Article

Bringing Courts into Global Governance in a Climate-Disrupted World Order

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Climate-driven geophysical and geopolitical shifts are putting increasing pressure on international law and global governance. One window into the challenges and opportunities presented by these ongoing disruptions is provided by a surge of "climate-accountability" cases, which argue that governments and corporations are responsible for addressing climate risks or repairing climate harms. This Article fills a gap in the literature by providing the first theoretical account of the structural role of courts in global governance in these cases and a typology of their functions. The panoramic perspective that I take shows that two extraordinary worldwide shifts are underway: historic applications of many existing, non-climate laws to the facts of our climate-disrupted reality and the emergence of a decentralized yet coherent transnational judicial component of global climate governance, which heretofore had been largely confined to the United Nations Framework Convention on Climate Change regime.

On one hand, the literature on climate cases has yet to provide a theoretical account of their role in global governance structures, instead taking more narrow views by assessing trends, analyzing decisions, developing new arguments, and evaluating the effect of the litigation on governmental and corporate actors. On

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the other hand, the international law literature on courts' roles in international governance has yet to engage with climate cases, which, I argue, have distinctive aspects that can be accounted for only with a new theory.

My theoretical account serves two main purposes. First, it provides a conceptual framework for examining the litigation from a global governance perspective. To do that, I start, in contrast to current writing on the litigation, by focusing courts rather than climate. Drawing on decades of scholarship on international and domestic courts' roles in international law and governance, as well as on international relations and political science, I show that climate litigation has made courts a part of global climate governance and develop both a theory of their governance role—which I call "responsibility-differentiation"—and a typology of its functions. As a result, I build on and provide a bridge between two strands of scholarship—that on courts in international law and governance broadly and that on climate litigation.

Second, I use my theoretical account to offer recommendations for how the litigation should be approached in light of the pathological geopolitical dynamics that have thus far dominated international climate governance. It can—and should—be used to name and help correct, rather than further entrench, the historical injustices of the climate crisis.

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INTRODUCTION

Over a decade ago, the U.N. Intergovernmental Panel on Climate Change (IPCC) reported that "litigation is likely to be used increasingly as countries and citizens become dissatisfied with the pace of international and national decision-making on climate change."[1]

In 2013, six years after that report was published, Yeb Saño, then lead climate negotiator for the Philippines, was in Warsaw, Poland, attending the nineteenth Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC)[2] when Typhoon Haiyan—the deadliest typhoon ever to hit the Philippines[3]—was bearing down on his island. In an impassioned speech to the delegates, he stated:

> The picture in the aftermath is ever so slowly coming into clearer focus. The devastation is colossal. . . .
>
> By failing to meet the objective the Convention, we may have ratified the doom of vulnerable countries [and] have to confront the issue of loss and damage. Loss and damage from climate change is a reality today across the world.[4]

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1. Sujata Gupta & Dennis A. Tirpak, *Policies, Instruments and Co-operative Arrangements*, *in* CLIMATE CHANGE 2007: MITIGATION, CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 745, 793–94 https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg3-chapter13-2.pdf [https://perma.cc/52KA-FTQX].

2. United Nations Framework Convention on Climate Change, *opened for signature* May 9, 1992, S. Treaty Doc. No. 102-38, 1771 U.N.T.S. 107 (entered into force Mar. 21, 1994) [hereinafter UNFCCC].

3. The local name for the devastating storm is Super Typhoon Yolanda. *See Super Typhoon Yolanda*, REPUBLIC OF THE PHIL. DEP'T OF HEALTH, https://doh.gov.ph/Top-Health-Stories/Super-Typhoon-Yolanda [https://perma.cc/XXS7-VDY9]. Over 7,300 people died or went missing. *Death Toll from Typhoon Rai Surges to 375 in Philippines*, FRANCE 24 (Dec. 20, 2021), https://www.france24.com/en/asia-pacific/20211220-death-toll-from-philippines-typhoon-reaches-more-than-200 [https://perma.cc/8V8S-3TZM].

4. *"It's Time to Stop This Madness"—Philippines Plea at UN Climate Talks*, CLIMATE HOME NEWS (Nov. 11, 2013), https://www.climatechangenews.com/2013/11/11/its-time-to-stop-this-madness-philippines-plea-at-un-climate-talks [https://perma.cc/BD4Q-Q754] (reproducing the full transcript of Yeb Saño's speech). The article contains an update posted after his speech stating that "Saño added an unscripted pledge to fast during the conference":

> In solidarity with my countrymen who are struggling to find food back home and with my brother who has not had food for the last three days . . . I will now commence a voluntary fasting for the climate. This

The objective of the UNFCCC that Saño referenced is the "stabilization of greenhouse gas [GHG] concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[5]

Two years after that speech, Saño, now as executive director of Greenpeace Southeast Asia,[6] along with survivors of Typhoon Haiyan and several Filipino human rights groups, filed a petition with the Commission on Human Rights of the Philippines (CHRP) against forty-seven of the highest emitting fossil fuel and cement corporations. They alleged that the companies had violated international and domestic human rights laws by engaging in a systematic disinformation campaign designed to obscure the science demonstrating the catastrophic dangers of fossil fuels and by failing to ensure that their business practices did not harm human rights.[7] As a result, the petitioners alleged that the companies had contributed to massive climate damages such as those suffered by the victims of Super Typhoon Haiyan.[8] On May 6, 2022, after years of extensive investigations, the CHRP issued a landmark report agreeing with the petitioners that the companies had "engaged in willful obfuscation of climate science [to] conceal[] that their products posed significant harms to the environment and the climate system [and to] delay meaningful

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> means I will voluntarily refrain from eating food during this COP until a meaningful outcome is in sight.

Id. At the 27th meeting of the UNFCCC parties in 2022, states initiated a process that will hopefully lead to an effective system for repairing loss and damage, but much work remains to be done. *See* U.N. Framework Convention on Climate Change, *Rep. of the Conf. of the Parties on Its Twenty-Seventh Session*, § VII, U.N. Doc. FCCC/CP/2022/10 (Mar. 17, 2023).

5. UNFCCC, *supra* note 2, art. 2.

6. In his Twitter bio, Saño refers to himself as a "[r]ecovering climate negotiator." Yeb Saño #ClimateJustice (@YebSano), X (formerly TWITTER), https://twitter.com/yebsano?lang=en [https://perma.cc/7XAA-P2NM].

7. Greenpeace Se. Asia & Philippine Rural Reconstruction Movement, *Petition to the Commission on Human Rights of the Philippines Requesting for Investigation of the Responsibility of the Carbon Majors for Human Rights Violations or Threats of Violations Resulting from the Impacts of Climate Change*, at 19–23 (Sept. 22, 2015), https://static1.squarespace.com/static/571d109b04426270152febe0/t/60a54add7e461d4b0932b2e9/1621445342044.pdf [https://perma.cc/4LZZ-H9VT].

8. *See id*. at 15–17.

environmental and climate action."[9] Further, the CHRP determined that "climate change is a human rights issue,"[10] and that "all acts to obfuscate climate science and delay, derail, or obstruct this transition may be bases for liability."[11]

Cases such as those filed by Saño have become a "global phenomenon," expanding across jurisdictions and venues, and invoking international and domestic laws.[12] The IPCC was thus right about the increase in litigation in its 2007 report; indeed, in its most recent report, the IPCC devoted several paragraphs to the litigation.[13] However, as the Philippines case demonstrates, dissatisfaction with the "pace" of decision-making fails to capture the primary driver of the litigation: countries and citizens have become alarmed by the governmental and corporate decisions that *have been made* in the face of science, conclusively establishing the necessary responses to the increasingly catastrophic impacts of the climate crisis—notwithstanding the existence of the UNFCCC regime, which could have provided the venue for taking the actions necessary to avert myriad devastating climate harms suffered all over the world, and particularly in the Philippines and other nations of the Global South.[14]

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9. COMM'N ON HUM. RTS. OF THE PHIL., NATIONAL INQUIRY ON CLIMATE CHANGE REPORT 98 (2022) [hereinafter CHRP REPORT], https://chr.gov.ph/wp-content/uploads/2022/12/CHRP_National-Inquiry-on-Climate-Change-Report.pdf [https://perma.cc/YE5Z-4A3X].

10. *Id.* at 2.

11. *Id.* at 103.

12. Joana Setzer & Catherine Higham, *Climate Litigation*, *in* CLIMATE LITIGATION AND CENTRAL BANKS 5, 7–8 (Eur. Cent. Bank Legal Working Paper Series Dec. 2021) [hereinafter Setzer & Higham, *Climate Litigation*], https://www.ecb.europa.eu/pub/pdf/scplps/ecb.lwp21~f7a250787a.en.pdf?376b1fb42ce58bcc2de25c8e542e54b6 [https://perma.cc/H2BD-RKGP] ("Climate change litigation has now been brought in over 39 countries and before 10 international or regional courts, tribunals, and quasi-judicial bodies.").

13. *See* Navroz K. Dubash & Catherine Mitchell, *National and Sub-National Policies and Institutions*, *in* CLIMATE CHANGE 2022: MITIGATION OF CLIMATE CHANGE 1355, 1375–77 (2022) (discussing increase in climate change litigation and trends concerning claims and parties involved); *see also* Anthony Patt & Lavanya Rajamani, *International Cooperation*, *in* CLIMATE CHANGE 2022, *supra*, at 1451, 1503–04, 1516 (discussing relationships between climate change mitigation, human rights, sustainable development, and international cooperation).

14. *See, e.g.*, CLIMATE HOME NEWS, *supra* note 4 (arguing that "[t]he science has given us a picture that has become much more in focus" and that "[w]e find ourselves at a critical juncture" where continued governmental inaction

Indeed, it is in the wake of the entry into force of the current principal international climate treaty—the Paris Agreement[15]—that case filings have mounted. After over three decades of international climate negotiations, it has become clear that climate-related issues in legal challenges and judicial opinions are becoming more commonplace rather than exceptional. Yet, as explained below, unlike the cases that ushered in the study of international and domestic courts' roles in international law and global governance, the source of liability invoked in the cases is not a treaty directly addressing the problem. Rather than specifying parties' substantive obligations, as did the human rights and other types of treaties involved in the cases studied in that body of literature, the principal obligation of the Paris Agreement requires parties to submit "unilateral pledges" of their intended contributions to fulfilling the treaty's global objectives.[16]

Instead, communities, individuals, and governments are asking international and domestic courts and quasi-judicial bodies such as the CHRP to apply a variety of non-UNFCCC international and domestic laws to the reality of our climate-disrupted world—laws that courts have largely not yet applied to climate-related issues.[17] These laws include human rights, constitutional protections, tort law, statutory consumer and environmental protections, international customary law, the law of the sea, international criminal law, and the U.N. Charter.[18] As a result, these cases involve many critical legal issues with significant implications for international law and global govern-

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will have devastating consequences, especially for the countries most vulnerable to climate events).

15. Paris Agreement, *opened for signature* Dec. 12, 2015, T.I.A.S. No. 16-1104, 3156 U.N.T.S. 79 (entered into force Nov. 4, 2016).

16. *See* Melissa J. Durkee, *The Pledging World Order*, 48 YALE J. INT'L L. 1, 10–12 (2023) (characterizing the Paris Agreement as a paradigmatic example of a "treaty design choice" involving the use of pledging as an "ordering device").

17. *See, e.g.*, Greenpeace Se. Asia & Philippine Rural Reconstruction Movement, *supra* note 7, at 29–31 (requesting investigation into whether largest corporate and governmental producers of greenhouse gas emissions have violated the human rights of Filipinos).

18. *See, e.g.*, *id.* at 29 (emphasizing potential human rights violations on the part of major producers of emissions); *cf.* Karen C. Sokol, *Seeking (Some) Climate Justice in State Tort Law*, 95 WASH. L. REV. 1383, 1432–34 (2020) [hereinafter Sokol, *Seeking Climate Justice*] (arguing that state tort law claims should play a larger role in future climate change litigation).

ance, including those related to state sovereignty, self-determination, state and corporate responsibility, extraterritoriality, and the nature of legal obligations related to individual and group rights, future generations, the environment, and ecosystems.

This wave of climate cases has received significant scholarly attention,[19] including assessments of trends,[20] analyses of claims and opinions,[21] evaluations of the impact of decisions on climate

19. For an overview of the literature on climate litigation, see Joana Setzer & Lisa C. Vanhala, *Climate Change Litigation: A Review of Research on Courts & Litigants in Climate Governance*, 10 WIRES CLIMATE CHANGE (2019), http://eprints.lse.ac.uk/100257/1/Setzer_Vanhala2019_EarlyView.pdf [https://perma.cc/Z6ZC-KXGF].

20. *See, e.g.*, Joana Setzer & Catherine Higham, *Global Trends in Climate Change Litigation: 2021 Snapshot*, THE GRANTHAM RSCH. INST. ON CLIMATE CHANGE & THE ENV'T 5 (2021) [hereinafter Setzer & Higham, *Global Trends*], https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/07/Global-trends-in-climate-change-litigation_2021-snapshot.pdf [https://perma.cc/985A-TGSL] (reviewing "key global developments in climate litigation over the period May 2020 to May 2021"); *see also* Jacqueline Peel & Jolene Lin, *Transnational Climate Litigation: The Contribution of the Global South*, 113 AM. J. INT'L L. 679, 681–82 (2019) (highlighting "the key part that domestic (climate) litigation is playing in advancing the goals of . . . the Paris Agreement" and "comprehensive[ly] evaluat[ing] cases . . . across Asia, the Pacific, Africa, and Latin America" to show the significance of climate litigation in the Global South that is missed because of the tendency of scholars to focus on Global North cases).

21. *See, e.g.*, Margaretha Wewerinke & Melina Antoniadis, *Vessel for Drowning Persons?*, 3 Y.B. INT'L DISASTER L. 238, 240 (2022) (discussing human rights claims based on climate displacement, and concluding that such "litigation . . . provides the opportunity for . . . human rights [complaint] mechanisms to clarify the scope of protection available under international human rights law, which in turn can affect State practice as well as decisions of international, regional and domestic courts and quasi-judicial bodies"); *see also* Emily Barritt & Boitumelo Sediti, *The Symbolic Value of* Leghari v. Federation of Pakistan*: Climate Change Adjudication in the Global South*, 30 KING'S L.J. 203 (2019) (explaining the court's decision in a landmark climate case in Pakistan and its larger significance for the Global South).

"action" or "governance,"[22] and proposals for arguments.[23] But I believe that the sum of these cases is bigger than its parts. In this Article, I step back and analyze the litigation from a structural perspective to provide the first theoretical account of the role of international and domestic courts in global governance in climate litigation and a typology of its functions. This panoramic perspective shows that two extraordinary worldwide shifts are underway: one in the understandings of the meanings of myriad international and domestic laws, and the other in the role of courts in global governance. You cannot see this when you are in the midst of it, but stepping away provides a remarkable view.

In contrast to current scholarship on the litigation, my analysis of the litigation begins not with climate but with courts. Specifically, I draw and build on scholarship about the roles of courts in international law and governance, political science, and international relations. This literature, I maintain, documents the emergence of a global judicial phenomenon that has served as a

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22. This was the primary focus of the climate-litigation literature relied on by the IPCC in its most recent assessment report. *See* Dubash & Mitchell, *supra* note 13, at 1358, 1375–77 (concluding, based on the current scholarship, that "[c]limate litigation is growing and can affect the outcome and ambition of climate governance"; that "[c]limate litigation is an attempt to control, order or influence the behaviour of others in relation to climate governance"; and that "[t]he outcomes of climate litigation can affect the stringency and ambitiousness of climate governance"); *see also* Setzer & Vanhala, *supra* note 19, at 7–8 (describing the literature on climate litigation as largely discussing the litigation as a reaction to the absence of climate legislation or as a potential impetus for international or national regulation).

23. *See, e.g.*, Mary Christina Wood, *The Planet on the Docket: Atmospheric Trust Litigation to Protect Earth's Climate System and Habitability*, 9 FLA. A&M U. L. REV. 259, 260 (2014) ("I will describe a global legal campaign known as Atmospheric Trust Litigation that invokes the public trust doctrine to hold federal and state governments in the United States responsible for reducing this carbon pollution."); *see also* Michael Faure & Marjan Peeters, *Introduction* to CLIMATE CHANGE LIABILITY 5 (Michael Faure & Marjan Peeters eds., 2011) (compiling essays addressing both "the question to what extent victims of climate change could use the liability system to obtain compensation for damages resulting from climate change" and "the question to what extent civil liability and the courts in general may be useful to force potential polluters (or governmental authorities) to take measures to reduce (the effects of) climate change"); *cf.* Sokol, *Seeking Climate Justice*, *supra* note 18, at 1428–32 (arguing that a proper interpretation of U.S. Supreme Court case law in light of federalism principles defeats the principal defense asserted by fossil fuel companies against various cases brought by U.S. localities alleging that the companies' climate disinformation campaign violates state tort and statutory laws).

platform for climate litigation, and thus understanding it offers important insight into the role of courts in the litigation.

