoning to tackle the distinct challenges of climate litigation. Additionally, differences in judicial independence and legal systems worldwide complicate the assessment of climate claims.

5. Policy, Societal Impact, and Implications

The judicial failure to critically engage with corporate technological power has wide-ranging implications. First, it undermines public trust in climate law as a mechanism for justice. If courts validate speculative data from these decisions, citizens may view legal systems as complicit in climate delay rather than for accountability. Recent

[21] *Juliana* (n 7).
[22] 'Juliana v. United States: Ninth Circuit Holds That Developing and Supervising Plan to Mitigate Anthropogenic Climate Change Would Exceed Remedial Powers of Article III Court.' (2021) 134 Harvard Law Review 1929

research highlights the significant judicial implications of climate litigation. The LSE Grantham Institute points out that the rise in greenwashing lawsuits demonstrates growing societal frustration with vague or misleading corporate climate claims.[23] Without strong judicial engagement, climate law risks being viewed as merely performative, offering a facade of accountability while allowing corporate inaction to persist.

Second, the issue exacerbates climate inequality, as Tigre and others explain, judges and courts often marginalise communities that lack financial resources, despite the validity of their claims.[24] These marginalised communities raise claims against multinational companies, which have the financial means to support their legal battles. This factor should also be considered in judicial decisions. Marginalised communities suffer the most from climate impacts but have the least access to technical expertise or legal remedies.[25] When courts accept data controlled by corporations without scrutiny, they risk worsening inequality by favouring resource-rich companies over the rights of populations vulnerable to climate change. Seen from a Foucauldian view, corporations can use data to escape liability, and climate law becomes a tool of exclusion rather than empowerment.

Third, it risks creating dangerous or weak precedents. Courts that decline to set enforceable emissions standards or scrutinise corporate technologies may make it harder for future litigants to challenge inadequate climate strategies and therefore delay meaningful action.[26]

Finally, after the analysis, a policy reform would be recommended to address these risks, including the establishment of specialised Climate Benches. These courts would consist of divisions with judges trained in climate science and environmental economics. Additionally, judicial panels should be supported by independent scientific advisors who can audit corporate climate claims. Lastly, courts should implement

[23] Juliana Vélez-Echeverri, Catherine Higham and Joana Setzer, ‘Climate-washing litigation: towards greater corporate accountability?’ (Grantham Research Institute, 17 April 2024).
[24] Maria Antonia Tigre, Melanie Jean Murcott and Susan Ann Samuel (eds), *Climate Litigation and Vulnerabilities: Global South Perspectives* (1st edn, Routledge 2025) 301- 304.
[25] Jessica Wentz and others, 'Research Priorities for Climate Litigation' (2023) 11 Earth’s Future e2022EF002928 5-7.
[26] ibid 8-12.

evidence transparency requirements, mandating the disclosure of the methodological assumptions, data sources, and models used in corporate climate plans.

6. Conclusion

This paper argues that climate litigation is a vital tool in addressing the climate crisis, yet its effectiveness is hindered by the judiciary's challenges in handling complex technological claims, as seen in cases such as *Milieudefensie*, *Urgenda*, and *Juliana.* While the judiciary can hold governments and corporations accountable, limitations arise from procedural barriers and a reluctance to engage with scientific evidence. To enhance the effectiveness of climate law in promoting accountability and justice, the judiciary needs greater climate literacy, alongside institutional reforms that foster transparency and collaboration. Without these changes, climate litigation risks setting harmful precedents and delaying necessary actions against climate change.

Through the lens of Foucault's concept of power/knowledge, this paper highlights how legal authority can reinforce, rather than challenge, corporate dominance over climate narratives. Without critically examining methodological assumptions, funding sources, and biases, judges may unintentionally reinforce climate inequality by favouring the perspectives of wealthy litigants over those of marginalised communities most affected by climate impacts.

In conclusion, as previously mentioned, without reforms that enhance judicial literacy and independence in evaluating scientific evidence, courts may inadvertently reinforce corporate narratives, diminish public trust, and delay crucial climate action. It is essential to ensure that legal institutions can critically assess climate-related knowledge so climate law can continue to be a credible and just tool for governance.

Author info
Nathalia Contreras Ceccarelli
Ndc7@kent.ac.uk
Nathaliaceccarelli@gmail.com
Student
Law School

Nathalia Contreras Ceccarelli is a Venezuelan student in her final year of law at the University of Kent. Her main areas of interest are environmental law, public law, privacy, and data protection. She aspires to become a commercial solicitor.