



# **CSSN Research Report 2022: Identifying Gaps in Climate-Litigation-Relevant Research: An Assessment from Interviews with Legal Scholars and Practitioners**

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## About CSSN

This report is being released through the Climate Social Science Network (CSSN), a global network of scholars headquartered at the Institute at Brown for Environment and Society, launched in October, 2020. CSSN seeks to coordinate, conduct and support peer-reviewed research into the institutional and cultural dynamics of the political conflict over climate change, and assist scholars in outreach to policymakers and the public.

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## Disclosure statement

B.F. has served as a consulting expert in climate litigation in the U.S. and internationally.

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# 1. Introduction

Over the past decade, climate litigation has exploded throughout the world (Setzer and Higham, 2021). Climate cases are ongoing in nearly 40 countries, (United Nations Environment Programme, 2020), and more than 1,000 new suits have been filed since 2015 (Setzer and Higham, 2021). As the climate crisis deepens and action becomes ever more urgent, courts around the world will continue to be called on for justice, accountability, and oversight.

Climate litigation is diverse. Some suits seek monetary damages, others court-ordered injunctions to change government or corporate behavior, and still others non-binding advisory opinions or other remedies (Franta, 2021). Numerous areas of law are implicated, including products liability, human and constitutional rights, securities law, and more. One common thread, however, is that rigorous, robust research is needed to inform these actions.

The range of research used to inform climate litigation is also diverse, spanning climatology (e.g., attribution science), history (e.g., corporate behavior), economics (e.g., assessments of damages), law (e.g., crafting of remedies), and much more. Researchers having a wide variety of disciplinary backgrounds and interests can contribute to informing climate litigation as the field expands into new areas of inquiry, making this a growing, multidisciplinary field.

Climate-litigation-relevant research has enjoyed high impact in recent years in the legal, media, and academic arenas.<sup>1</sup> Yet there remains ample room for growth in terms of both the number of active researchers in the field and the range of topics analyzed.

Here, we contribute to this growing area by identifying a variety of climate litigation-relevant research topics, gained through interviews with legal scholars and practitioners. We hope to help inform research agendas, identify potential priority areas, and illuminate new topics.<sup>2</sup> Our survey was not exhaustive, nor did it examine every potential area of climate litigation. Moreover, we selected interviewees based on our professional networks and knowledge of the field, as well as on interviewees' availability. We strove to include a range of perspectives, including with regard to practice area, geography, and theory of change.

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<sup>1</sup> See, for example, Richard Heede, 2014, Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854–2010, *Climatic Change*, <https://link.springer.com/article/10.1007/s10584-013-0986-y>; Geoffrey Supran and Naomi Oreskes, 2017, Assessing ExxonMobil's climate change communications (1977–2014), *Environmental Research Letters*; Amy Westervelt, 2016–2022, *Drilled* (podcast), <https://drillednews.com/drilled-podcast-season-1/>

<sup>2</sup> For a complementary discussion informed by a broader range of inputs, see Wentz et al. (forthcoming), *Research Priorities for Climate Litigation*.

Nonetheless, our results inevitably reflect various biases, including with regard to our framing of issues, formulation of questions, selection of interviewees, availability of interviewees, administering and analysis of interviews, and more. Therefore, we offer this analysis not as a definitive guide to climate-litigation-relevant research, but rather as a stimulant to this growing and important field. We envision that academic researchers may use this analysis to guide research directions, lawyers may use it to become more fully aware of other lawyers' thinking, and legal scholars and observers of climate litigation may use it to help track and anticipate trends in the field.

Interviewees identified a wide variety of research themes, including scientific studies to attribute impacts to and quantify damages from climate change, social science research and journalistic investigation on potential defendants' internal knowledge, public communications, and strategic decision-making regarding climate change, research to help inform injunctions ordering decarbonization, and more.

In the following section, we describe our interview and analysis methods. In Section 3, we present results. Section 4 contains discussion, including trends revealed by our analysis, limitations of our analysis, and directions for future work. Section 5 highlights our conclusions.