I then bring climate into the picture. Relying on judicial decisions as well as litigants' identity, arguments, and evidence, I show that the litigation collectively forms a transnational architecture that has added a judicial component to climate governance, one which is in the process of "adapting" existing laws—and thereby governmental and corporate legal responsibility—to the reality of our climate-disrupted world. On the one hand, the literature on climate cases has yet to provide a theoretical account of their impact on global governance structures. On the other hand, the literature on courts' roles in international law and governance has yet to engage with climate cases, which, I argue, have distinctive aspects that require a new theory of the role of courts in global governance. This Article thus contributes to two bodies of literature and serves as a bridge between them by providing the first theoretical account of the structural role of courts in global governance in climate-accountability cases.

This Article proceeds in four Parts. Beginning by setting climate aside, Part I analyzes scholarship on the roles of international and domestic courts in international law and governance and highlights the important, underrecognized perspective that it provides for understanding the phenomenon of climate-accountability litigation. Part II brings climate into the picture by turning to the appearance of climate cases on the scene. In addition to defining the cases that are the focus of my inquiry, I establish that these cases are a unique phenomenon amenable to theoretical analysis by identifying their common features. As I explain, these features are a result of the unique global and planetary nature of the climate problem and of the Paris Agreement's structure. These features make the cases distinct from those that have to date been the focus of scholarship on the roles of courts in international law and governance.

Part III then builds on that scholarship to show that climate litigation is driving an expansion of global climate governance through the addition of a transnational judicial component. This component, I argue, is in the process of undertaking what has thus far been elusive within the UNFCCC regime: differentiating legal responsibility. Part IV argues that, although by no means a sufficient response to climate breakdown—or indeed to any other problem plaguing the international community—a transnational judicial architecture is an essential part of global

climate governance. Part IV then sets out a typology of this architecture's functions and makes several recommendations for how it can best serve them. The conclusion summarizes the foregoing to highlight the significance of courts now and going forward in a climate-disrupted world order in which, as Saño put it a decade ago, "[l]oss and damage . . . is a reality . . . ."[24]

I. THEORIZING THE ROLE OF COURTS IN INTERNATIONAL LAW AND GOVERNANCE

To provide a theoretical account of courts' role in climate-accountability litigation, I begin in Section A with an explication of a very rich body of scholarship on the import of the marked increases of international and domestic judicial activity in international law and governance that have taken place in the post-World War II era. For the purposes of this Article, it is sufficient to provide a broad overview of the evolution of the understanding of the roles of international and domestic judicial institutions in international law and governance and what that evolution reflects about the nature of the global judicial structure that has developed over time, and that will inevitably further develop as courts all over the world respond to climate-accountability claims.

Literature on courts and international law began significantly increasing in the 1990s and has continued to accelerate since, forming what is now a large area of scholarly activity.[25] This increase reflects the fact that this time period has seen increases in the number of international courts[26] as well as in the

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24. *See* CLIMATE HOME NEWS, *supra* note 4.

25. *See* Anthea Roberts, *Comparative International Law? The Role of National Courts in Creating and Enforcing International Law*, 60 INT'L & COMPAR. L.Q. 57, 57–59 (2011) (providing overview of scholarship on the application of international law by domestic courts with multiple citations to publications from the 1990s to the early 2000s); *see also* David D. Caron, *Towards a Political Theory of International Courts and Tribunals*, 24 BERKELEY J. INT'L L. 401, 401 (2006) [hereinafter Caron, *Towards a Political Theory*] ("Over the past decade, theoretical explanations for various aspects of international courts and tribunals have been offered. . . . [S]cholarly attention to a theoretical framework has progressed dramatically over this period . . . .").

26. *See, e.g.*, Cesare P.R. Romano, *Can You Hear Me Now? The Case for Extending the International Judicial Network*, 10 CHI. J. INT'L L. 233, 239 (2009) [hereinafter Romano, *International Judicial Network*] ("It is only during the second half of the twentieth century that institutions between and above states'

application of international and transnational law by domestic courts.[27] This body of scholarship can be conceptually organized in various ways, but broadly it tends to fall in one or more of three categories: one focusing on international courts, another on domestic courts, and a third on the interaction between and among both levels of courts. Sections A, B, and C describe these categories, and Section D draws out the significance of all three categories considered collectively.

A. INTERNATIONAL COURTS

At the international level, the increase in the number and activity of permanent courts and quasi-judicial bodies with prospective, compulsory jurisdiction, many of which have competence to hear individual as well as state claims and to issue advisory opinions, has made clear that courts' role in international law and governance is no longer confined to voluntary "dispute settlers" between states.[28] These "new-style" international

legal orders were created to dispense justice."); *see also* David D. Caron, *Framing Political Theory of International Courts and Tribunals: Reflections at the Centennial*, 100 AM. SOC'Y INT'L L. PROC. 55, 55 (2006) [hereinafter Caron, *Framing Political Theory*] ("Today, arbitrators, foreign ministry officials, scholars, secretariats and non governmental organizations at locations around the world . . . . are considering creating a new court or tribunal, changing the rules of the game for one that exists, or arguing a particular case before another. They are doing this more than perhaps at any other time in history. It should not be surprising therefore that the scholarly literature of the past decade . . . has not only been about cases and procedure, but also has attempted to understand this growth in courts and tribunals, to explain their variety, to assess their effectiveness and to think in systemic terms about their interrelationships.").

27. *See* Roberts, *supra* note 25, at 57 (noting that a foreword to a 2005 book focused on international law in domestic courts stated that, "[t]o an extent almost unimaginable even thirty years ago, national courts in this and other countries are called upon to consider and resolve issues turning on the correct understanding and application of international law, not on an occasional basis, now and then, but routinely, and often in cases of great importance").

28. *See* Romano, *International Judicial Network*, *supra* note 26, at 235–36 (arguing that international courts' impact extends beyond resolving individual disputes); *see also* Caron, *Towards a Political Theory*, *supra* note 25, at 405–06 (arguing international courts' functions also can be understood in terms of international relations and political theory). As Caron noted in a 2006 lecture,

> [a]t the start of the last century . . . . [i]f one used the phrase "international court and tribunals," then everyone was in agreement that that meant interstate ad hoc arbitration, arbitration under the auspices of the Permanent Court of Arbitration, or, a few decades later, the Permanent Court of International Justice.

Caron, *Framing Political Theory*, *supra* note 26, at 55.

courts have mandates to serve not only the states that created them, but also the international community more broadly by promoting the integrity of agreements and other international laws that they implement and thereby advancing the international rule of law.[29] Indeed, David Caron argued in the early 2000s that, given the more institutional character of modern international courts in international governance, scholars should examine them through not just the lens of international relations but also that of political science.[30]

Scholars have increasingly done just that, recognizing that many international judicial fora are no longer one-off venues for disputes between two sovereign powers. Rather, they are sites for various state and non-state actors to argue for and seek both legal interpretations independent of those of a given state and remedies for legal violations.[31] Several scholars have developed concepts of international judicial power distinct from that held by states that did not exist in the era dominated by "old-style" dispute-settler courts.[32]

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29. *See* KAREN J. ALTER, THE NEW TERRAIN OF INTERNATIONAL LAW: COURTS, POLITICS, RIGHTS 6 (2014) (ebook) ("[T]his shift from 'old' to 'new' style combines with the broader range of roles states have delegated to [international courts] to generate a paradigmatic shift from a contract-based to a rule of law conceptualization of the meaning of international law.").

30. Caron, *Towards a Political Theory*, *supra* note 25, at 405 ("[I]t is also instructive to refer to theories in the U.S. academic political science community regarding courts generally.").

31. *See, e.g.*, ALTER, *supra* note 29, at 9 ("Delegating interpretive authority to [international courts] is politically significant because it introduces an independent outside actor with the legal authority to say what international law means."); *see also* Romano, *International Judicial Network*, *supra* note 26, at 236 (arguing that one important role of international courts is to "serve as 'agents of justice,' whose impact transcends the given parties to a case"); *id.* at 243–47 (cataloguing the international judicial institutions with the ability to provide "retributive" and "corrective" justice, including the International Criminal Court and regional human rights commissions and courts); *see also* Caron, *Towards a Political Theory*, *supra* note 25, at 411 (advancing a theory of international courts as providing "bounded strategic space" whose procedural rules are "the legal expression of the political efforts of [certain] groups to control the influence of each other on the operation of the court or tribunal").

32. *See, e.g.*, Daniel Abebe & Tom Ginsburg, *The Dejudicialization of International Politics?*, 63 INT'L STUD. Q. 521, 521 (2019) ("The judicialization of international politics—that is, the expansion of judicial involvement in international governance—is proceeding apace.").

This international judicial power is one that can be quite effective in governance because of its unique strengths, particularly if understood from a long-term, institutional perspective rather than through a narrow case-by-case lens.[33] Cesare Romano, for example, described international courts as collectively constituting an "emerging 'international judicial network'" that has the potential to "serve[] a community distinct from the ones living within the boundaries of this or that sovereign state" by providing access to judicial remedies to those unable to secure them at the national level.[34] Many scholars have made similar points by highlighting international courts' roles in developing international law and in deterring violations.[35] As Karen Alter has explained, "[i]nternational judges may not be able to call upon centralized tools of coercion to enforce their rulings, but they can often call upon legal and political actors around the

33. As this power is not backed by centralized state coercive mechanisms, it is different from judicial power at the domestic level. But it is a power nonetheless. *Compare* ALTER, *supra* note 29, at 6 n.2 (discussing Eric A. Posner & John C. Yoo, *Judicial Independence in International Tribunals*, 93 CALIF. L. REV. 1, 27–29 (2005)) (arguing that Eric Posner's and John Yoo's critique of modern international courts on the ground that they are less effective than "old-style" voluntary dispute-settlement tribunals is misguided because it "conflat[es] . . . compliance with effectiveness," noting that "effectiveness is different than compliance," as "[e]ffectiveness entails inducing a change from the status quo in the desired direction, even if the result is less than full compliance"), *with* James Thuo Gathii, *Introduction* to THE PERFORMANCE OF AFRICA'S INTERNATIONAL COURTS: USING LITIGATION FOR POLITICAL, LEGAL, AND SOCIAL CHANGE 4 (James Thuo Gathii ed., 2020) ("[C]ompliance and effectiveness do not adequately account for the types of impact of Africa's international courts. This is because there is more utility to Africa's international courts beyond whether or not their decisions have been complied with or the extent to which their decisions encourage states to move in the direction that Africa's international courts nudge them towards." (footnote omitted)).

34. Romano, *International Judicial Network*, *supra* note 26, at 239.

35. *See, e.g.*, Cesare P.R. Romano, *Deciphering the Grammar of the International Jurisprudential Dialogue*, 41 N.Y.U. J. INT'L L. & POL. 755, 764–65 (2009) [hereinafter Romano, *International Jurisprudential Dialogue*] ("*De facto* decisions of international courts are changing the face of international law, and increasingly define the contours of the legal obligations that states face—in certain cases all states, including those that are not subject to the court's jurisdiction, and even those that do not exist yet. In sum, an 'international common law' that is able to evolve without formal agreement between states is emerging."); *cf.* ALTER, *supra* note 29, at 10 ("Once [international courts] exist, they become opportunity structures that litigants can activate to promote greater respect for international law.").

world to pressure governments to respect international law as defined by [international court] rulings."[36]

B. DOMESTIC COURTS

At the domestic level, many scholars highlight the tension between courts' role as a part of state governments that frequently shows great deference to the executive in matters of international affairs and their role in enforcing the state's international legal obligations.[37] After all, international courts serve as fora of "last resort."[38] Ideally, domestic courts in every country

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36. ALTER, *supra* note 29, at 10.

37. *See, e.g.*, Filiz Kahraman et al., *Domestic Courts, Transnational Law, and International Order*, 26 EUR. J. INT'L RELS. 184, 188 (2020) ("[T]he most common analysis involving domestic courts in [international relations] looks at how they enforce international law."); Antonios Tzanakopoulos, *Domestic Courts in International Law: The International Judicial Function of National Courts*, 34 LOY. L.A. INT'L & COMPAR. L. REV. 133, 152 (2011) ("Admittedly, international law imposes international obligations on the unitary State, of which courts are merely organs. But international law assigns to domestic courts a position more important to that of the Executive or the Legislature in the implementation of the State's international obligations. It establishes them as the 'natural judges' of international law, at one and the same time the point of first contact and the last line of defense, the last opportunity for the State to comply with its international obligations."); Christopher A. Whytock, *Domestic Courts and Global Governance*, 84 TUL. L. REV. 67, 107 (2009) [hereinafter Whytock, *Domestic Courts and Global Governance*] ("Domestic courts contribute to enforcement when they determine whether conduct violates the law."); Richard A. Falk, *Toward a Theory of the Participation of Domestic Courts in the International Legal Order: A Critique of* Banque Nacional de Cuba v. Sabbatino, 16 RUTGERS L. REV. 1, 7 (1961) ("Unfortunately, judicial deference to national policy in international affairs has tended to impair the objectivity of legal results in the area of international law. It is important to demonstrate that domestic courts must act as agents of the international order as well as constituent institutions of the national order."); *cf.* Oona A. Hathaway, *Between Power and Principle: An Integrated Theory of International Law*, 72 U. CHI. L. REV. 469, 514 (2005) ("*Domestic enforcement is essential to compliance with much of international law*."). Of course, "neither domestic nor international courts can enforce international law . . . by themselves," but "they can contribute to enforcement by applying international law, finding conduct in violation of international law, then ordering compliance or requesting enforcement measures by other bodies." Christopher A. Whytock, *From International Law and International Relations to Law and World Politics*, *in* OXFORD RESEARCH ENCYCLOPEDIA OF POLITICS 1, 12 (2018) [hereinafter Whytock, *Law and World Politics*], https://oxfordre.com/politics/display/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-94?print=pdf [https://perma.cc/JGW8-PWU4].

38. Romano, *International Judicial Network*, *supra* note 26, at 239 (noting that national courts remain the primary organ for dispensing justice).

would provide adequate remedies for violations of international law. Importantly, domestic courts exercise their enforcement role not only in cases in which the executive or state officials are defendants but also in those brought against corporations, which are not subject to the jurisdiction of international courts. In such cases, domestic courts can play a particularly important role in enforcing laws applicable to private actors within national systems that are necessary for states to comply with many of their most important international legal obligations, including those related to human rights, labor, and environmental protections.[39]

In applying international law, domestic courts also function as law interpreters and, consequently, law developers.[40] They interpret and develop domestic laws—both public and as private—that have transnational and global impacts.[41] Both of these potential functions of domestic courts, that is, as enforcers and as developers of international law or domestic law of transnational or global significance, have led many scholars to develop theories of the role of domestic courts in international law and governance separate from the governments of which they are a part—specifically, a distinctive and consequential "international" or "global governance" *judicial* function.[42]

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39. *Cf.* Tzanakopoulos, *supra* note 37, at 138–39 (noting that many international laws require a state to "prohibit, regulate, or permit certain conduct by natural persons and legal entities within its jurisdiction").

40. *See* Roberts, *supra* note 25, at 63 ("[Domestic] [j]udicial decisions play an extremely important role in the identification and formation of international law."); *see also* Tzanakopoulos, *supra* note 37, at 135 ("Since every norm may be able to sustain a number of possible interpretations, its application by the judge in the case before her in effect leads to the authoritative selection of one of the possible interpretations, making law for the specific case. As such, decisions of courts are not simply declaratory of the law, but rather, on some micro-level at the very least, constitutive of it.").

41. *See* Whytock, *Domestic Courts and Global Governance*, *supra* note 37, at 91 (explicating how domestic courts serve a "substantive global governance function" through "determining rights and obligations of transnational actors with respect to each other and with respect to economic and political resources").

42. *See* Whytock, *Law and World Politics*, *supra* note 37, at 30 (noting that political scientists in recent years have started examining the "direct role [of domestic courts] in international relations, including international conflict and foreign policy"); *see also* Tzanakopoulos, *supra* note 37, at 150–54 (arguing that domestic courts serve an "international judicial function" in the international system as "the natural judges of international law"); *cf.* Osnat Grady Schwartz, *Changing the Rules of the (International) Game: How International Law Is Turning National Courts into International Political Actors*, 24 WASH. INT'L L.J.

C. TRANSJUDICIAL NEXUSES

A third category of international law scholarship on courts examines the increasing transnational interactions between domestic and international courts and litigants, and the implications both for the development of international law and for the nature of global governance. This category can be understood as part of the broader body of scholarship on "transnational law," a term coined by Philip Jessup in 1956 to capture the law resulting from the increased permeability of international and domestic law.[43] Harold Koh later explicated the *way* in which transnational law is made and enforced, which he called the "transnational legal process"—that is, "the theory and practice of how public and private actors . . . interact in a variety of public and private, domestic and international fora to make, interpret, enforce, and ultimately, internalize rules of transnational law."[44] Although Koh's principal focus was on developing a causal account of states' compliance with international law,[45] his explication of the transnational legal process features courts playing a prominent role as one of the key fora for law interpretation, development, enforcement, and potentially domestic internalization of legal norms.[46] The significance of international and domestic courts is recognized by the literature discussed in the two previous Sections, but this third strand of scholarship weaves in what I call "transnational judicial nexuses" across and between domestic and international judicial fora.

99, 100–02 (2015) (characterizing previous scholarship applying international-relations theory to national courts as presenting "the ideal roles and actual functions of national courts and judges in the international sphere" in terms of "three main models" and arguing for an "international political actor model").

43. *See* PHILIP C. JESSUP, TRANSNATIONAL LAW 2 (1956) (defining transnational law as "all law which regulates actions or events that transcend national frontiers").

44. Harold Hongju Koh, *Transnational Legal Process*, 75 NEB. L. REV. 181, 183–84 (1996).

45. *See* Harold Hongju Koh, *Why Do Nations Obey International Law?*, 106 YALE L.J. 2599, 2634 (1997) ("A complete answer [to the question of why nations obey international law] must . . . account for the importance of *interaction* within the transnational legal process, *interpretation* of international norms, and domestic *internalization* of those norms as determinants . . . .").

46. *See id.* at 2658 ("[P]olitical leaders [cannot] sensibly make foreign policy in a world bounded by global rules without understanding how legislative, *judicial*, and executive branches can and should incorporate international legal rules into their decisionmaking." (emphasis added)).

As decisions with international legal significance at the international and domestic levels continued to proliferate in the decades after the end of World War II, scholars noticed that courts increasingly looked across jurisdictional borders for insight into how other courts dealt with similar issues. This phenomenon, in turn, impacted the development of international and transnational law and the judicial role in global governance more broadly. In an influential 1994 article, Anne-Marie Slaughter identified various forms of what she termed "transjudicial communication," including vertical communication—between supranational and domestic courts—and horizontal communication—between domestic courts or between supranational courts of the same level (regional or international).[47] Although the incorporation of relevant decisions into legal arguments is in many ways rather unremarkable, Slaughter suggested that, in doing so transnationally, courts were evincing "the implicit conception of a common judicial enterprise among courts in a particular region or even world-wide, a mutual recognition of one another as similarly situated institutions performing similar functions under broadly similar rules."[48] Other scholars have since examined how these transjudicial nexuses allow for an iterative jurisprudential process that can strengthen the international governance roles of courts, including developing and enforcing the law,

47. Anne-Marie Slaughter, *A Typology of Transjudicial Communication*, 29 U. RICH. L. REV. 99, 103–11 (1994) (defining vertical and horizontal communications).

48. *Id.* at 122.

as well as promoting the rule of law,[49] even if they do not always do so.[50]

D. BRINGING COURTS TOGETHER AS PART OF GLOBAL GOVERNANCE

While scholars tend to focus primarily on one of these three categories, there has been an increasing amount of overlap over time[51] as well as greater complexity of analyses.[52] This appears to have been driven by the increase in judicial encounters with

49. *See, e.g.*, Jorge Contesse, *Human Rights as Transnational Law*, 116 AM. J. INT'L L. UNBOUND 313, 313, 315–17 (2022) ("[A]nalyz[ing] the way in which Latin America has articulated transnational human rights law" through interactions between the Inter-American Court of Human Rights and domestic courts interpreting constitutional law); Eduardo Ferrer Mac-Gregor, *What Do We Mean When We Talk About Judicial Dialogue?: Reflections of a Judge of the Inter-American Court of Human Rights*, 30 HARV. HUM. RTS. J. 89, 90 (2017) (explicating how judicial dialogue between the Inter-American Court of Human Rights, the domestic courts of the parties to the American Convention on Human Rights, and other international courts "has generated a rich jurisprudence that maintains a balance between global jurisprudential developments and the unique legal characteristics of the Latin American and Caribbean states"); Melissa A. Waters, *The Future of Transnational Judicial Dialogue*, 104 AM. SOC'Y INT'L L. PROC. 465, 465 (2010) ("Transnational judicial dialogue has had a significant impact on the work of domestic courts, enabling and empowering those courts to play a role in shaping international human rights law."); Slaughter, *supra* note 47, at 137 ("Many [judicial] institutions are bound . . . by . . . a common commitment to the rule of law. . . . The meshing of that commitment, through increasingly direct interaction, is more likely to establish an international rule of law than a single international court.").

50. *See, e.g.*, Contesse, *supra* note 49, at 316–17 (cautioning that the Inter-American Court of Human Rights "risks weakening [its] authority" and undermining democratic values if it positions itself as a "regional constitutional court"); Amjad Mahmood Khan, *Misuse and Abuse of Legal Argument by Analogy in Transjudicial Communication: The Case of* Zaheeruddin v. State, 10 RICH. J. GLOB. L. & BUS. 497, 506–07 (2011) (arguing that the use of "legal argument by analogy in the transjudicial context" is often deleterious).

51. *See, e.g.*, Romano, *International Judicial Network*, *supra* note 26, at 248–50, 262–63 (discussing the role of domestic courts in ensuring access to remedies for violations of international law, and their benefits and disadvantages compared to international courts).

52. *See generally* Kahraman, *supra* note 37 (drawing on transnational legal scholarship to provide an account of the role of domestic courts in the international legal order and examining the implications of that account for international-relations theory).

international law at both the international and domestic levels,[53] coupled with courts' increased transnational interaction in an era of increased globalization.[54] There has been a parallel, overlapping shift from viewing courts as individually contributing to international law and governance in the exercise of their various roles to viewing courts as collectively forming part of a dynamic, supranational judicial structure that is *part* of transnational or global governance, albeit a loose, informal, and fluctuating one—in the words of Romano, a "network" rather than a "system."[55]

Although a strong version of this vision certainly has a normative component,[56] there is also a significant descriptive component. The scholarship on courts and international law and governance has documented clear increases (1) in the numbers of modern international courts with a degree of independence from states that allows them to serve and impact communities much broader than the parties to a given dispute; (2) in domestic courts' encounters with international law and issues of global significance; and (3) in judicial willingness to consider the deci-

53. *See, e.g.*, Tzanakopoulos, *supra* note 37, at 133 ("Globalization has augmented the permeability of domestic legal orders, while at the same time it has led to a considerable increase in international regulation. It was only natural then that domestic courts would be faced ever more frequently with having to apply rules promulgated at the international level."); *see also* Romano, *International Jurisprudential Dialogue*, *supra* note 35, at 764–65 ("The number, pace, and impact of international judicial decisions has [sic] exponentially increased.").

54. *See, e.g.*, Harold Hongju Koh, *Why Transnational Law Matters*, 24 PA. ST. INT'L L. REV. 745, 745 (2006) ("Transnational law represents a hybrid of domestic and international law that has assumed increasing significance in our lives.").

55. Romano, *International Judicial Network*, *supra* note 26, at 239; *see also* Whytock, *Domestic Courts and Global Governance*, *supra* note 37, at 97 ("[T]he global governance functions of domestic courts are important not only because of their impact on litigants, but also—and perhaps even more importantly—because of their influence beyond borders and beyond the parties to particular lawsuits.").

56. *See, e.g.*, Mark Toufayan, *Identity, Effectiveness, and Newness in Transjudicialism's Coming of Age*, 31 MICH. J. INT'L L. 307, 316–17 ("Anne-Marie Slaughter has sought over the years to construct a distinctive liberal theory of international law which complements liberal international relations theory, in response to the realist challenge, and through a focus on the role of adjudication by domestic courts in establishing an international rule of law.").

sions of other jurisdictions confronting similar issues, particularly those with global implications such as the nature of human rights obligations in light of evolving world conditions.[57]

By the time that climate cases really began gaining momentum in the wake of the Paris Agreement, this phenomenon of international and transnational judicialization—which necessarily involves not just judges and courts but also litigants and the communities impacted by rulings—had been at work and growing for decades.[58] And with it there has developed a sizeable body of scholarship calling attention to its import and creating heuristic tools for critically examining and engaging with it.[59] Both the phenomenon and the scholarly accounts of it almost certainly allowed for this momentum, and thus understanding them provides important insight into the expansion and nature of climate litigation.

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57. *See, e.g.*, Slaughter, *supra* note 47, at 99–100, 114, 120–21 (citing examples of "transjudicial communication" on human rights issues); Mac-Gregor, *supra* note 49 (discussing transjudicial dialogue between the Inter-American Court of Human Rights and the European Court of Human Rights and the dialogue between the Inter-American Court and the courts of the state's parties to the American Convention on Human Rights). *But cf.* Toufayan, *supra* note 56, at 319–20, 331 (critiquing transjudicial scholars' analysis of judicialization of human rights norms as making a claim to universal applicability even though "[it] rests on an explicit Eurocentric selection bias" because of the focus on the European court decisions as examples, and stating that the idea of "a global community of law may be nothing more than a neo-colonial construct erected by overzealous Western judicial and academic missionaries that serves to antagonize cultural agnostics by simply replicating the inequalities, distributions, and exclusions already experienced in globalized 'free' markets").

58. *See* Slaughter, *supra* note 47, at 99–101 (discussing examples of transnational judicial communication preceding the article's 1994 publication); *see also* Koh, *supra* note 54, at 747–48 (noting that transnational law "increasingly influences law and policies" and providing examples of transnational judicialization and international influence within the United States judiciary prior to 2006). That does not necessarily mean, however, that transnational judicialization cannot contract as well as expand. *See* Abebe & Ginsburg, *supra* note 32, at 524 ("[W]e do not observe . . . in the [international or] domestic sphere, an endless expansion of the role of courts. Judicialization can ebb and flow, and we perhaps should speak of degrees of judicialization and dejudicialization, relative to some baseline.").

59. *See* Roberts, *supra* note 25 (discussing how academics, practitioners, and court systems engage with international and transnational judicialization); *see also* Waters, *supra* note 49 (discussing scholarship trends within transnational legal studies and situating the article's relationship within the transnational studies field).

My account of the litigation's role in global governance draws on the insights from this body of scholarship. As I show in Part II, however, the climate-accountability cases are distinctive in important ways from the cases studied by these scholars. Thus, courts' role in global climate governance in climate-accountability cases not only requires a distinctive theory, but also will likely lead to important developments in the roles of international and domestic courts in global governance more broadly. In this sense, my theory contributes not only to scholarship on climate litigation, but also to that on courts and international law and governance, and thereby serves as a bridge between the two strands of scholarship.

II. CLIMATE-ACCOUNTABILITY LITIGATION AND ITS SIGNIFICANCE FOR COURTS' ROLE IN GLOBAL GOVERNANCE

The climate-accountability cases that are the focus of this Article vary in jurisdiction, sources of law, and identity of litigants, but they are amenable to theoretical inquiry collectively because they share three elements. First, the cases claim that the defendant bears legal responsibility for addressing threatened or incurred climate harms. Second, if they reference the UNFCCC or the Paris Agreement (as many do), it does not serve as the source of liability, but rather serves as interpretive support in arguments for the applicability of non-UNFCCC laws that are the source of liability. Finally, they all rely on IPCC reports or other sources of climate science as evidence.

Section A provides an overview of the litigation and discusses some notable case examples to illustrate the type of cases that fall within this definition. Section B then explains the key similarities and differences between climate-accountability cases and those that are studied in the international law scholarship on courts discussed in Part I.

A. THE EVOLUTION AND CURRENT LANDSCAPE

Although plaintiffs filed some important climate-accountability cases falling within the above definition before the negotiations on the Paris Agreement (Paris or Agreement) began,[60] the

60. A number were filed in the United States. *See* Massachusetts v. EPA, 549 U.S. 497, 510, 528–29, 534–35 (2007) (upholding a challenge to the U.S. Environmental Protection Agency's denial of a petition filed in 1999 to regulate greenhouse gases from mobile sources under the Clean Air Act); Connecticut v. Am. Elec. Power, 406 F. Supp. 2d 265, 267–68 (S.D.N.Y. 2005), *vacated and remanded*, 582 F.3d 309 (2d Cir. 2009), *rev'd*, 564 U.S. 410 (2011) (alleging major electric utility companies were liable to several U.S. states, New York City, and non-governmental organizations under federal common law public nuisance doctrine for the contribution of the companies' carbon dioxide emissions to climate disruption, and seeking an injunction to decrease their carbon dioxide emissions); Native Vill. of Kivalina v. ExxonMobil Corp., 663 F. Supp. 2d 863, 868 (N.D. Cal. 2009), *aff'd*, 696 F.3d 849 (9th Cir. 2012) (alleging major fossil fuel companies were liable under federal common law nuisance doctrine for the contribution of their carbon dioxide emissions to climate disruption in the Native Village of Kivalina, and seeking compensation for the costs of forced relocation of the Native Village's Inupiat residents because of the impending loss of their island home due to sea level rise).

Additionally, one case was filed in the Inter-American Commission on Human Rights against the United States. *See* Sheila Watt-Cloutier, *Petition to the Inter-American Commission on Human Rights Seeking Relief from Violations Resulting from Global Warming Caused by Acts and Omissions of the United States*, 5–7 (Dec. 7, 2005), https://climatecasechart.com/wp-content/uploads/non-us-case-documents/2005/20051208_na_petition.pdf [https://perma.cc/757Y-A676] (seeking relief and action on behalf of all Inuit of the Arctic regions of the United States and Canada from human rights violations, alleging they originate from the United States' contributions to climate change).

Most of these cases never reached the merits of the plaintiffs' claims. Only *Massachusetts v. EPA* was litigated on the merits, and the U.S. Supreme Court's landmark decision in favor of the plaintiffs led to the first U.S. federal regulation of greenhouse gases. *See* Sam Evans-Brown, *How Massachusetts v. EPA Forced the U.S. Government to Take On Climate Change*, INSIDE CLIMATE NEWS (June 4, 2020) https://insideclimatenews.org/news/04062020/massachusetts-v-epa-emissions-pollution-climate-change [https://perma.cc/J386-6ATV]. *American Electric Power* and *Kivalina* were dismissed on the ground that the common law claims were "displaced" by the Clean Air Act. *See* Sokol, *Seeking Climate Justice*, *supra* note 18, at 1402–04. And the Inter-American Commission concluded that it could not process the Inuit petition against the United States because it did not provide sufficient information for the Commission to determine whether the United States had committed violations of rights protected by the American Declaration of Human Rights. *See* Letter from Ariel E. Dulitzky, Assistant Exec. Sec'y, Inter-Am. Comm'n on Hum. Rts., to Paul Crowley, Legal Rep., Barrister, and Solic. (Nov. 16, 2006), https://graphics8.nytimes.com/packages/pdf/science/16commissionletter.pdf [https://perma.cc/MC3E-HQPW].

vast majority have been filed in the years afterward.[61] Further, the filings have dramatically increased over time since the Agreement entered into force.[62]

Two filings after the Paris negotiations began—one in the Global North and one in the Global South—resulted in landmark decisions in 2015, the year that the Agreement was adopted and opened for signature. The Global North case was brought by the Dutch environmental group Urgenda Foundation against the Netherlands, alleging that its failure to adequately respond to the climate crisis violated the rights to life and private and family life protected by the European Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR)[63] and the duty of care under the Dutch Civil Code.[64] In a decision that garnered widespread international attention, the Hague District Court agreed and issued the first judicial order directing a state to reduce its GHG emissions.[65] In 2019, the Supreme Court of

61. *See* Peel & Lin, *supra* note 20, at 680 (noting "the global growth and increasing influence of litigation addressing issues of climate change in the last decade, particularly in the lead-up to, and following, the Paris negotiations"); *see also Global Climate Litigation Report: 2020 Status Review*, U.N. ENV'T PROGRAMME 4 (2020), https://wedocs.unep.org/bitstream/handle/20.500.11822/34818/GCLR.pdf?sequence=1&isAllowed=y [https://perma.cc/MGR8-NUKK] (stating climate change-related cases filed globally "nearly doubled" from 884 cases in 2017 to 1,550 cases in 2020).

62. *See* Joana Setzer & Catherine Higham, *Global Trends in Climate Change Litigation: 2022 Snapshot*, THE GRANTHAM RSCH. INST. ON CLIMATE CHANGE & THE ENV'T 1 (2022) [hereinafter Setzer & Higham, *Litigation Snapshot 2022*], https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/08/Global-trends-in-climate-change-litigation-2022-snapshot.pdf [https://perma.cc/G2J3-EMKE] ("Globally, the cumulative number of climate change-related litigation cases has more than doubled since 2015.").

63. Convention for the Protection of Human Rights and Fundamental Freedoms arts. 2, 8, *opened for signature* Nov. 4, 1950, 213 U.N.T.S. 221 (entered into force Sept. 3, 1953).

64. *See* RB Den Haag 24 juni 2015 [Dist. Ct. Hague], ECLI:NL:RBDHA:2015:7196, para. 4.35 (Urgenda Found./Netherlands) (Neth.) [hereinafter *Urgenda* District Court Decision], https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBDHA:2015:7196 [https://perma.cc/XB98-YUXK].

65. *Id.* para. 5.1 ("The court . . . orders the State to limit the joint volume of Dutch annual greenhouse gas emissions, or have them limited, so that this volume will have reduced by at least 25% at the end of 2020 compared to the level of the year 1990 . . . ."); *see, e.g.*, John Schwartz, *Ruling Says Netherlands Must Reduce Greenhouse Gas Emissions*, N.Y. TIMES (June 24, 2015), https://www.nytimes.com/2015/06/25/science/ruling-says-netherlands-must-reduce

the Netherlands made an even bigger international splash when it upheld the district court's order based on the ECHR claims.[66]

Just as significant albeit not as widely publicized as *Urgenda*, the other big 2015 climate decision hailed from the Global South: *Leghari v. Pakistan*.[67] Ashgar Leghari, a Pakistani farmer, brought suit against his government alleging that its failure to implement statutorily required climate adaption

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-greenhouse-gas-emissions.html [https://perma.cc/7V36-TKSJ] ("A court in the Netherlands has ordered the Dutch government to toughen its climate policies, a major ruling that could motivate environmental activists to pursue a similar legal strategy in other countries.").