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## 2. Methods

The research priorities identified in this article are based on a set of semi-structured interviews conducted with 18 legal scholars and practitioners in March and April 2021. Interviews were conducted using an open-ended semi-structured interview script that was informed by (1) discussions during a November 2020 workshop on litigation-relevant research gaps and opportunities, (2) assessments of trends in climate change litigation and (3) assessments of how different types of research have factored into the development and outcomes of cases. Interviews were coded using NVivo software to assess research topics.

This research is based on grounded theory, which is an inductive methodology for collecting and synthesizing data for the generation of theory (Glaser and Strauss, 1967). A grounded theory approach is appropriate for addressing complex systems of study and assists in the systematic identification of implicit belief systems, with an end goal of making them explicit.

There are several grounded theory methodologies (Andrews, 2012; Corbin & Strauss, 1990; Glaser, 1992; O'Reilly et al., 2012; Wuest and Merritt-Gray, 2001). This research follows modified guidelines originally set forth by classic grounded theory (CGT) (Glaser & Strauss, 1965; 1967). CGT is a constant comparative process that results in the generation of abstractions, not descriptions (Glaser, 2007). There is not a strict coding structure associated with CGT; instead, free coding occurs in two passes. Substantive coding is the process through which the researcher works directly with collected data (Holton, 2010). Theoretical coding is used to better understand how substantive codes relate to each other for integration into theory (Glaser, 2007).

This work varies from CGT in the firm use of a research perspective established at the onset of the research. While theories were not set at the beginning of the research, the researchers were already familiar with existing literature, strategic approaches, and viewpoints of various experts. This knowledge was used to inform the framing of this research. The discussions completed in advance were used as an additional set of data to inform the study. Research remained open and permitted the inductive process to work; therefore, this work is classified as modified grounded theory.

For this work, interviews and coding were conducted by two researchers who shared a common script (Appendix 1) and code book (Table 3). The code book focused on identifying key themes and distinct research ideas identified by participants. Once the interviews were coded, researchers combined related codes to identify key themes.

Eighteen interviews were conducted to better understand research gaps in climate litigation. These interviews were informed by a basic script but were open-ended. All interviews took place remotely with recorded audio. Participants were selected based on geographic location and legal expertise (Table 1). Although there was diversity among participants, there was a geographic bias towards US-based litigators. However, many of the US-based litigators worked in a broader geographic context, and many interviewees in general were engaged with larger, international professional networks of climate litigators. Interviewees did begin to reach a saturation of ideas, but that does not mean that this work is fully representative. In particular, our interviewees did not include any litigators based in the Caribbean, Africa, the Middle East, or the Pacific Islands, to name a few geographic limitations. This limitation represents an opportunity to expand this work.

**Table 1: Description of interviewees**

Primary legal expertise area	Number of interviewees
Environmental law	7
Human rights	5
Constitutional rights	4
Products liability	2
Primary geographic area	Number of interviewees
North America	8
Europe	4
South America	3
Asia	2
Australia	1

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## 3. Results

This work serves as a starting point or catalyst for understanding current gaps in scientific and scholarly knowledge that could help to inform climate litigation across the globe. This work provides a list of general research areas identified as gaps, lists of specific research questions, and insights into current trends.

Interviewees pointed to a variety of different research areas within the natural sciences, the social sciences, legal analysis, and translational work. Key themes identified in the interviews included attribution science, research on obstruction of climate science and policy, and evaluation of mitigation obligations. Major topic families raised by interviewees included attribution science, corporate research, economic impacts of climate change, fiduciary duties, and legal research (Tables 2 and 3, Appendix 2).

In the natural sciences, attribution science was the most discussed topic. Interviewees raised a variety of specific impacts, ranging from sea level rise and extreme heat to impacts on cultural resources and food supplies. There was broad interest in understanding the relationship between climate change and specific impacts and particular interest in narrowing the geographic scale of studies based on strategic locations for litigation. Discussions of attribution science also noted a need to better understand relationships between impacts and specific carbon pollution sources, including nations and corporate actors. Interviewees also discussed a need for more research on compound impacts.

Another broad category of interest was corporate research. Interviewees raised a need for more diverse research exploring corporate disinformation and greenwashing, as well as historical research on internal corporate knowledge of climate change. This includes research on fossil fuel companies outside the US and research on the role of corporate actors outside the fossil fuel industry. There was a keen interest in more research on the connections between climate impacts and the financial sector that has funded fossil fuel projects.