66. HR 20 december 2019 [Sup. Ct. Neth.], ECLI:NL:HR:2019:2007, (Urgenda Found./Netherlands) (Neth.) [hereinafter *Urgenda*], https://www.urgenda.nl/wp-content/uploads/ENG-Dutch-Supreme-Court-Urgenda-v-Netherlands-20-12-2019.pdf [https://perma.cc/5ZEV-95NE]. The district court concluded that, although Urgenda could not "directly rely on Articles 2 and 8 [of the] ECHR" because it was not a natural person, ECHR rights gave content to the duty of care in the Dutch Civil Code that Urgenda had properly invoked. *Urgenda* District Court Decision, *supra* note 64, paras. 4.45–4.46, 4.52. In upholding the district court's order, however, the Supreme Court of the Netherlands held that Urgenda could directly rely on the ECHR, and thus it based its decision solely on the government's obligations under Articles 2 and 8. *See Urgenda*, *supra*, paras. 5.6.2, 5.9.3.

The New York Times noted that this decision "was the first time a nation has been required by its courts to take action against climate change." John Schwartz, *In 'Strongest' Climate Ruling Yet, Dutch Court Orders Leaders to Take Action*, N.Y. TIMES (Dec. 20, 2019), https://www.nytimes.com/2019/12/20/climate/netherlands-climate-lawsuit.html [https://perma.cc/947M-GVDA]. *See also, e.g.*, Margaretha Wewerinke-Singh & Ashleigh McCoach, The State of the Netherlands v Urgenda Foundation*: Distilling Best Practice and Lessons Learnt for Future Rights-Based Climate Litigation*, 30 REV. EUR., COMPAR. & INT'L ENV'T L. 275, 275 (2021) (noting that the Supreme Court of the Netherlands decision upholding the district court's order "has been widely celebrated for being the first in the world of its kind, requiring a State to adopt more ambitious climate policy so that human rights are protected from the adverse impacts of climate change").

67. Leghari v. Pakistan, (2015) W.P. No. 25501/2015 (HC Lahore) (Pak.) [hereinafter *Leghari I*], http://climatecasechart.com/wp-content/uploads/non-us-case-documents/2015/20150414_2015-W.P.-No.-25501201_decision.pdf [https://perma.cc/CB3V-PU4S]; *see* Barritt & Sediti, *supra* note 21, at 203–04 ("*Leghari* was the first climate change case from the Global South to attract worldwide scholarly and journalistic attention, emerging as it did at the same time as the far better publicised *Urgenda Foundation v The State of Netherlands*." (footnote omitted)); *cf.* Peel & Lin, *supra* note 20, at 679–81 (describing *Leghari* as "a prominent illustration of the global growth and increasing influence of litigation addressing issues of climate change," and noting that yet "a majority of the scholarship and practitioner discussion of climate litigation remains focused on court actions in developed countries of the 'Global North.'").

measures violated Pakistani citizens' right to life under Article 9 of Pakistan's constitution.[68] In a trenchant yet sweeping paragraph concluding that the right to life encompasses the rights to a healthy environment and human dignity, and drawing on multiple constitutional and international law principles, Mr. Justice Syed Mansoor Ali Shah of the Lahore High Court held that the "effective and immediate implementation [of the climate adaptation statute] is necessary for the protection and safeguard of the fundamental rights of the people."[69]

In the wake of these two remarkable decisions, climate-accountability case filings have continued to mount. To document this development, the United Nations Environment Programme (UNEP) published a report on the status of climate litigation in 2017.[70] In 2020, the UNEP published an update report on the

68. *Leghari I*, *supra* note 67, at 4.

69. Judgment at 10–11, Leghari v. Pakistan, (2018) W.P. No. 25501/2015 (H.C. Lahore) (Pak.) [hereinafter *Leghari 2018*], Each province of Pakistan has a high court, which exercises original jurisdiction in cases involving constitutional rights and appellate jurisdiction in other civil and criminal matters. FAQIR HUSSAIN, THE JUDICIAL SYSTEM OF PAKISTAN 12 (4th ed. 2015), https://www.supremecourt.gov.pk/downloads_judgements/all_downloads/Judicial_System_of_Pakistan/thejudicialsystemofPakistan.pdf [https://perma.cc/FB8F-7MCW]. The Lahore High Court sits in Punjab. *About Us*, LAHORE HIGH CT., https://lhc.gov.pk/about_us [https://perma.cc/9XE5-J9P6].

Several government ministers complied with Shah's order to attend a hearing to testify in response to his questions about the actions they had taken to implement the adaptation statute. *Leghari I*, *supra* note 67, at 4–5. After that hearing, Shah concluded that "[i]t is quite clear to me that no material exercise has been done on the ground to implement the [statute]," *id.* at 10, and he issued another order mandating the creation of a "Climate Change Commission," which included several government ministers along with representatives from non-governmental organizations, *id.* at 10, 11–13. Shah charged the Commission with "effective implementation" of the adaptation statute and directed it to submit reports "as and when directed by this Court." *Id.* at 13–14. The government officials complied to Shah's satisfaction, and three years later he issued a final order dissolving the Commission. *Leghari 2018*, *supra*, at 24–25. Shah retained oversight of the government's implementation of the statute, however, and created a "Standing Committee on Climate Change" to "act as a link between the Court and the Executive": "I, do not wish to dispose of the petition, but instead, consign it to the record, so that the Standing Committee can approach this Court for appropriate order for the enforcement of the fundamental rights of the people in the context of climate change, if and when required." *Id.* at 25–26.

70. *The Status of Climate Change Litigation: A Global Review*, U.N. ENV'T PROGRAMME (2017), https://wedocs.unep.org/bitstream/handle/20.500.11822/

status of the litigation, finding that since its 2017 report, "a rapid increase in climate litigation has occurred around the world."[71] The London School of Economics Grantham Institute on Climate Change and the Environment also began publishing an annual climate litigation "state of play" report in 2017,[72] and each report published in the subsequent five years documented an increase in filings.[73] And, as noted in the introduction, the IPCC devoted

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20767/climate-change-litigation.pdf?sequence=1&isAllowed=y [https://perma.cc/9C8L-7N96].

71. *Global Climate Litigation Report: 2020 Status Review*, *supra* note 61, at 4.

72. Michal Nachmany et al., *Global Trends in Climate Change Legislation and Litigation: 2017 Snapshot*, THE GRANTHAM RSCH. INST. ON CLIMATE CHANGE & THE ENV'T 5–8 (Nov. 2017), https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2017/11/Legislation-and-litigation-2017-policy-brief_web.pdf [https://perma.cc/5S6K-WPGU].

73. *See* Michal Nachmany & Joana Setzer, *Global Trends in Climate Change Legislation and Litigation: 2018 Snapshot*, THE GRANTHAM RSCH. INST. ON CLIMATE CHANGE & THE ENV'T 5 (May 2018), https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2018/04/Global-trends-in-climate-change-legislation-and-litigation-2018-snapshot-3.pdf [https://perma.cc/QY37-GFJN] ("[T]he judiciary is increasingly exposed to climate change arguments in cases where, until recently, the environmental argument would not have been framed in those terms."); Joana Setzer & Rebecca Byrnes, *Global Trends in Climate Change Litigation: 2019 Snapshot*, THE GRANTHAM RSCH. INST. ON CLIMATE CHANGE & THE ENV'T 1–2 (July 2019), https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2019/07/GRI_Global-trends-in-climate-change-litigation-2019-snapshot-2.pdf [https://perma.cc/24N6-X55Y] ("Climate change litigation continues to expand across jurisdictions as a tool to strengthen climate action. . . . Climate change litigation continues to reach the courts and the headlines, with non-government organisations . . . , individuals, and subnational governments (cities and states) filing cases." (citation omitted)); Joana Setzer & Rebecca Byrnes, *Global Trends in Climate Change Litigation: 2020 Snapshot*, THE GRANTHAM RSCH. INST. ON CLIMATE CHANGE & THE ENV'T 3 (July 2020), https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2020/07/Global-trends-in-climate-change-litigation_2020-snapshot.pdf [https://perma.cc/2BA4-N7P7] ("The number of cases addressing the causes and consequences of climate change, and the public interest in such litigation, has now . . . grown to a point where litigation is considered by many as a governance mechanism for addressing climate change . . . ." (citation omitted)); Setzer & Higham, *Global Trends*, *supra* note 20, at 4, 7 ("Globally, the cumulative number of climate change-related cases has more than doubled since 2015. Just over 800 cases were filed between 1986 and 2014, while over 1,000 cases have been brought in the last six years . . . . We expect that climate change litigation will continue to grow . . . ."); Setzer & Higham, *Litigation Snapshot 2022*, *supra* note 62, at 9 ("Data from the past 12 months confirms that litigation continues to expand . . . .").

several paragraphs to the litigation in its recent assessment report, published in April of 2022.[74] This is a marked change from the last time it mentioned climate litigation in its 2007 assessment report, which, having been published in the pre-Paris period, just briefly referenced climate litigation and cited a handful of cases.[75]

In addition to an increased volume of filings, the post-Paris period has seen significant expansions in jurisdictions and sources of law. The number of countries where filings have been made has steadily increased, particularly in the Global South. In recent years, for example, cases have been filed in Brazil,[76] Colombia,[77] Ecuador,[78] Guyana,[79] India,[80] Nepal,[81] and the Philippines.[82] Individuals and organizations are also filing petitions and complaints in a greater variety of fora, including with the

74. *See* Dubash & Mitchell, *supra* note 13 and accompanying text.

75. *See supra* note 1 and accompanying text.

76. *See* Joana Setzer, *First Climate Case Reaches Brazil's Supreme Court*, THE GRANTHAM RSCH. INST. ON CLIMATE CHANGE & THE ENV'T (Sept. 30, 2020), https://www.lse.ac.uk/granthaminstitute/news/first-climate-case-reaches-brazils-supreme-court [https://perma.cc/F3H9-P3JR].

77. *See* Luisa Gómez-Betancur, *The Rights of Nature in the Colombian Amazon: Examining Challenges and Opportunities in a Transitional Justice Setting*, 25 UCLA J. INT'L L. & FOREIGN AFFS. 41, 65–66 (2020).

78. *See* Antonio José Paz Cardona, *Ecuador Court Orders End to Gas Flaring by Oil Industry in Amazon*, MONGABAY (Mar. 9, 2021), https://news.mongabay.com/2021/03/ecuador-court-orders-end-to-gas-flaring-by-oil-industry-in-amazon [https://perma.cc/2UT7-6KBW].

79. *See* Anastasia Moloney, *Climate Lawsuits Snowball as South Americans Seek a Healthy Environment*, REUTERS (May 31, 2021), https://www.reuters.com/article/us-climate-change-litigation-latam/climate-lawsuits-snowball-as-south-americans-seek-a-healthy-environment-idUSKCN2DD25E [https://perma.cc/3H39-MXSJ]; *Guyana*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, http://climatecasechart.com/non-us-jurisdiction/guyana [https://perma.cc/JNF2-GHYB] (listing three filings in Guyana, two involving claims alleging violations of environmental laws and the other violations of constitutional rights).

80. *See* Shibani Ghosh, *Litigating Climate Claims in India*, 114 AM. J. INT'L L. UNBOUND 45 (2020) (discussing fourteen climate cases that have been filed in India and analyzing their import and implications for the future of climate litigation in the country).

81. *See Nepal-Shrestha v. Office of the Prime Minister et al.*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, https://www.climate-laws.org/geographies/nepal/litigation_cases/shrestha-v-office-of-the-prime-minister-et-al [https://perma.cc/G4PB-ZUY8] (summarizing proceedings with links to the judgment in Nepali and English [unofficial translation]).

82. *See supra* text accompanying notes 7–11.

Inter-American Human Rights Commission,[83] the East African Court of Justice,[84] the European Court of Human Rights,[85] the International Criminal Court,[86] the U.N. Human Rights Committee,[87] the U.N. Human Rights Special Rapporteurs,[88] the

83. *See Hearing on Climate Change Before the Inter-American Commission on Human Rights*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, https://climate-laws.org/geographies/international/litigation_cases/hearing-on-climate-change-before-the-inter-american-commission-on-human-rights [https://perma.cc/GFG5-ZF4E]; *Petition to the Inter-American Commission on Human Rights Seeking to Redress Violations of the Rights of Children in Cité Soleil, Haiti*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, https://climate-laws.org/geographies/international/litigation_cases/petition-to-the-inter-american-commission-on-human-rights-seeking-to-redress-violations-of-the-rights-of-children-in-cite-soleil-haiti [https://perma.cc/DZU2-8KZ2].

84. *See Center for Food and Adequate Living Rights et al. v. Tanzania and Uganda*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, https://climate-laws.org/geographies/international/litigation_cases/center-for-food-and-adequate-living-rights-et-al-v-tanzania-and-uganda [https://perma.cc/E8HH-DK6V] (summarizing and providing a link to complaint of four non-governmental organizations' petitions seeking an injunction to stop the East African Crude Oil Pipeline on the ground that Tanzania and Uganda signed an agreement to build it "without proper environmental, social, human rights, and climate impact assessments").

85. *See* Helen Keller & Corina Heri, *The Future Is Now: Climate Cases Before the ECtHR*, 40 NORDIC J. HUM. RTS. 153 (2022) (discussing the first four climate cases filed with the European Court of Human Rights).

86. *See The Planet v. Bolsonaro*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, https://climate-laws.org/geographies/international/litigation_cases/the-planet-v-bolsonaro [https://perma.cc/VW3Q-W6ME] (summarizing and linking to communication filed with the International Criminal Court under Article 15 of the Rome Statute requesting an investigation into whether Brazilian President Jair Bolsonaro committed crimes against humanity by "promot[ing] and facilitat[ing] a 'widespread attack' on the Amazon Biome and 'those who defend and depend upon it'").

87. *See* U.N. Hum. Rts. Comm., Views Adopted by the Committee Under Article 5(4) of the Optional Protocol, Concerning Communication No. 2728/2016, paras. 2.1, 4.1, 9.7–10, U.N. Doc. CCPR/C/127/D/2728/2016 (Oct. 24, 2019) (rejecting Kiribati citizen Ioane Teitiota's claim that New Zealand had violated his right to life under the International Covenant on Civil and Political Rights by denying him asylum when climate-change-induced sea level rise caused land degradation leading to violent land disputes and saltwater contamination of the freshwater supply, reasoning that these threats were not sufficiently "imminent" or specific to Teitiota to amount to a violation of the right to life). For a thoughtful analysis of the significance of Teitiota's claim and its significance for international law, see Wewerinke & Antoniadis, *supra* note 21.

88. *See Environmental Justice Australia (EJA) v. Australia*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, https://

U.N. Committee on the Rights of the Child,[89] and the Commission on Human Rights of the Philippines.[90]

Most recently, within a span of four months, states submitted three requests to international courts for advisory opinions on state obligations related to climate change. First, in December of 2022, the Commission of Small Island States on Climate Change and International Law asked the International Tribunal for the Law of the Sea for an opinion on state climate-related obligations under the U.N. Convention on the Law of the Sea.[91] Less than a month later, Colombia and Chile asked the Inter-American Court of Human Rights to clarify states' individual and collective climate obligations under various provisions of the

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climate-laws.org/geographies/international/litigation_cases/environmental-justice-australia-eja-v-australia [https://perma.cc/5V6R-FECA] (summarizing and linking to complaint); *Rights of Indigenous People in Addressing Climate-Forced Displacement*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, https://climate-laws.org/geographies/international/litigation_cases/rights-of-indigenous-people-in-addressing-climate-forced-displacement [https://perma.cc/CWN5-M7G3] (summarizing a complaint submitted by five U.S. Indian tribes alleging that the U.S. government has violated multiple human rights and their rights to self-determination by failing to address climate displacement, and providing links to the complaint and the Special Rapporteurs' communication to the United States).

89. *See Sacchi et al. v. Argentina et al.*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, https://climate-laws.org/geographies/international/litigation_cases/sacchi-et-al-v-argentina-et-al [https://perma.cc/RF59-P4D7] (summarizing proceedings with links to filings and decisions).

90. *See supra* notes 7, 9. Importantly, the CHRP is National Human Rights Commission recognized and supported by the U.N. Office of the High Commissioner for Human Rights. *UN Human Rights and NHRIs*, OHCHR, https://www.ohchr.org/en/countries/nhri [https://perma.cc/LE8R-QGQG].

91. Hon. Gaston Browne & Hon. Kausea Natano, Co-Chairs of the Comm'n of Small Island States on Climate Change and Int'l L., Request for an Advisory Op. (12 Dec. 2022), https://www.itlos.org/fileadmin/itlos/documents/cases/31/Request_for_Advisory_Opinion_COSIS_12.12.22.pdf [https://perma.cc/UT3A-KNHK]. The Commission of Small Island States was established as an entity with international legal personality in an agreement between the governments of Antigua and Barbuda and of Tuvalu and charged with "promot[ing] and contribut[ing] to the definition, implementation, and progressive development of . . . international law concerning climate change." Agreement for the Establishment of the Commission of Small Island States on Climate Change and International Law, Ant. & Barb.-Tuvalu, art. 1(3), Oct. 31, 2021, https://treaties.un.org/doc/Publication/UNTS/No%20Volume/56940/Part/I-56940-080000028 05c2ace.pdf [https://perma.cc/Q9VK-CX4K].

American Convention on Human Rights.[92] Finally, the U.N. General Assembly made headlines all over the world in March of 2023 by adopting by consensus a landmark resolution seeking an advisory opinion from the International Court of Justice on the nature of state climate obligations and the consequences of violating them under multiple sources of international law, including the U.N. Charter, human rights treaties, and customary international law.[93]

Most of the contentious cases thus far have been filed against governments, but the number of filings against corporations is on the rise.[94] One of the first filings of the post-Paris period was such a case: *Lliuya v. RWE*.[95] Like *Leghari*, this case was filed by a farmer from the Global South and involves the need to adapt to climate threats. Interestingly, though, unlike *Leghari*, *Lliuya* is a transnational case: the defendant is in a different country—one in the Global North. Saúl Ananías Luciano Lliuya, whose home in Huaraz, Peru, lies at the foot of melting Andes glaciers, sued the German power company RWE in German district court alleging that RWE's GHG emissions constituted a nuisance in violation of the German Civil Code.[96] Lliuya

92. *See* Juan Auz & Thalia Viveros-Uehara, *Another Advisory Opinion on the Climate Emergency? The Added Value of the Inter-American Court of Human Rights*, EJIL: TALK! (Mar. 2, 2023), https://www.ejiltalk.org/another-advisory-opinion-on-the-climate-emergency-the-added-value-of-the-inter-american-court-of-human-rights [https://perma.cc/WEH8-W59F] (summarizing and explaining significance of the request and providing a link to the resolution in Spanish).

93. G.A. Res. 77/276, Request for an Advisory Opinion of the International Court of Justice in Respect of the Obligations of States in Respect of Climate Change (Mar. 29, 2023). For a discussion of the significance of the request for multilateral governance within the United Nations system, see Karen C. Sokol, *A Glimpse into More Equitable International Governance*, VERFASSUNGSBLOG (Apr. 13, 2023), https://verfassungsblog.de/a-glimpse-into-more-equitable-international-governance [https://perma.cc/R7HS-WCTZ].

94. *See* Setzer & Higham, *Global Trends*, *supra* note 20, at 5–6, 17.

95. Landesgericht Essen [LG] [Dist. Ct. Essen] Dec. 15, 2016, 2 O 285/15 (Ger.) http://www.justiz.nrw.de/nrwe/lgs/essen/lg_essen/j2016/2_O_285_15_Urteil_20161215.html, *translated in* SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITG. DATABASE, https://climatecasechart.com/wp-content/uploads/non-us-case-documents/2016/20161215_Case-No.-2-O-28515-Essen-Regional-Court_decision-1.pdf [https://perma.cc/LE8D-Q5GR].

96. Klage [Complaint] at 2–3, Landesgericht Essen [LG] [Dist. Ct. Essen] Nov. 23, 2015, 2 O 285/15 (Ger.), [hereinafter *Lliuya* Complaint], *available at* THE CLIMATE CASE: SAÚL V. RWE, https://rwe.climatecase.org/sites/default/

sought compensatory relief for the costs of protecting his property from the impending "outburst" of Lake Palcacocha, a glacial lake located above Huaraz with dangerously high water levels as a result of glacier melting.[97]

Relying on climate science research attributing the glacial flood risk above Huaraz to anthropogenic emissions,[98] Lliuya argued that RWE is responsible for payment of flood protection measures in proportion to its contribution to post-industrial global GHG emissions.[99] Although the district court dismissed the claim, the appellate court reversed,[100] and the judges subsequently traveled to Huaraz to investigate the glacial flood risk threatening Lliuya's home and the extent of RWE's contribution to that risk.[101]

Plaintiffs have filed a number of other important cases against corporate high emitters that, like *Lliuya*, share the three features of climate-accountability cases, including a successful case against Shell in the Netherlands alleging that the company

files/2022-10/23.11.2015%20Kl%C3%A4ger%20Klage.pdf, *translated in* SABIN CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, https://climatecasechart.com/wp-content/uploads/non-us-case-documents/2015/20151123_Case-No.-2-O-28515-Essen-Regional-Court_complaint-1.pdf [https://perma.cc/H7V6-QSJG].

97. *Id.* at 3.

98. *See Study Supports Climate Litigation Claim Against German Utility RWE: Human-Made Emissions Responsible for Glacial Flood Risk in the Andes*, GERMANWATCH, (Feb. 4, 2021), https://www.germanwatch.org/en/19839 [https://perma.cc/6A25-6ELS].

99. *Lliuya* Complaint, *supra* note 96, at 19–21 (citing study finding that RWE is responsible for 0.47 percent of global GHG emissions during the period from 1751 to 2010, and thus seeking 17,000 of the 3,500,000 Euros required to pay for the draining of Lake Palcacocha).

100. Beschluss [Ruling], Oberlandesgericht Hamm [OLG] [Reg'l Ct. of Appeals Hamm], Feb. 7, 2018, 1-5 U 15/17, (Ger.), *available at* THE CLIMATE CASE: SAÚL V. RWE, https://rwe.climatecase.org/sites/default/files/2022-05/07.02.2018%20OLG%20Hamm%20Beschluss%20zur%20Gegenvorstellung%20der%20Beklagten%20vom%201412.2017.pdf, *translated in* SABIN CTR. CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITG. DATABASE, http://climatecasechart.com/wp-content/uploads/non-us-case-documents/2018/20180207_Case-No.-2-O-28515-Essen-Regional-Court_order-1.pdf [https://perma.cc/84QZ-LJ93].

101. *Climate Lawsuit Against RWE in Decisive Phase: On-Site Meeting with Experts in Peru Concluded*, GERMANWATCH (May 27, 2022), https://www.germanwatch.org/en/85437 [https://perma.cc/P8KD-KUS9].

is liable under Dutch tort law for failing to align its business operations with the Paris Agreement's global temperature goal;[102] several cases in the United States filed by local governments against major fossil fuel companies alleging that their long-standing climate disinformation campaign violated state tort, deceptive marketing, and fraudulent conspiracy laws;[103] and the petition filed with the CHRP based on international and domestic human rights laws described in the introduction.[104]

On the plaintiff side, young people have filed many of the post-Paris cases.[105] In some of the cases, scientists have joined them.[106] While most of the plaintiffs thus far are individuals and non-governmental organizations, a significant number have now

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102. *See* Rb. The Hague [Dist. Ct. The Hague], 26 mei 2021, C/09/571932/HA ZA 19-379, ECLI:NL:RBDHA:2021:5339 (Net.), ¶¶ 3.1, 3.2, 4.4.38–.39, http://deeplink.rechtspraak.nl/uitspraak?id=ECLI:NL:RBDHA:2021:5339 [https://perma.cc/5YK8-W7P6].

103. *See* Karen C. Sokol, *Forging Global Rule of Law Through Climate Litigation Against the United States and the Fossil Fuel Industry*, 4 Y.B. INT'L DISASTER L. 237, 251–55 (2023) [hereinafter Sokol, *Forging Global Rule of Law*]. The most recent such filing as this Article goes to press was by several Puerto Rico municipalities alleging that the fossil fuel company defendants violated the federal Racketeer and Influenced and Corrupt Organizations Act in addition to several Puerto Rico laws. *See* Complaint at 214–28, Bayamón v. Exxon Mobil Corp., No. 3:22-cv-01550 (D.P.R. Nov. 11, 2022).

104. *See supra* text accompanying notes 7–11. It bears mention that, like in *Lliuya*, the CHRP petitioners are from the Global South and the corporate defendants are based in the Global North.

105. *See, e.g.*, Findings of Fact, Conclusions of Law, and Order, at *1–2, *102, Held v. Montana, No. CDV-2020-307 (Mont. Dist. Ct. 2023), https://climatecasechart.com/wp-content/uploads/case-documents/2023/20230814_docket-CDV-2020-307_order.pdf [https://perma.cc/PAC6-8FH2] (finding, in a case brought by six Montana youths, that a Montana statute prohibiting state agencies from considering climate impacts in their environmental reviews was facially unconstitutional on the ground that it violated the Montana Constitution's right to a clean and healthful environment, which the court concluded included protection of the climate).

106. *See, e.g.*, *Thomas & De Freitas v. Guyana*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, https://climate-laws.org/geographies/guyana/litigation_cases/thomas-de-freitas-v-guyana [https://perma.cc/CNP2-KWMB] (summarizing complaint filed by an Indigenous youth and scientist against the government of Guyana alleging that its grant of oil exploration license to ExxonMobil violated their constitutional rights); Juliana v. United States, 217 F. Supp. 3d 1224, 1233 (D. Or. 2016) (stating that youth plaintiffs were joined by climate scientist Dr. James Hansen as guardians for future generations).

been filed by local governments[107] and Indigenous peoples,[108] and some small island states have discussed the possibility of filing cases.[109]

Even at this beginning stage, it is clear that climate-accountability litigation has significant implications for courts' role in global climate governance as well as the "global judicialization" phenomenon more broadly, as this is the first time that this many judicial institutions at all jurisdictional levels in so many parts of the world have faced an issue of such global significance within the same relatively short time period.[110] These cases bear similarities to those studied in the literature on courts' roles in international governance discussed in Part I, but there are also significant differences that present unique challenges and opportunities for courts' global governance roles in a climate-disrupted world order.

B. SIMILARITIES AND DIFFERENCES TO CASES STUDIED IN CURRENT SCHOLARSHIP ON COURTS IN INTERNATIONAL LAW AND GOVERNANCE

The scholarship on the role of courts in international law and governance to date has focused on litigation requiring courts to interpret and enforce international legal obligations that states have committed to by ratifying or acceding to international agreements, such as human rights treaties,[111] the Rome

107. *See supra* note 103 and accompanying text.

108. *See Rights of Indigenous People in Addressing Climate-Forced Displacement*, *supra* note 88.

109. *See* Margaretha Wewerinke-Singh & Diana Hinge Salili, *Between Negotiations and Litigation: Vanuatu's Perspective on Loss and Damage from Climate Change*, 20 CLIMATE POL'Y 681, 686–87 (2019).

110. *See* Setzer & Higham, *Climate Litigation*, *supra* note 12.

111. *See, e.g.*, ALTER, *supra* note 29, at 407–14 (listing multiple treaties); Contesse, *supra* note 49, at 314–17 (American Convention on Human Rights); Romano, *International Judicial Network*, *supra* note 26, at 245–46 (European Convention on Human Rights, American Convention on Human Rights, African Charter on Human and Peoples' Rights, and various U.N. human rights treaties); Slaughter, *supra* note 47, at 111–12 (European Convention on Human Rights and International Covenant on Civil and Political Rights).

Statute of the International Criminal Court,[112] regional organization charters,[113] and economic agreements.[114] Courts can serve as sites for development of the law where, as is often the case, the meaning of a treaty provision in a given case is ambiguous. Providing authoritative interpretations of these ambiguities tends to strengthen the treaty system and international governance more broadly.[115] Many of the climate-accountability cases are similar in that they rely on international human rights obligations either directly or as incorporated into domestic laws applicable to governmental and private actors. Since these laws have largely yet to be applied in the climate context, judicial resolution is a governance mechanism particularly well-suited to the task of determining the meaning of these laws when applied to the facts of a changed climate. The cases can thus be understood as part of the judicial process of developing and enforcing international law and promoting respect for the law as world conditions evolve.

Yet, climate-accountability cases are also distinctive from those studied in the international law literature on courts for at least two significant reasons regarding courts' roles in global governance. First, the cases are different because they do not ground the source of liability in an international climate treaty. Rather, they draw on UNFCCC and Paris Agreement principles and objectives, as well as on IPCC reports in support of non-UNFCCC based claims. In this sense, they press courts to ascertain the meaning of relatively "hard" obligations—in international or domestic law—in light of norms, objectives, and IPCC reports originating from the UNFCCC regime. Consequently, climate-

112. *See, e.g.*, ALTER, *supra* note 29, at 412; Romano, *International Judicial Network*, *supra* note 26, at 254–55; Posner & Yoo, *supra* note 33, at 67–70.

113. *See, e.g.*, ALTER, *supra* note 29, at 407–14 (listing multiple treaties); Slaughter, *supra* note 47, at 108–10 (discussing the Treaty of Rome).

114. *See* ALTER, *supra* note 29, at 407–14 (listing multiple treaties); Posner & Yoo, *supra* note 33, at 44–50 (discussing the General Agreement on Tariffs and Trade); Romano, *International Judicial Network*, *supra* note 26, at 246–47, 251 (discussing the General Agreement on Tariffs and Trade).

115. *Cf.* Tom Ginsburg & Richard H. McAdams, *Adjudicating in Anarchy: An Expressive Theory of International Dispute Resolution*, 45 WM. & MARY L. REV. 1229, 1270–71 (2004) (applying game theory to provide an "expressive" theory of international adjudication that includes the construction of "focal points" that clarify ambiguities in treaties by "carefully articulat[ing] the legal rule in a case of first impression").

accountability case rulings have the potential to shape the meaning not just of the obligations directly invoked but also of those under the UNFCCC regime.

Second, courts faced with climate-accountability also face a distinct institutional puzzle. Certainly, courts dealing with international or transnational legal issues are necessarily confronted with the potentially global significance of their rulings and thus must navigate the contours of their distinctive judicial institutional role as cases present new issues. However, the issues raised by climate-accountability cases are not just international and transnational, but also *planetary*. Indeed, this is undoubtedly a significant part of the reason that these cases have captured such widespread public interest.

As I explain in Part III, although the theories about the international judicial landscape articulated in the scholarship discussed in Part I provide a strong foundation for conceptualizing the role of courts in global governance in a climate-disrupted world order, a new theory is necessary to account for these distinctive aspects of the cases.

III. THE STRUCTURAL ROLE OF COURTS IN THE NEW ERA OF CLIMATE-ACCOUNTABILITY CASES: "RESPONSIBILITY DIFFERENTIATION"

The current climate-litigation scholarship that considers its role in climate governance is primarily focused on its impacts on governance from the outside rather than on its role in governing,[116] and particularly on its impact on governance related to mitigation of GHGs.[117] Although this approach has some value from a short-term perspective, it risks overlooking the more fundamental structural role of the litigation and, consequently, risks expecting both too much and too little of it. As noted, my

116. As indicated by the quotes from the IPCC's most recent report cited *supra* note 22, this was the primary focus of the literature on climate litigation reviewed by the IPCC. Indeed, the section containing the most extensive discussion of the litigation is titled "Shaping Climate Governance Through Litigation," and it is discussed together with the "tactics of protests and strikes" and the media. *See* Dubash & Mitchell, *supra* note 13, at 1373–78.

117. The sections in the IPCC's most recent assessment report focused on the litigation are in the portion of the report produced by Working Group III, which is focused on mitigation. *See* Dubash & Mitchell, *supra* note 13; *see also* Setzer & Vanhala, *supra* note 19, at 4 ("We found that most papers were concerned with litigation to address mitigation . . . .").

perspective starts with courts—specifically, their increased institutional presence in global governance, which is the focus of the literature discussed in Part I. From that perspective, it becomes clear that the litigation is adding a much-needed judicial component to global climate governance. As a Brazilian Supreme Court justice put it in that court's first decision in a climate-accountability case: "the Judiciary must also respond to the climate emergency."[118]

In other words, rather than potentially serving as a mechanism for impacting "governance" from the outside, the litigation has already made a large network of courts and other adjudicatory bodies *part* of global climate governance. That distinction is significant, as it is necessary to start with a focus on judicial roles in governance to understand what the litigation means for global governance above and beyond particular wins and losses or the response of a defendant to a given judgment.[119]

At the most basic level, assuming the adjudicatory body has sufficient independence, its existence means that power is less concentrated in both the policymaking branches and private actors with significant political influence.[120] Further, judicial power is distinctive.[121] As discussed in Part I, the literature on courts and international law and governance is ultimately

118. STF, Allegation of Non-compliance with Fundamental Precept 708 Federal District (ADPF 708/DF), Rapporteur: Min. Roberto Barroso, 07/04/2022, Federal Supreme Court Jurisprudence [STFJ] 09/28/2022, at 43 (Braz.), (Fachin, J., concurring) https://redir.stf.jus.br/paginadorpub/paginador.jsp?docTP=TP&docID=763392091 [https://perma.cc/4FXE-Z5SE], *translated in* SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITG. DATABASE, at 43 (Braz.) (Fachin, J., concurring) http://climatecasechart.com/wp-content/uploads/non-us-case-documents/2022/20220701_ADPF-708_decision-3.pdf [https://perma.cc/MGP3-TJQM].

119. *See supra* note 33 and accompanying text.

120. *Cf.* Karen J. Alter et al., *Theorizing the Judicialization of International Relations*, 63 INT'L STUD. Q. 449, 449 (2019) ("At the international level, judicialization—where it exists—can diminish the sovereignty of states and the autonomy of their leaders."); Whytock, *Law and World Politics*, *supra* note 37, at 12 ("[B]y interpreting treaties, domestic courts—especially those that enjoy a degree of judicial independence—may limit the ability of other domestic actors to engage in self-serving auto-interpretation of international legal rules, thereby contributing to compliance.").