Another key area of interest includes research quantifying economic damages related to climate impacts, especially timely research focused on local impacts. Interviewees also noted a need for further quantification of emissions from countries, companies, and specific projects. Finally, interviewees called for additional scholarship exploring legal avenues for addressing climate change harms.

Table 2 lists the most discussed topic areas, and Table 3 lists code families and individual codes that arose in interview transcripts. Appendix 2 presents lists of individual research topics raised by interviewees in the natural sciences, the social sciences, legal analysis, and translational work. We do not report the raw number of mentions for each topic because frequency may be skewed by individual interviews and does not necessarily indicate the importance or urgency of a particular research area.

**Table 2: Most discussed topic areas (descending order)**

<b>Topic area</b>
Emissions tracking
Extreme weather attribution
Impact attribution at local level
Corporate disinformation and greenwashing
Corporate knowledge of climate change
Economic damages from climate change
Fair share emissions accounting for companies and nations
Fiduciary duties of banks and investors



**Table 3: Code families and codes identified in interviews (alphabetical order).**

Code family	Code
Attribution, general	
	Agriculture, impacts on
	Air pollution, general
	Biodiversity, impacts on
	Culture, impacts on
	Demand side, supply side analysis
	Emissions tracking, from corporations, governments
	Extreme heat
	Extreme weather
	Fisheries, impacts on
	Food supply, impacts on
	Human, public health
	Interconnected impacts

	Local analyses
	Marine life, impacts on
	Sea level rise
	Source attribution, companies
	Young people, impacts on
Corporate research, general	
	Adaptation to climate change by companies
	Biofuels Carbon capture Conspiracy, evidence of
	Dark money
	Disinformation
	Greenwashing, advertising
	Historical research, general
	Influence on media from companies
	Internal corporate knowledge of climate science

	Lobbying
	Power utilities
	Supply chain
	Exports of fossil fuels
Economic impacts, general	
	Cost benefit, economic analysis
	Damages, quantification
	Energy transition
	Fair share, corporations, nations
	NDCs (Nationally Determined Contributions), corporations
	NDCs, multiple countries
	NDCs, single country
	Policy development
	Production curtailment, impacts from Socioeconomic impacts
Fiduciary duties	

	Fiduciary duties of banks, investors
	Fiduciary duties of fossil fuel companies
Legal research, statutes, causes of action	
	Gathering research needs, this project
	Legal structures in different countries
Other	
	Oil spills
	Urgency
	Whistleblowers, finding, protecting, interviewing

Research questions identified in the interviews and given in Appendix 2 fell into four main categories: natural science, social science, legal research, and translational work.

The majority of unique research topics raised by interviewees focused on social science and fell into three broad categories: (1) government and societal action, (2) corporate action regarding the fossil fuel industry, and (3) corporate action for non-fossil-fuel industries. Regarding government and societal action, interviewees raised topics regarding the energy transition, including viability and effects on workers, and evaluation of the respective responsibilities of consumers and producers in the context of climate change. Some questions had clear links to current litigation strategies, such as evaluating historical counterfactual scenarios for preventing or reducing observed climate change impacts and damages. Litigators also raised emerging and timely questions, including whether governments are using the response to COVID-19 to slow actions necessary to reduce global warming emissions and/or to comply with the Paris Agreement.

Interviewees also raised topics related to the fossil fuel industry. Several research questions in this category focused on policy obstruction and public-facing disinformation. Interviewees discussed the importance of understanding economic costs associated with climate policy obstruction and delay, as well as how to translate carbon budgets to emissions reduction requirements for corporations. Some research questions sought to understand dynamics within the industry, such as climate adaptation activities undertaken by fossil fuel companies over time and whether proposed fossil fuel production projects are profitable when considering shifting climate policy scenarios, while other research topics focused on external impacts, such as tactics being used to market fossil fuel products to youth today. There were also calls for research focusing on when companies knew about climate change to expand to non-US based companies.

Interviewees also raised the importance of research on corporate actors outside the fossil fuel industry, such as the financial industry, chemical manufacturers, agriculture, insurance companies, and public relations firms. Litigators expressed interest in research that explores when different industries knew about climate change and how they have responded. There is interest, for example, in work to assess the role of financial backers and public relations firms in climate change, as well as research on actions various industries have taken to adapt to climate change impacts while continuing to support fossil fuels or emit greenhouse gas. As more companies produce net-zero plans, there is also interest in comparing public-facing commitments to actual actions and assessing climate pledges through lenses of greenwashing and climate obstruction.

Research questions relating to natural science broadly fell under attribution science, development of standards for various technologies in the context of climate litigation, and assessment of impacts from fossil fuel and non-fossil-fuel sectors. Questions related to attribution science highlighted the importance of research on the Global South, the development of finer spatial resolution, and analysis of an expanded range of impacts, including impacts on youth, public health, marine life, and biodiversity. Litigators also expressed the importance of understanding the costs of adaptation in coastal and non-coastal locations and broader socioeconomic impacts on vulnerable populations, including populations displaced by climate change. Research areas discussed included fossil fuel producers but extended beyond them to include other relevant activities, including agriculture and deforestation. Litigators also noted a disconnect between time frames traditionally used for climate change studies (e.g., 100 years) and timeframes more relevant in courts (e.g., zero to 20 years) and the importance of understanding emission reduction requirements for greenhouse gases beyond carbon dioxide, such as methane and black carbon.

Legal research and analysis questions included doctrinal and comparative analysis between jurisdictions, the legal status of fossil fuels, and novel legal approaches. Interviewees were interested in analyses to better understand the global climate litigation landscape, including comparative analyses between jurisdictions of standards of scientific evidence, standing, duties of care, and the role of human rights law. Generally, there was interest in understanding what legal approaches may be replicable or scalable across

nations or jurisdictions. Interviewees also raised a variety of doctrinal issues specific to the US, although they may have applicable analogies in other jurisdictions, such as the limits of the political question doctrine and protected speech and the doctrine of imminence in the context of climate change. Other topics pertained to remedies and the roles of injunctions, compensatory damages, and punitive damages.

Interviewees raised a variety of topics related to the legal status of fossil fuels, including investments in fossil fuels, liability for product (Scope 3) emissions, corporate director liability, and liability of power utilities and state-owned fossil fuel companies. Interviewees also raised questions relevant to novel and emerging legal approaches, including the obligations of non-party stakeholders to the Paris Agreement (e.g., corporations and cities), legal strategies for addressing financial support for fossil fuels, and approaches for addressing shorter-lived climate pollutants such as methane.

Finally, interviewees noted a need for translational work to aid in communication between stakeholders at the nexus of science and climate litigation. For instance, interviewees discussed the importance of resources to help litigators and judges understand climate science and relevant history, as well as resources to help scientists understand legal standards of evidence, certainty, and proof.

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## 4. Discussion

Our results show that there is keen interest in a wide range of research that may inform climate litigation. The numerous potential research topics identified by interviewees spanned social sciences, natural sciences, and legal analysis, as well as translational work for communicating findings to judges and lawyers.

Often, identified research topics reflected interviewees' legal focus or theory of change. For instance, lawyers with experience in product liability often pointed to the importance of research on potential defendants' internal knowledge and communications, while those focused on constitutional or human rights often discussed the importance of emissions standards that might be replicated across jurisdictions. Moreover, some interviewees were part of common professional networks where ideas are regularly shared. Both of these trends suggest the importance of engaging with a wide variety of lawyers, scholars, and others in identifying and evaluating potential research areas. Thus, we see broad scope for replication of methods and expansion of this work.

One potentially surprising theme was the importance of research even when not directly focused on climate litigation. For example, multiple interviewees mentioned the importance of research showing the feasibility of the transition away from fossil fuels, which helps demonstrate to judges that remedies

seeking to facilitate the transition are reasonable. Similarly, some interviewees noted the importance of research that might help to characterize legislative lobbying activities, even if such lobbying is not the direct focus of lawsuits.

Another cross-cutting theme was research that might help to characterize climate damages. In addition to economic assessments of adaptation costs and monetary losses due to climate change, interviewees raised the importance of research on harm due to corporate disinformation and policy delay, continued investments in fossil fuel projects and infrastructure, and actions counter to the Paris Agreement taken by both private and public actors.