121. *See, e.g.*, Jeremy Waldron, *Separation of Powers in Thought and Practice?*, 54 B.C. L. REV. 433, 434–35 (2013) (describing separation of powers as "articulated, as opposed to undifferentiated, modes of governance," and elaborating on the "articulated" nature of judicial governance in contrast to that of the legislature).

driven by the understanding that, because adjudicatory institutions serve a unique governance role in enforcing, developing, and providing remedies for violations of the law, their existence in any area of global governance is critical to its integrity.[122] Moreover, in instances in which courts are presented with similarly difficult issues, there is a potential for supranational and national courts to consider each other's decisions in exercising these roles, and thus for the formation of a loose transnational judicial structure or "network."

A role of courts that is at most implicitly referenced in the literature on courts in international governance is, I maintain, the key role of courts in the context of climate-accountability litigation: namely, determining and potentially assigning legal responsibility.[123] While this role is important in all cases, it bears particular significance in the context of climate-related legal responsibility, which has remained elusive even though the UNFCCC regime has existed for over three decades. Section A summarizes the geopolitical dynamics that have undermined the articulation of legal responsibility within the UNFCCC regime. Section B elaborates the judicial "responsibility-differentiation" role that climate-accountability cases are calling upon courts to serve.

A. DE FACTO "UNDIFFERENTIATED" RESPONSIBILITY IN THE PARIS AGREEMENT

Wealthy nations bear the most responsibility for the climate disruption as high historical GHG emitters, with the United States being the most responsible as the highest historical emitter.[124] That is, after all, how these countries accumulated their

122. *See, e.g.*, Romano, *International Judicial Network*, *supra* note 26, at 236 ("[I]f the international legal system aspires to be a *legal order* (that is, a community based on the rule of law, a social order where everyone is subject to laws and they are enforced impartially), it ought to be endowed with courts.").

123. It is implicitly referenced because, after all, courts must interpret the meaning of laws to determine whether a given defendant is legally responsible to undertake or refrain from some action, and assigning responsibility is a condition precedent to enforcing laws with judicial remedies.

124. *See* Simon Evans, *Analysis: Which Countries Are Historically Responsible for Climate Change?*, CARBON BRIEF (May 10, 2021) https://www.carbonbrief.org/analysis-which-countries-are-historically-responsible-for-climate-change [https://perma.cc/6HT8-ES9V]. China surpassed the United States as the high-

wealth, which also provides them, ironically, with much greater capacity to adapt to climate impacts than low-income nations.[125] Indeed, 2022's devastating heatwaves, droughts, and flooding in Pakistan,[126] India,[127] and multiple countries throughout Africa,[128] bring into painfully sharp view the fact that climate impacts have been and continue to be borne disproportionately by low-income nations of the Global South that have contributed the least to the climate problem.[129] Particularly given that

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est current *absolute* emitter in 2006. *See* John Vidal & David Adam, *China Overtakes US as World's Biggest CO2 Emitter*, GUARDIAN (June 19, 2007), https://www.theguardian.com/environment/2007/jun/19/china.usnews [https://perma.cc/HR4P-H9ZG]. However, the per capita emissions of the United States still far surpass that of China, which is not even among the top twenty per capita emitters. *See* Evans, *supra* (showing how countries rank in terms of their cumulative emissions per population in 2021).

125. *See* Patrick Greenfield et al., *Barbados PM Launches Blistering Attack on Rich Nations at COP27 Climate Talks*, GUARDIAN (Nov. 7, 2022), https://www.theguardian.com/environment/2022/nov/07/barbados-pm-mia-mottley-launches-blistering-attack-on-rich-nations-at-cop27-climate-talks [https://perma.cc/BC67-7998].

126. *See Pakistan Monsoon Floods 2022 Islamic Relief Pakistan*, RELIEFWEB (Oct. 12, 2022), https://reliefweb.int/report/pakistan/pakistan-monsoon-floods-2022-islamic-relief-pakistan-12-october-2022 [https://perma.cc/AD48-SZRE].

127. *See* Dhruv Khullar, *Living Through India's Next-Level Heat Wave*, NEW YORKER (July 25, 2022), https://www.newyorker.com/magazine/2022/08/01/living-through-indias-next-level-heat-wave [https://perma.cc/C2C6-C9S2].

128. *See* Daisy Dunne, *Analysis: Africa's Unreported Extreme Weather in 2022 and Climate Change*, CARBON BRIEF (Oct. 26, 2022), https://www.carbonbrief.org/analysis-africas-unreported-extreme-weather-in-2022-and-climate-change [https://perma.cc/ZJS4-MGCS].

129. Vulnerability to climate impacts is not just a geophysical matter, but, just as importantly, a matter of capacity to respond and adapt, which is, in turn, a matter of power and wealth. *Cf.* Hans Pörtner et al., *Summary for Policymakers*, *in* CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY: WORKING GROUP II CONTRIBUTION TO THE SIXTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 3, 12, para. B.2.4 (Hans Pörtner et al. eds., 2022) [hereinafter IPCC, AR6 WGII Report], https://report.ipcc.ch/ar6/wg2/IPCC_AR6_WGII_FullReport.pdf (last visited Oct. 19, 2023) ("Present development challenges causing high vulnerability are influenced by historical and ongoing patterns of inequity such as colonialism . . . ."); IPCC, *Summary for Policymakers*, *in* GLOBAL WARMING OF 1.5°C: AN IPCC SPECIAL REPORT ON THE IMPACTS OF GLOBAL WARMING OF 1.5°C ABOVE PRE-INDUSTRIAL LEVELS AND RELATED GLOBAL GREENHOUSE GAS EMISSION PATHWAYS 3, 11, fig. SPM.2 (Valérie Masson-Delmotte et al. eds., 2018) [hereinafter IPCC, SPECIAL 1.5°C REPORT SPM] https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SPM_version_report_LR.pdf [https://perma.cc/GH2L-J884] (noting that the IPCC's "framework for . . . illustrat[ing] the implications of global

wealthy nations tend to have an outsized influence in treaty negotiations, this geopolitical disconnect between the causes and consequences of climate change has made effective governance within the UNFCCC regime challenging, to say the least.

At least as a formal matter, the UNFCCC recognizes the need for international climate law to reflect the reality of the unequal distribution of climate responsibility and harms with the "common but differentiated responsibilities" (CBDR) principle: "[t]he Parties should protect the climate system . . . on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities."[130] Thus, the UNFCCC provides that developed countries "should take the lead in combating climate change,"[131] and that the wealthiest developed countries[132] "shall take all practicable steps to promote, facilitate and finance" the efforts of developing countries to respond to climate threats.[133]

Although the Paris Agreement reiterates the CBDR principle,[134] the design of parties' obligations largely reflects an "undifferentiated" responsibility structure. More specifically, the Agreement establishes a system in which *every* country is to submit "successive nationally determined contributions [to achieving the Agreement's global temperature goal] that it intends to achieve."[135] This is in stark contrast to the design of the Paris

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warming for people, economies and ecosystems" includes as one of five "reasons for concerns" the disproportionate impacts on "particular groups due to uneven distribution of physical climate change hazards, exposure or vulnerability").

130. UNFCCC, *supra* note 2, art. 3(1).

131. *Id.*

132. The UNFCCC established a system for categorizing countries based on their levels of economic development. "Annex II" countries—those that were members of the Organization for Economic Cooperation and Development in 1992—are responsible for providing financial resources to developing countries, which are designated as "Non-Annex I" countries. *See Process and Meetings: Parties & Observers*, UNITED NATIONS CLIMATE CHANGE, https://unfccc.int/parties-observers [https://perma.cc/F3MJ-UEE3].

133. UNFCCC, *supra* note 2, art. 4(5). Further, the Convention recognizes that "[t]he extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology . . . ." *Id.* art. 4(7).

134. *See* Paris Agreement, *supra* note 15, at pmbl., arts. 2(2), 4(3), 4(19).

135. *Id.* art. 4(2).

Agreement's predecessor—the Kyoto Protocol[136] (Kyoto or Protocol)—which contained mandatory emission reduction targets for developed countries but not for developing countries.[137]

The Protocol had little chance of success, however, because the United States, the highest historical emitter, was not among its 192 parties.[138] The Protocol's "differentiated responsibility" structure was met with strong opposition by many U.S. politicians, which culminated in the U.S. Senate's unanimous adoption of a resolution prohibiting ratification of any UNFCCC treaty that contained obligations for developed countries and not for developing countries.[139] Although President Bill Clinton signed Kyoto, he never submitted it for Senate approval,[140] and

136. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 2303 U.N.T.S. 162.

137. *Id.* art. 3(1).

138. *See Status of Treaties: Chapter XXVII 7.a Kyoto Protocol to the United Nations Framework Convention on Climate Change*, UNITED NATIONS TREATY COLLECTION (Sept. 1, 2023), https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-a&chapter=27&clang=_en [https://perma.cc/P92M-FHKP]; *see also The Kyoto Protocol—Status of Ratification*, UNITED NATIONS CLIMATE CHANGE [hereinafter Kyoto Status of Ratification], https://unfccc.int/process/the-kyoto-protocol/status-of-ratification [https://perma.cc/3E7J-ZC57] (noting that one hundred ninety-one states and the European Union are parties).

139. S. Res. 98, 105th Cong. (1998); *see also* Susan Biniaz, *What Happened to Byrd-Hagel? Its Curious Absence from Evaluations of the Paris Agreement*, SABIN CTR. FOR CLIMATE CHANGE L., COLUM. L. SCH. 2–4 (2018) (providing background on the negotiations leading up to Kyoto and the impact of the resolution). Not unrelatedly, the fossil fuel industry also launched a massive campaign directed at U.S. audiences attacking the Kyoto Protocol and the IPCC by calling climate science into question and deeming the Protocol a threat to U.S. sovereignty, national security, and economic prosperity. *See* Geoffrey Supran & Naomi Oreskes, *Rhetoric and Frame Analysis of ExxonMobil's Climate Change Communications*, 4 ONE EARTH 696, 710–12 (2022); Robert J. Brulle, *Advocating Inaction: A Historical Analysis of the Global Climate Coalition*, 32 ENV'T POL. 185, 193–201 (2023); Benjamin Franta, *Weaponizing Economics: Big Oil, Economic Consultants, and Climate Policy Delay*, 31 ENV'T POL. 555, 568–70 (2022).

140. Press Release, White House Office of the Press Secretary, Statement by the Press Secretary (Nov. 12, 1998), https://clintonwhitehouse4.archives.gov/CEQ/19981112-7790.html [https://perma.cc/AXR6-UJRM]; *see also Congress Climate History*, CTR. FOR CLIMATE & ENERGY SOLS., https://www.c2es.org/content/congress-climate-history [https://perma.cc/BJV6-XV8D].

upon entering office President George W. Bush promptly made a formal announcement that he would never do so.[141]

Although Kyoto nevertheless finally entered into force,[142] negotiations soon began on a new treaty that the United States would accept;[143] indeed, without the participation of the world's highest historical emitter, an international climate treaty would be ineffective. The Paris Agreement—which effectively leaves the details of each country's climate responsibility to be decided by that country in its "Nationally Determined Contribution" (NDC)—is the result. Rather than recognizing that responsibility is in fact undifferentiated (and grossly so[144]) and aligning mandatory emission reduction obligations with that reality, the Paris Agreement obligates *all* countries to submit "pledges" specifying their plans for addressing climate change.[145] Although, as Melissa Durkee rightly points out, the NDC system might be characterized as "differentiated from the bottom up, according to

141. Julian Borger, *Bush Kills Global Warming Treaty*, GUARDIAN (Mar. 29, 2001), https://www.theguardian.com/environment/2001/mar/29/globalwarming.usnews [https://perma.cc/H7Q3-5ZLN].

142. *See* Kyoto Status of Ratification, *supra* note 138. Kyoto's entry into force was triggered by ratifications of a sufficient number of developed countries to account for 55 percent of global emissions. *See* Kyoto Protocol, *supra* note 136, art. 25. This made its entry into force very difficult without the United States, as it accounted for about 36 percent of global GHG emissions in 1990, and thus its participation was important as a practical as well as a symbolic matter. *See* European Commission Memo/04/43, Kyoto Protocol (Mar. 4, 2004). Eventually, through strong diplomatic efforts led by the European Union, countries supporting the treaty convinced Japan, Russia, and Australia to ratify, and Kyoto entered into force in 2005. DANIEL A. FARBER & CINNAMON P. CARLARNE, CLIMATE CHANGE LAW 61 (2018).

143. *See* Mohamed Adow, *The Climate Debt: What the West Owes the Rest*, FOREIGN AFFS. (May–June 2020), https://www.foreignaffairs.com/articles/world/2020-04-13/climate-debt [https://perma.cc/YJ57-3836].

144. See discussion of Jason Hickel's work *infra* Part IV.A.1; *cf.*, Farhana Sultana, *The Unbearable Heaviness of Climate Coloniality*, 99 POL. GEOGRAPHY 1, 4 (2022), ("[C]limate coloniality occurs where Eurocentric hegemony, neocolonialism, racial capitalism, uneven consumption, and military domination are co-constitutive of climate impacts experienced by variously racialized populations who are disproportionately made vulnerable and disposable.").

145. The Paris NDC system is the case example that Melissa Durkee relies on in describing what she astutely characterizes as an emerging "pledging world order." *See* Durkee, *supra* note 16, at 2–3, 13–14, 22–31. It is, she maintains, a prominent example of a new type of "treaty design choice." *See id.* at 10. This example is part of a larger global trend of the use of the pledging format as a public and private "ordering device." *See id.* at 37.

[the Parties'] own perceived 'common but differentiated responsibilities and respective capabilities,'"[146] the key point here is that states replaced a *legally binding* instantiation of the CBDR principle in Kyoto with an *undifferentiated* legal obligation to submit NDCs in the Paris Agreement.

The history of the UNFCCC thus shows an alarming lack of clarity about legal climate responsibility. Although there unquestionably remains a need to establish strong and effective laws and policies under the UNFCCC regime, that endeavor need not—and, I would argue, should not—be confined to UNFCCC processes. Indeed, these processes can be informed—and buttressed—by applying relevant non-UNFCCC sources of law to climate-disrupted realities. After all, many international legal obligations and domestic laws that support or enforce international obligations remain in force in a climate-disrupted world order. They just need to be applied in order to determine what, if anything, they require in light of climate-related facts.

Unlike international negotiations, judicial proceedings are well-suited for this purpose, as they are designed to determine questions of legal responsibility by applying laws to facts. The IPCC's reports and other climate science studies provide increasingly robust factual foundations for answering such questions. In an era of climate-disruption, legal "responsibility-differentiation" is emerging as a critical judicial role.

B. JUDICIAL "RESPONSIBILITY-DIFFERENTIATION"

As described in Part II, climate-accountability plaintiffs all rely on IPCC reports or other sources of climate science as evidence of violations of laws that have largely yet to be applied in the context of climate breakdown. In so doing, they are effectively using the facts of planetary limits and the catastrophic consequences of breaching them[147] to differentiate responsibility for climate breakdown and, thus, for taking remedial actions. The defendants—whether governmental or private actors—consistently respond that they cannot be assigned responsibility

146. Durkee, *supra* note 16, at 19–20.

147. *Cf.* Louis J. Kotzé, *Neubauer et al. versus Germany: Planetary Climate Litigation for the Anthropocene?*, 22 GERMAN L.J. 1423, 1428–37 (2021) (positing that a recent climate case decided by the German Constitutional Court suggests movement toward a "planetary perspective" in law that recognizes that human activity must respect "planetary boundaries").

given that climate threats and harms necessarily result from cumulative GHG emissions. Thus, a regular point of contention in the climate-accountability cases has been present throughout the UNFCCC negotiations: differentiated versus undifferentiated responsibility. Several notable recent decisions are illustrative of the debate and the import of having it resolved in a judicial venue.

In *Urgenda v. Netherlands* and *Neubauer v. Germany*,[148] the Netherlands Supreme Court and the German Constitutional Court, respectively, engaged deeply with IPCC reports in addressing the plaintiffs' challenges to the governments' climate policies on the ground that they were inadequate and thus violated fundamental human rights.[149] In their opinions, both courts provide clear summaries of an impressive amount of complex IPCC material that they then draw on in articulating the content of the governments legal responsibilities to respond to climate disruption.[150] In a decision issued in between these two decisions—*Milieudefensie v. Shell*—the Hague District Court undertook a similar analysis in a case brought by an environmental organization alleging that Shell's tort-based duty of care under the Dutch Civil Code included an obligation to reduce its emissions to align with the Paris Agreement's temperature goal.[151] In so doing, all three courts addressed the "differentiated responsibility" issue, as a principal part of both the governments' and Shell's defense was that their emissions were relatively

148. Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court], 1 BvR 2656/18, Mar. 24, 2021 (Ger.) [hereinafter *Neubauer*], https://www.bundesverfassungsgericht.de/SharedDocs/Downloads/EN/2021/03/rs20210324_1bvr265618en.pdf?__blob=publicationFile&v=5 [https://perma.cc/2585-2X3N].

149. In *Urgenda*, the plaintiffs relied on the rights to life and to private and family life in the European Convention on Human Rights. *See Urgenda*, *supra* note 66 and accompanying text. In *Neubauer*, the plaintiffs relied on several provisions in the German Constitution. *See Neubauer*, *supra* note 148, paras. 1, 60.

150. *See Neubauer*, *supra* note 148, paras. 16–50, 118–22, 156–65, 194, 198, 202; *Urgenda*, *supra* note 66, paras. 4, 7.2.5, 7.5.1. For a fascinating analysis of the way that the German Constitutional Court uses climate science in its reasoning, see Kotzé, *supra* note 147, which states, "[w]hile other courts have also relied on climate science to guide and bolster their arguments and to justify their decisions, the German Constitutional Court's engagement with climate science was exceptionally extensive and innovative." *Id.* at 1432.

151. *Milieudefensie*, *supra* note 102, paras. 4.4.26–.39.

small contributions to atmospheric GHG levels, and thus any action or inaction on their part was irrelevant. In short, as the Dutch government put it: "[t]he Netherlands cannot solve the global climate problem on its own."[152]

All three courts rejected this defense. In *Urgenda*, the Netherlands Supreme Court noted that the CBDR principle recognized in the Paris Agreement[153] entails a notion of "partial responsibility" that aligned with the customary international law principle that countries "must not cause each other harm" and "with what is adopted in national and international practice in the event of unlawful acts that give rise to only part of the cause of the damage."[154] Thus, the court reasoned:

> [T]he assertion that a country's own share in global greenhouse gas emissions is very small and that reducing emissions from one's own territory makes little difference on a global scale [cannot] be accepted as a defence. Indeed, [that] would mean that a country could easily evade its partial responsibility . . . . If, on the other hand, this defence is ruled out, each country can be effectively called to account for its share of emissions . . . .[155]

Both the *Milieudefensie* and *Neubauer* courts cited *Urgenda* in arriving at the same conclusion.[156] In so doing, all three courts determined the legally binding obligations of specific entities—obligations that the courts ascertained by applying long-standing international and domestic law to the threats presented by and harms incurred as a result of exceeding the limits of the global climate system. In *Urgenda* and *Milieudefensie*, the courts ordered the Dutch government and Shell, respectively, to reduce their GHG emissions by specific amounts.[157] In *Neubauer*, the plaintiffs had challenged the adequacy of the Federal Climate

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152. *Urgenda*, *supra* note 66, para. 3.4; *Neubauer*, *supra* note 148, para. 149; *Milieudefensie*, *supra* note 102, paras. 4.3.5, 4.4.31, 4.4.37, 4.4.49, 4.4.52.

153. *See supra* note 130 and accompanying text.

154. *Urgenda*, *supra* note 66, paras. 5.7.3, 5.7.5–.6.With respect to international law, the court relies on the UN Law Commission's Draft Articles on Responsibility of States for Internationally Wrongful Acts that were adopted by the General Assembly, and then noted that "[m]any countries have corresponding rules in their liability law system." *Id.* para. 5.7.6.

155. *Id.* paras. 5.7.7–.8.

156. *See Neubauer*, *supra* note 148, para. 203; *Milieudefensie*, *supra* note 102, para. 4.4.10.

157. *See supra* note 65 (stating *Urgenda* order); *Milieudefensie*, *supra* note 102, para. 5.3. Importantly, the *Milieudefensie* court ordered Shell to make the emission reductions across its entire global operations—and not merely those within the Netherlands. *See id.*

Change Act on a number of grounds, and, although the court rejected most of them, it struck down part of the Act as unconstitutional on the ground that its delay of significant reductions until after 2030 impermissibly infringed on the rights of the young plaintiffs, who would suffer disproportionately both from worsening climate impacts caused by continued emissions and from a higher burden of emission reductions.[158]

Responsibility-differentiation by courts across the world, by definition, will manifest differently depending on various factors, including the specifics of the case, the jurisdiction, the laws invoked, and the identity of the litigants. For example, as the *Leghari* court recognized, "[a]s Pakistan is not a major contributor to global warming it is actually a victim of climate change and requires immediate remedial adaptation measures to cope with the disruptive climatic patterns."[159] That, according to the

158. *See Neubauer*, *supra* note 148, paras. 142, 236–39, 242–66; *see also*, Helmut Phillip Aust, *Climate Protection Act Case*, 116 AM. J. INT'L L. 150 (2022) (providing a detailed analysis of the court's interpretation of the German Constitution as providing protections for future generations).

159. Order Sheet, Leghari v. Pakistan, W.P. No. 25501/2015 (Lahore High Court Sept. 9, 2015) (Pak.). Thus, while both *Urgenda* and *Leghari* involved allegations of rights violations (ECHR rights and constitutional rights, respectively), the bases of the plaintiffs' claims differed: inadequate mitigation in *Urgenda*, and inadequate adaptation in *Leghari*. Although the climate crisis threatens both countries, Pakistan is one of the most climate-precarious countries in the world. *See* DAVID ECKSTEIN ET AL., GLOBAL CLIMATE RISK INDEX 2021: WHO SUFFERS MOST FROM EXTREME WEATHER EVENTS? 13 (Jonanne Chapman-Rose & Janina Longwittz eds., 2021), https://www.germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_2.pdf [https://perma.cc/3YYU-FEAB] (ranking Pakistan the fifth most climate-vulnerable country in 2020 and the eighth in 2021). In comparison, the Netherlands is relatively "safe," not only because of its geophysical characteristics, but also, and in significant part, because it is much wealthier than Pakistan and unburdened by the astronomical levels of sovereign debt that deprive Pakistan and other nations of the Global South of their ability to cope with climate impacts. *See, e.g.*, Mia Mottley, *Barbados PM: Climate Change Requires a New Financial Architecture for Us All*, FIN. TIMES (June 14, 2022), https://www.ft.com/content/36fa2acc-9178-4f81-81a5-a1cc0a726989 [https://perma.cc/G6FZ-BPCX] ("My country, Barbados, is on th[e] frontline, where a storm can destroy 100 per cent of our national income in a few hours. . . . Climate-vulnerable countries need funds now to build defences."); Somini Sengupta, *How Debt and Climate Change Pose 'Systemic Risk' to World Economy*, N.Y. TIMES (Apr. 7, 2021), https://www.nytimes.com/2021/04/07/climate/debt-climate-change.html [https://perma.cc/V9MW-LMEH] (noting that "the debt that Belize owes its foreign creditors is equal to 85 percent of its national economy," and quoting its minister of state for finance, "How do we pursue climate action?").

court, meant that international and domestic constitutional laws required the government to take protective measures to protect Pakistanis.[160]

Undoubtedly, all four decisions are rather remarkable in the sense that they are among the first judicial decisions to deeply engage with climate science to discern whether international and domestic laws impose climate-related obligations on states and corporations. But, more importantly in considering the governance role of courts, the cases are quite ordinary when viewed from the perspective of what courts do: apply the law to facts. In the course of doing that, these courts developed the law, adapting it to a climate-disrupted world and differentiating legal responsibility for responding to a global problem. That a given defendant is not alone responsible and thus cannot alone solve that problem was not, according to these courts, a reason to do otherwise.

Other courts, in contrast, have dismissed cases in part on the ground that climate responsibility cannot be differentiated and thus that courts are the improper venue. In these cases, the courts have undertaken very thin analyses of the doctrines invoked and climate science, framing both in very general terms rather than engaging deeply with the implications of applying the laws to the facts of climate change detailed in IPCC reports and other sources of climate science, as the courts did in *Leghari*, *Urgenda*, *Milieudefensie*, and *Neubauer*.

In *Smith v. Fonterra Cooperative*, for example, the New Zealand Court of Appeals rejected the claim of the plaintiff that the

160. *See supra* note 159 and accompanying text. In this sense, a comparative view of *Leghari* with the Dutch and German cases provides a window into the deep inequities of the climate crisis that, as discussed above, the UNFCCC regime has at best failed to rectify and has arguably further entrenched by failing to implement *legal* differentiated responsibility and strong, reliable funding mechanisms. A comparative perspective also allows for "the potential to draw lessons from decisions in the Global South for case law development elsewhere." Peel & Lin, *supra* note 20, at 683. The Human Rights Committee used similar reasoning as the *Leghari* court in concluding that Australia violated various rights of the indigenous population of the Torres Strait Islands under the International Covenant on Civil and Political Rights by failing to adapt to the adverse impacts of climate change, including flooding, sea-level rise, and displacement. *See* U.N. Hum. Rts. Comm., Views adopted by the Committee under article 5(4) of the Optional Protocol, concerning communication No. 3624/2019, at paras. 8.12, 8.14, U.N. Doc. CCPR/C/135/D/3624/2019 (Sept. 22, 2022).

defendants—mining, steel, oil, and other high-emitting companies—had violated tort law by failing to control their emissions.[161] After making passing reference to the plaintiff's allegations "that the release of greenhouse gases by the respondents is human activity that has contributed and will continue to contribute to dangerous anthropogenic interference with the climate system and to the adverse effects of climate change,"[162] the court stated that "the magnitude of the crisis which is climate change . . . is quintessentially a matter that calls for a sophisticated regulatory response at a national level supported by international co-ordination," and that "no other tort claim recognised by the courts has involved a scenario in which every person in New Zealand—indeed, in the world—is . . . both responsible for causing the relevant harm, and the victim of that harm."[163] A handful of other cases have adopted similar lines of reasoning that, taken to their logical conclusion, suggest that courts have no role in cases addressing issues related to climate change.[164]

In March of 2022, the New Zealand Supreme Court granted the *Smith* plaintiff's motion for leave to appeal.[165] Regardless of the outcome in that jurisdiction at this point in time, however, all climate-accountability cases are part of a long-term process that decisions such as *Urgenda*, *Milieudefensie*, *Neubauer*, and *Leghari*, as well as those by the CHRP and other quasi-judicial bodies,[166] indicate will result in a judicial component to global climate governance that is critical to the legal articulation of the concept of differentiated responsibility. As climate science continues to grow and strengthen, it will also become increasingly commonplace in courts and legal arguments, and more laws will be applied to the reality of a climate-disrupted world in the process.

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161. Smith v. Fonterra [2021] NZCA 552, [2022] 2 NZLR 284 (CA) at [paras. 3–6, 16] (N.Z.). The plaintiff was an elder of two Māori iwi (tribes) and climate spokesperson of the Iwi Chairs Forum. *Id.* para. 3.

162. *Id.* para. 4.

163. *Id.* paras. 16, 18.

164. *See infra* notes 266–68 and accompanying text.

165. Smith v. Fonterra [2022] NZSC 35 (N.Z.). The court held oral arguments in August of 2022, and a decision is still pending as this Article goes to press. *See* Jane Standage et al., *What's Hot? Climate Change Litigation in New Zealand*, LEXOLOGY (Feb. 8, 2023), https://www.lexology.com/library/detail.aspx?g=e0f60019-1c33-458c-a097-e5501fab33b8 [https://perma.cc/73B9-6FWU].

166. *See supra* notes 87–90.

Of course, climate plaintiffs will not always win, and courts will not always be justified in their decisions. But that is simply part of the nature of bringing courts into governance—whether at the international or domestic level. A narrow view of case "wins" versus "losses" misses the transnational judicial institutional processes that the cases as a whole have initiated and continue to further develop. Just as one defendant cannot alone mitigate, adapt, or repair climate threats and harms, courts cannot alone solve the climate-governance problem. That problem, however, will never be addressed in a just manner without their participation in governance. Like any governance institution, courts have unique strengths that are not supposed to work in a vacuum; they work synergistically with other governance mechanisms *by design*.

Given the planetary nature of the climate crisis and climate science, coupled with the fact that increasingly more cases are filed in domestic and international courts in the Global South,[167] climate-accountability litigation has the potential not only to expand global climate governance by adding a judicial component but also to transform international and transnational judicial structures. Indeed, as experts on the Inter-American Court of Human Rights and the African international courts have cogently argued, because these courts have adeptly avoided the doctrinal compartmentalization that tends to dominate Western jurisprudence, their decisions will likely be defining in addressing cross-cutting problems such as climate change.[168] The international and domestic judicial and other governance activities in

167. *See supra* text accompanying notes 71–79; *see also* Louis J. Kotzé & Anél du Plessis, *Putting Africa on the Stand: A Bird's Eye View of Climate Change Litigation on the Continent*, 50 ENV'T L. 615, 628–57 (2020) (providing a close examination of major climate cases brought in South Africa, Nigeria, and Uganda); Peel & Lin, *supra* note 20, at 701 ("[P]rovid[ing] a comprehensive examination of cases in the 'Global South docket.'").

168. *See, e.g.*, James Thuo Gathii, *The Promise of International Law: A Third World View*, 36 AM. U. INT'L L. REV. 377, 390–91 (2021) (explaining how Africa's economic courts "see[] the environment as an integral part of the international legal framework rather than treating the environment as a specialized or self-contained regime disconnected from the rest of international law," and noting that this "is an important reframing and insight especially in light of climate crisis concerns"); Auz & Viveros-Uehara, *supra* note 92 (predicting that the Inter-American Court of Human Rights's (IACtHR) advisory opinion on state obligations related to climate change will be distinctive in significant ways from the opinions on the same subject by the ICJ and the International Tribunal for

these regions are thus poised to be leading contributors to international law and governance in climate and other areas of critical global importance.[169] These are the processes that climate-accountability litigation has started. In the final Part, I elaborate further on the judicial governance role of responsibility-differentiation and the challenges and opportunities that it presents by setting out a typology of its most important functions followed by several recommendations for how it can best serve them going forward.

IV. CLIMATE-ACCOUNTABILITY LITIGATION AND JUDICIAL RESPONSIBILITY-DIFFERENTIATION: A TYPOLOGY OF POTENTIAL FUNCTIONS AND RECOMMENDATIONS

As the literature on courts discussed in Part I makes clear, the roles of courts in international law and governance matters, and their roles have mattered increasingly more as complex global problems requiring international, transnational, and global responses have multiplied. The first three functions in this typology are based on the main functions of adjudicatory bodies that are the focus of that scholarship: (1) developing in-

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the Law of the Sea because "[t]he IACtHR's expansive interpretation of civil and political rights, generated through a relational process of understanding the socio-ecological context of subaltern actors . . . marks a different scenario vis-à-vis this court's counterparts"); *see also* Kotzé & du Plessis, *supra* note 167, at 617 (noting that the African Commission on Human and Peoples' Rights "was the first judicial forum globally to pronounce, in detail, a regional right to a healthy environment and related rights").

169. *Cf.* Gathii, *supra* note 168, at 387 (criticizing the tendency of many Western legal scholars and practitioners to "overlook[] how courts like the African Court on Human and Peoples' Rights actively participate in the development of international law" and "privilege[] both the UN and European human rights systems and presume[] that the African system should be dependent on these systems"); Kotzé & du Plessis, *supra* note 167, at 663 ("Climate change litigation in Africa has commenced, however tentatively, and we predict that it might become more frequent as people increasingly realize that the socio-ecological impacts of climate change can be influenced by courts in alternative—and potentially, far more effective—sustainable ways."); Peel & Lin, *supra* note 20, at 683 ("Litigants and judges alike in Global North jurisdictions might appeal to the Global South jurisprudence to support their arguments and judgments. Equally, advocates framing local claims might draw inspiration from other successful Global South cases, such as the *Leghari* decision." (footnote omitted)).

ternational law or domestic law with significance to international or transnational law; (2) providing remedies; and (3) creating transjudicial nexuses. I update each to demonstrate its significance applied in the context of global climate governance. I add a fourth that is critical in the context of climate and may also have implications for global governance in other areas where misinformation and disinformation present significant threats: namely, judicial recognition of climate science as fact.

I note that this typology is not meant to be exhaustive or final. It is offered as an analytical tool for conceptualizing the broader global governance role served by courts hearing climate-accountability cases, for situating this role in the ongoing discussions of the roles of courts in international law and governance, and for assessing individual decisions and arguments from critical global perspectives. Climate-accountability litigation continues to evolve and, if trends continue, will become increasingly prevalent and global. The typology may thus require adjustment as the landscape continues to change as more decisions are issued, cases filed,[170] laws invoked, arguments made, and scientific research that can serve as evidence published.

Courts can serve each function well or poorly. After explaining each function, I thus offer recommendations for ensuring that the opportunity presented by expanding global climate governance to include a judicial component is not missed.

A. ADAPTING LAWS TO A CLIMATE-DISRUPTED WORLD

Differentiating a defendant's climate responsibility requires an important normative and legal shift to specific obligations—and, thus, potentially violations. This is long overdue. As Lisa Heinzerling wrote over a decade ago in an article on the impacts of the climate crisis on human health and well-being: "[k]nowledge that death and suffering will result from our actions leads uncontroversially to a moral obligation to change our behavior."[171] That also leads, in some cases, to *legal* obligations to change behavior and to pay damages.

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170. Adjustment may also be necessary as more case filings are reported and publicized, particularly those from the Global South. Although reporting on filings in the Global South has improved, gaps remain. *See* Setzer & Higham, *Litigation Snapshot 2022*, *supra* note 62, at 7, 10.