Throughout, interviewees pointed to the importance of translational work to communicate scholarship and scientific research to judges and lawyers. Multiple interviewees mentioned the need to communicate to judges the urgency of action to address climate change and the fact that actions taken today will help to determine impacts over future decades. Interviewees also noted the importance of research addressing impacts and trends that take place over legally relevant time horizons, such as a few decades (rather than the common time horizon of a century in climate research). Generally, interviewees called for more translational and linking work between the scientific, scholarly, and judicial communities.

Specific research areas with potential for high impact include but are not limited to:

- Detailed investigations of the internal knowledge and strategic decisions of potential defendants, including fossil fuel producers, other companies with direct influence over legally relevant shares of emissions, and governments.
- Studies enumerating impacts and quantifying damages attributable to climate change in locations relevant to litigation, inclusive of geographic areas that historically have been understudied and under-resourced.
- Forward-looking studies exploring decarbonization options for potential defendants.
- Research exploring the internal knowledge, corporate decision-making, and fiduciary duties of the financial sector with regard to fossil fuels and climate change more broadly.

We emphasize that this study has multiple limitations and is intended to catalyze and guide future work in this area. Numerous viewpoints and theories of change exist within the climate litigation space, and they are not all represented equally in our survey, if at all. The geographic representation of our sample was limited, and many attorneys we interviewed work in the national or international legal nonprofit sector rather than the private sector or at the community level.

Future work could address these limitations and focus on research needs for informing specific legal approaches (injunctions based on the Paris Agreement, suits for money damages, securities lawsuits, etc.) Moreover, identified research needs are likely to evolve as climate litigation continues to expand and evolve. Therefore, we see potential scope for conducting similar, expanded surveys in the future at regular intervals.<sup>3</sup>

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## 5. Conclusion

As climate litigation grows worldwide, research that can inform such litigation will also grow in importance. Our survey of legal scholars and practitioners shows there is already keen interest in research that might inform climate litigation. Research needs span a range of disciplines, including social sciences, natural sciences, legal analysis, and translational work.

Our study is intended to illuminate current and future research needs relevant to climate litigation in order to help guide researchers and inform practitioners. We also hope this study contributes to facilitating communication between the legal and scientific communities with regard to legal efforts to address climate change. Although we sought to include a diverse range of perspectives, our study is not comprehensive in terms of legal backgrounds, geographic scope, or legal approaches. Therefore, we encourage feedback from a diverse range of stakeholders on how this work can be strengthened and expanded. Future work could solicit perspectives from a wider variety of stakeholders and/or investigate in greater depth research areas relevant to particular legal approaches.

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<sup>3</sup> We also point to Wentz et al. (in preparation) for a broader assessment.



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# Appendices

## **Appendix 1: Interview script**

What types of climate litigation do you see as most promising and/or important? Why?

In your view, how important is scientific evidence and/or information to inform such litigation?

What types of scientific evidence/research areas have been most helpful in informing your cases and/or legal efforts?

What are the gaps? What types of scientific information is not available that you think would be valuable to inform litigation?

In what research areas would you like to see further work? Why?

Prompts: Strategically where do you see climate litigation moving and what research would be required to support this?

Are there legal strategies you would like to pursue that are being held back for lack of research or information in a particular area?

Are there specific research questions that would be useful for informing your legal efforts? If so, what are they and why?

**Appendix 2: Research topics raised by interviewees**

Table A2.1: Natural science research topics raised by interviewees

Category	Topic
Impact attribution	
	Attribution studies for climate impacts in Global South
	Case specific attribution studies connecting impacts to climate change and emissions sources
	Attribution science for individual events (e.g., heat waves, extreme storms)
	Mental health impacts, including on young people and specific communities
	Harm to health of children and youth, including from wildfires, storms, floods, and other impacts
	Public health impacts attributable to climate change, including from wildfires and other impacts, and including on vulnerable populations
	Harms to biodiversity
	Harms to marine life

	Impacts of climate change at current levels of warming for specific locations
	Costs of protecting coastal cities from sea level rise and extreme weather events
	Adaptation needs and costs for communities outside of coastal areas
	Populations impacted by climate displacement worldwide, and consequences for impacted countries
	Socioeconomic impacts of climate change in various jurisdictions around world
	Impacts attributable to individual fossil fuel production projects
Measurement and standards	
	Creation of a global climate risk index
	Evaluation of collective sum of all current NDCs (Nationally Determined Contributions)
	Future impact of corporate emissions based on projected emissions from individual companies
	Quantitative standards for biofuels and evaluation of role of biofuels for climate litigation

	Quantitative standards for carbon sequestration and evaluation of role of carbon sequestration within climate litigation
Non-fossil-fuel sectors	
	Climate impacts of non-fossil-fuel sectors such as meat producers
	Climate impacts of deforestation by country, including in South America
	Climate impacts of various industries including agriculture, fashion, luxury goods
Other	
	Climate effects of black carbon, including on Arctic ice
	Quantifying necessary reductions in methane, similar to carbon dioxide
	Evaluating tipping points and irreversible impacts for climate litigation
	Expressing climate impacts in litigation-relevant timeframes (e.g., within next 20 years)

Table A2.2: Social science research topics raised by interviewees

Category	Topic
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Government and societal action	
	Historical and current emissions from individual countries
	Translation of carbon budgets to emissions reduction targets for countries
	How practically to accomplish energy transition as informed by political science analysis
	Evaluation of viability of a green (non-fossil-fuel) energy economy
	Transition of workforce to a green (non-fossil-fuel) energy economy, including concept of just transition
	Historical counterfactual scenarios for avoiding or reducing damage from climate change
	Evolution over time of scientific consensus relating to climate change
	Effects of consumer vs. producer actions and evaluation of respective responsibilities
	Identifying sources of current attacks on non-fossil energy sources (electric vehicles, solar energy, wind energy, etc.)
	Evaluation of current state of climate politics and policy in broader historical context, including future directions
	Whether governments are using response to COVID-19 as reason to slow actions necessary to reduce greenhouse gases or comply with the Paris Agreement

	Whether state funding of science has prevented or impeded scientist engagement with climate litigation
Corporate action (fossil fuel industries)	
	Historical and current emissions from individual corporations
	Translation of carbon budgets to emissions reduction targets for corporations
	Fossil fuel supply side economics (supply side policies, effectiveness, etc.)
	Detrimental effects of further investments in fossil fuels
	Economic costs associated with delay of carbon emissions reductions, including delay related to industry deception and obstruction
	Evaluation of what companies are investing in with regard to emissions compared to what they are pledging
	Evaluation of whether proposed fossil fuel extraction projects are profitable in shifting climate policy scenarios
	Understanding how industry has sought to escape responsibility for product impacts (i.e., Scope 3 emissions)
	Potential and realized harm from fossil fuels compared to benefits

	Investigating solutions fossil fuel companies may have had at hand (e.g., renewable energy sources, carbon capture) but neglected to use or pursue
	Climate adaptation activities undertaken by fossil fuel companies
	Political and lobbying activities of fossil fuel companies over time, including refining companies and including compared to advertising
	Roles played by trade associations and other corporate linking organizations in climate policy obstruction
	Understanding extent to which industry created “fossil fuel culture,” similar to how tobacco companies created cigarette culture
	Marketing of fossil fuel products and brands to youth
	Fossil fuel industry’s relationship to governments and policymaking (U.S. National Petroleum Council, Energy Task Force under U.S. George W. Bush administration, etc.)
Corporate action (non-fossil-fuel industries and general)	
	Understanding when financial institutions knew about role of fossil fuels in climate change and climate impacts
	Quantifying role of financial backers in climate change, including connections between financial industry and carbon emissions
	Responses of financial industry to advances in climate science (e.g., as reflected in IPCC reports)



	Evaluating whether the financial sector has participated in greenwashing and climate change disinformation
	Actions of various industries to adapt to climate change while also contributing to the problem
	Impact of climate commitments from various companies, including compliance rates for corporate climate commitments and whether non-compliance may constitute greenwashing or misleading communication
	Differences between corporate reporting to shareholders and internal communications
	Roles played by the public relations industry in greenwashing and policy obstruction
	Evaluating where pledges differ from actual activities and plans for various companies
	Evaluating carbon budgets for various companies, including what it means for a company to align with the Paris Agreement
	Evaluating how corporate messaging around climate change has impacted consumer beliefs and behaviors
	Evaluating cost trends in the power sector
	Evaluating how the insurance sector has responded to climate change
	Understanding leverage of large companies in supply chains and how corporate action (from fossil fuel companies, automobile manufacturers, etc.) can be impactful

	State of corporate knowledge of climate change over time and potential concealment of knowledge from public
	Obstructive activities of corporations beyond overt denial of climate science
	Roles played by automobile manufacturers, chemical manufacturers, and agriculture companies in greenhouse gas emissions and climate policy obstruction
	Extent of coordination between various industries in opposing greenhouse gas emissions reductions
	Influence of corporations over scientific communities (e.g., the IPCC), research directions, and public presentation and framing of climate issues
	Comprehensive historical narratives of corporate strategies, including public relations, lobbying, and investment activities

**Table A2.3: Legal analysis research topics raised by interviewees**

Category	Topic
Doctrinal and comparative analysis	
	Jurisdictions with standing requirements appropriate for approaches based in human rights

	Assessment of responsibility in context of global effects and many contributors to problem
	Countries or jurisdictions with open duties of care that might consider international human rights law
	Potential role of advisory opinion from the International Court of Justice
	Limits and contours of political question doctrine in U.S. in context of climate litigation
	Limits and contours of First Amendment protection in U.S. in context of climate litigation
	Limits and contours of regulatory compliance defense in U.S. in context of climate litigation, including in context of potential defendants' influence over public policy
	Avenues for pursuing injunctive relief in the U.S. in context of climate litigation
	Identifying high-importance legal venues globally in context of climate litigation
	Identifying replicable or scalable legal approaches across countries or jurisdictions
	Standards for scientific evidence in various jurisdictions, including how such standards might differ
	Whether research methods used by key information sources, such as non-profit organizations, are sufficient to be used in various jurisdictions

	Enforcement and monitoring of remedies (e.g., injunctions) in context of climate litigation
	Standards for punitive damages in various jurisdictions in context of climate litigation
	Application of Convention on the Rights of the Child to state and/or corporate obligations in context of climate change
	Doctrine of imminence in the context of climate change, damages, and potential remedies
Legal status of fossil fuels	
	Legal arguments that support notion that new investments in fossil fuels are unlawful
	Legal arguments for inclusion of product (Scope 3) emissions when evaluating responsibility of fossil fuel companies
	Liability of corporate board members for climate impacts connected with industry actions
	Evaluation of patents related to climate change, including those related to adaptation or availability of less dangerous alternatives to fossil fuels
	Liability of power utilities and costs and benefits of moving to non-fossil-fuel feedstocks
	Histories and ongoing activities of state-owned fossil fuel companies and potential avenues for suit

Novel legal approaches	
	Evaluation of transition risk in corporate reports, including lack of transparency to public and investors
	Role of non-party (non-state) stakeholders to the Paris Agreement (e.g., corporations, cities), including need for action from non-parties and destructive role non-parties may play in taking actions counter to the Paris Agreement
	Legal strategies for addressing financial support of fossil fuels (investors, banks, etc.)
	Sustainable development goals as a social contract that should be recognized by courts
	Acceleration of tech transfer to and leapfrogging in developing countries
	Consideration of fat-tailed risks by courts
	How regulation can increase corporate efficiency and how that may be relevant to sought remedies
	Legal strategies for addressing shorter-lived warming pollutants (methane, black carbon, etc.)
	Potential roles of Benefit Corporations in addressing corporate conduct related to climate change
	Potential pathways to settlement in climate litigation and what potential settlements should include

	How doctrine of loss of chance of survival from medical law might apply to irreversible impacts from climate change
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**Table A2.4: Translational research topics raised by interviewees**

Category	Topic
Translational research	
	Tools to help communities document the costs of climate impacts, including tools rigorous enough to support litigation efforts
	Resources for scientists to serve as independent experts in cases, including discussion of legal standards of evidence, certainty, and proof
	Summaries of IPCC reports for litigators and other stakeholders
	Resources for judges on climate science and relevant history, including noting importance of preventive action to avoid damages
	Handbooks for lawyers that guide them through climate science and help identify relevant experts
	Clearinghouse for relevant research and litigation experience, similar to Tobacco Products Liability Project in tobacco litigation
	Imagery and graphics useful for informing climate litigation