171. Lisa Heinzerling, *Climate Change, Human Health, and the Post-Cautionary Principle*, 96 GEO. L.J. 445, 460 (2008).

Climate-accountability cases require courts to determine the meaning of many international and domestic laws when applied to the science of climate disruption and its harms. Although many of the arguments and decisions in climate-accountability litigation incorporate provisions of the UNFCCC and the Paris Agreement, the sources of liability thus far are international and domestic laws that have largely yet to be applied in the climate context. Arguments and determinations about whether and how these laws should be applied are thus part of adapting laws to the facts of a climate-disrupted world. These cases involve many important legal issues with significant implications for international law and global governance, including those related to state sovereignty, self-determination, state and corporate responsibility, extraterritoriality, and the nature of legal obligations related to individual and group rights, future generations, the environment, and ecosystems.[172]

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172. The advisory opinion requests discussed *supra* text accompanying notes 92–93 will alone require three international courts to consider many of these issues. Further, as noted *supra* note 105 and accompanying text, many cases have been brought by young people on behalf of themselves and future generations. *See generally* Lydia Slobodian, *Defending the Future: Intergenerational Equity in Climate Litigation*, 32 GEO. ENV'T L. REV. 569 (2020) (examining the import of climate cases invoking intergenerational equity and providing several examples of the legal theories invoked in various cases). Plaintiffs in these cases seek to bring to bear the great intergenerational injustice of the climate crisis: young people and future generations bear no responsibility for the historical emissions that will drive the climate impacts they will face, yet those impacts will be exponentially more severe than those experienced by past and present adult generations that have driven dangerous climate breakdown. *See* Ayesha Tandon, *Today's Youth Will Face 'Unmatched' Climate Extremes Compared to Older Generations*, CARBON BRIEF (Sept. 27, 2021), https://www.carbonbrief.org/todays-youth-will-face-unmatched-climate-extremes-compared-to-older-generations [https://perma.cc/5FL4-K9U4].

Additionally, increasingly more cases assert violations of both rights of nature and human rights. *See* Gómez-Betancur, *supra* note 77, at 65–66 (discussing Colombian case); Cardona, *supra* note 78 (discussing Ecuadorian case). In a communication filed with the International Criminal Court (ICC), a nongovernmental organization shows the inextricability of harms to the Amazon rainforest, to the Indigenous communities who inhabit and defend it, and ultimately to all of humanity in arguing that the ICC should initiate an investigation of the Bolsanaro administration's alleged commission of crimes against humanity by "knowingly facilitat[ing] and promot[ing]" a "widespread attack upon [the Amazon Biome] and those who defend and depend on it," which "represents a clear and extant threat to humanity itself." Maud Sarlième et al., *Communication Under Article 15 of the Rome Statute of the International Criminal Court*

Needless to say, the stakes for the ways in which laws are developed are quite high. In its Sixth Assessment Report, the IPCC warned of the dangers of what it termed "maladaptation" to climate harms and threats, such as flood protections that encourage further development in vulnerable low-lying coastal areas and that harm ecosystems that serve as vital carbon sinks.[173] Just like infrastructure, laws can be maladapted to a climate-disrupted world.

On the one hand, the expansion of global climate law beyond the UNFCCC regime to include human rights and other legal protections has the potential to significantly improve global climate governance. But on the other hand, it could further entrench pathologies in the global political economy of which the climate crisis is a symptom, and which, as discussed above, are in some ways manifested in the UNFCCC system.[174] Thus, although in many cases it may make sense to incorporate aspects of the UNFCCC system into legal arguments about the climate-related content of obligations in other laws, that system should not be understood as limiting. The goal can, and should, be securing greater and more globally just protections than those currently provided for within the UNFCCC regime. Some specific suggestions for how to do this and thereby guard against legal maladaptation in climate-accountability cases follow.

1. Fair Differentiated Share, Not (Un)Equal Undifferentiated Share

As noted above, although the Paris Agreement references the CBDR principle,[175] the Agreement does not operationalize

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Regarding the Commission of Crimes Against Humanity Against Environmental Dependents and Defenders in the Brazilian Legal Amazon from January 2019 to Present, ALLRISE 5 (2021), https://static.poder360.com.br/2021/10/Bolsonaro-Haia-crimes-ambientais-out-2021.pdf [https://perma.cc/HTE3-27S9].

173. Hans Pörtner et al., *Technical Summary*, *in* IPCC, AR6 WGII REPORT, *supra* note 129, at 85–86. The IPCC defines "maladaptation" as "adaptation that increases climate risk or creates new risks in other systems or for other actors." Brian O'Neill et al., *Key Risks Across Sectors and Regions*, *in* IPCC, AR6 WGII REPORT, *supra* note 129, at 2415. It distinguishes maladaptation "from 'failed' or 'unsuccessful' adaptation," which is "a failed adaptation initiative not producing any significant detrimental effect." Mark New et al., *Decision-Making Options for Managing Risks*, *in* IPCC, AR6 WGII REPORT, *supra* note 129, at 2539, 2600–02 (internal citation omitted).

174. *See supra* Part III.A.

175. *See supra* note 127.

CBDR in the parties' mitigation obligations as the Kyoto Protocol did. Rather, the Paris Agreement adopts a bottom-up approach under which each country "determine[s]" its mitigation contribution to the global temperature goal.[176] As a result of that change, the IPCC now provides only *global* deadlines and numbers for how to achieve temperature targets, such as net zero carbon emissions by 2050 to limit warming to 1.5°C.[177] The IPCC no longer provides information about ways in which states might distribute the burden of meeting those deadlines, as it did when the Kyoto Protocol was the principal climate treaty. This presents both a potential pitfall and an opportunity for climate-accountability cases against wealthy high-emitting countries.

Not long after the Netherlands Supreme Court issued its landmark opinion in *Urgenda*, one of the attorneys for the Urgenda Foundation explained the scientific evidentiary gap that resulted from the shift from Kyoto to Paris:

> An evaluation of effort-sharing models that the IPCC included in its report in 2007 was instrumental to Urgenda's successful arguments in court. In the Paris agreement of 2015, countries created a framework in which each would determine its own contributions rather than negotiate reductions up front, and so the scientific community has largely disengaged from effort-sharing models, and many are outdated.[178]

As "[a]ssessing a 'fair share' of reductions in the context of litigation is as much a legal issue as a scientific one," he stated that "courts need researchers to translate benchmarks for global emissions into fair and equitable targets for individual countries."[179] Fortunately, it appears that researchers have begun to fill this gap.

I suggest taking as a starting point the approach advanced by economic anthropologist Jason Hickel, who quantified national responsibility for climate-related damages in terms of contribution to cumulative CO_2 emissions in excess of per-capita based "fair shares" of the safe global carbon budget of 350

176. *See supra* text accompanying note 128.

177. *See* IPCC, *Summary for Policymakers*, *in* SPECIAL 1.5°C REPORT SPM, *supra* note 129, at 12.

178. Dennis van Berkel, *How Scientists Can Help Lawyers on Climate Action*, NATURE (Apr. 20, 2020), https://www.nature.com/articles/d41586-020-01150-w [https://perma.cc/8TAF-QMB2].

179. *Id.*

ppm,[180] the science-based threshold for dangerous climate breakdown.[181] Hickel found that the United States is "responsible for [40] percent of climate breakdown," the European Union for 29 percent, the rest of Europe for 13percent, the rest of the Global North for 10 percent, and the *entire* Global South for a mere *8* percent.[182] Such a framework makes clear that under a fair-shares approach, countries of the Global North should be responsible for achieving net-zero emissions considerably faster than those of the Global South, and provides a potential starting basis for determining an individual country's fair share of a global emission-reduction mandate.[183]

Applying human rights and other legal protections to this sort of evidence in cases against high-emitting wealthy nations of the Global North could provide a powerful tool for making global climate governance more just.[184]

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180. "Ppm" stands for "parts per million." In the case of GHG emissions, it "refers to the number of carbon dioxide molecules per million molecules of dry air." *Global Climate Change: Vital Signs of the Planet—Carbon Dioxide*, NASA, https://climate.nasa.gov/vital-signs/carbon-dioxide [https://perma.cc/5TX2-RBAH].

181. Jason Hickel, *Quantifying National Responsibility for Climate Breakdown: An Equality-Based Attribution Approach for Carbon Dioxide Emissions in Excess of the Planetary Boundary*, 4 LANCET PLANET HEALTH 399, 401 (2020), https://www.thelancet.com/action/showPdf?pii=S2542-5196%2820%2930196-0 [https://perma.cc/95GY-F6A9].

182. *Id.* at 402–03.

183. *Id.* The framework's focus on emissions in excess of safe levels also has implications for climate damages. *See infra* Part IV.B. As Hickel points out, under his analysis a handful of wealthy nations are "climate debtors," and "[t]he majority of the world's countries . . . are in climate credit." Hickel, *supra* note 181, at 402.

184. The most important of such cases would be those brought against the United States given its status as the highest historical emitter and, relatedly, its considerable responsibility for the failure of the UNFCCC to achieve its objective of "prevent[ing] dangerous anthropogenic interference with the climate system." UNFCCC, *supra* note 2, art. 2. There have been a few such cases so far. In addition to those filed with the Inter-American Commission on Human Rights and U.N. Special Rapporteurs mentioned *supra*, notes 83 and 88, one has been filed in U.S. federal court: *Juliana v. United States*, 217 F. Supp. 3d 1224 (D. Or. 2016). The government has thus far successfully prevented it from going to trial. For background on the case and its current status, see *Juliana v. United States*, OUR CHILDREN'S TRUST, https://www.ourchildrenstrust.org/juliana-v-us [https://perma.cc/2T4R-9PHU]. For an examination of the significance of the case from a global perspective, see Sokol, *Forging Global Rule of Law*, *supra* note 103, at 240–49.

2. Use Litigation to Forge Accountability for Militaries' Climate Pollution and Plug the Paris "Military Emissions" Gap

A significant proportion of many countries' emissions are those of their military, and yet countries are not obligated to report them under the Paris Agreement. Because of U.S. pressure during the Kyoto negotiations, the Agreement exempts military emissions from countries' GHG reporting obligations.[185] The U.S. State Department pushed for this so-called "national security" exemption because of strong opposition to the treaty by the Department of Defense.[186] The Pentagon's stance is not surprising given that recent studies have found that if the U.S. military were a country, it would be the 47th largest emitter and that its emissions are equivalent to as many as 140 countries.[187] Although reporting of military emissions was made voluntary under the Paris Agreement,[188] that is far from sufficient to close

185. Sonner Kehrt, *"We Must Do Our Part to Mitigate Climate Change"—The Military's Pollution Problem*, WAR HORSE (Jan. 6, 2022), https://thewarhorse.org/us-military-has-a-pollution-problem-but-no-accountability [https://perma.cc/TF7L-WJ4X].

186. George Washington University's National Security Archive has posted a collection of declassified documents showing that "Pentagon demands for military exemptions during the 1997 Kyoto climate negotiations posed a substantial challenge for the Clinton administration both internally and with American allies." *National Security and Climate Change: Behind the U.S. Pursuit of Military Exemptions to the Kyoto Protocol*, NAT'L SEC. ARCHIVE (Jan. 20, 2022), https://nsarchive.gwu.edu/briefing-book/environmental-diplomacy/2022-01-20/national-security-and-climate-change-behind-us [https://perma.cc/2Y4E-ELYL].

187. *See* Benjamin Neimark et al., *US Military Is Bigger Polluter Than as Many as 140 Countries—Shrinking This War Machine Is a Must*, CONVERSATION (June 24, 2019), https://theconversation.com/us-military-is-a-bigger-polluter-than-as-many-as-140-countries-shrinking-this-war-machine-is-a-must-119269 [https://perma.cc/AA2X-NZ8L]. Another recent study determined that the U.S. Department of Defense "is the world's largest institutional user of petroleum and correspondingly, the single largest institutional producer of [GHGs] in the world." Neta C. Crawford, *Pentagon Fuel Use, Climate Change, and the Costs of War*, WATSON INST. 2 (revised Nov. 13, 2019), https://watson.brown.edu/costsofwar/files/cow/imce/papers/Pentagon%20Fuel%20Use%2C%20Climate%20Change%20and%20the%20Costs%20of%20War%20Revised%20November%202019%20Crawford.pdf [https://perma.cc/T8AD-ZUQG].

188. *A Framework for Military Greenhouse Gas Emissions Reporting: Military Emissions Gap—June 2022*, CONFLICT & ENV'T OBSERVATORY 1, 4 (2022), https://ceobs.org/wp-content/uploads/2022/06/CEOBS_A_framework_for_military_GHG_emissions_reporting.pdf [https://perma.cc/A75C-33TE].

this dangerous gap given that militaries are such large emitters.[189]

Litigators seeking injunctive relief should thus argue that countries must include their military emissions in their GHG inventories that they are obligated to reduce, and those seeking damages should incorporate available data on military emissions into studies attributing climate harms to the country's emissions.[190] Further, litigators should argue that countries must include military emissions from extraterritorial as well as domestic operations and from the operation of militaries' "massive, global supply chains."[191]

3. Seek Best Science- and Justice-Based Global Climate Targets

Many climate-accountability cases, including *Urgenda* and *Neubauer*, incorporate the Paris Agreement's global temperature goal of "[h]olding the increase in the global average temperature to well below 2°C . . . and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels."[192] As discussed above, Hickel's "fair shares" analysis holds countries responsible for their emissions in excess of their per capita share of a 350-ppm limit deemed to be safe. That limit, which is equivalent to about 1°C,[193] was advanced a quarter of a century ago by Dr. James Hansen and other climate scientists. In a 2008 paper, they concluded that a 350-ppm maximum is necessary "[i]f humanity wishes to preserve a planet similar to that on which

189. For those countries that do report military emissions under the Paris regime, researchers have found that "[u]nder-reporting is the norm, as is data that is inaccessible, or aggregated with non-military sources." Doug Weir et al., *How the World's Militaries Hide Their Huge Carbon Emissions*, CONVERSATION (Nov. 9, 2021), https://theconversation.com/how-the-worlds-militaries-hide-their-huge-carbon-emissions-171466 [https://perma.cc/K2SL-A5GJ].

190. Relief in the form of damages and the importance of attribution studies are the focus of the second function in this typology and are discussed *infra* Part IV.B.

191. Weir et al., *supra* note 189.

192. *See* Paris Agreement, *supra* note 15, art. 2(1)(a).

193. James Hansen et al., *Young People's Burden: Requirement of Negative CO_2 Emissions*, 8 EARTH SYS. DYNAMICS 577, 578 (2017), https://esd.copernicus.org/articles/8/577/2017/esd-8-577-2017.pdf [https://perma.cc/MNU3-B9T5].

civilization developed and to which life on Earth is adapted."[194] Clearly, they were right, as the current 1.2°C level of warming[195] has already taken humans and many other species to the brink of their adaptive capacities.[196]

Hansen's work was among the scientific studies cited by the Alliance of Small Island States (AOSIS) in support of limiting global temperatures to "*well below 1.5°C* above preindustrial levels" in the Paris Agreement.[197] To achieve this, AOSIS proposed that "the avoidance of further negative impacts on small island developing States . . . be one of the key benchmarks for assessing the adequacy of any global long-term emission reduction goal

194. James Hansen et al., *Target Atmospheric CO_2: Where Should Humanity Aim?*, 2 OPEN ATMOSPHERIC SCI. J. 217, 217 (2008), https://pubs.giss.nasa.gov/docs/2008/2008_Hansen_ha00410c.pdf [https://perma.cc/PB2K-7UB7].

195. *Global Temperature Trend Monitor*, EUR. COMM'N CTR. FOR MEDIUM-RANGE WEATHER FORECASTS (Feb. 22, 2021), https://cds.climate.copernicus.eu/cdsapp#!/software/app-c3s-global-temperature-trend-monitor?tab=app [https://perma.cc/W25S-LJYT] (providing up-to-date data on current global temperatures and projections of future warming based on current trends, and stating that global temperatures "reached an estimated 1.22°C in June 2023").

196. *See, e.g.*, Oliver Milman et al., *The Climate Disaster Is Here*, GUARDIAN (Oct. 14, 2021), https://www.theguardian.com/environment/ng-interactive/2021/oct/14/climate-change-happening-now-stats-graphs-maps-cop26 [https://perma.cc/UJR2-XAKS] (noting that "the single digit (global temperature) numbers obscure huge ramifications at stake" and quoting climate scientist Katherine Hayhoe as stating, "[w]e have built a civilization based on a world that doesn't exist anymore"); INTERGOV'L PANEL ON BIODIVERSITY AND ECOSYSTEM SERVS., THE GLOBAL ASSESSMENT REPORT ON BIODIVERSITY AND ECOSYSTEM SERVICES: SUMMARY FOR POLICYMAKERS 11–12 (2019) (finding that, as a result of climate breakdown and other human actions, "[a]n average of around 25 per cent of species in assessed animal and plant groups are threatened . . . suggesting that around 1 million species already face extinction").

197. Conference of the Parties of the United Nations Framework Convention on Climate Change, Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol, U.N. Doc. FCCC/KP/AWG/2009/MISC.1/Add.1 (Mar. 25 2009), at 3 [hereinafter *Submission from Grenada on Behalf of AOSIS*] (emphasis added) (citing, *inter alia*, Hansen et al., *supra* note 194).

In its 2018 *Special Report on 1.5°C Global Warming*, the IPCC compared the projected impacts of 1.5°C warming with those of 2.0°C. Although it determined that under all metrics, 1.5°C is much better than 2.0°C, it did *not* determine that 1.5°C is *safe*. Far from it: "[s]ome vulnerable regions, including small islands and Least Developed Countries, are projected to experience high multiple interrelated climate risks even at global warming of 1.5°C." IPCC SPECIAL 1.5°C REPORT SPM, *supra* note 129, at 10.

and for gauging the necessary scale of emission reductions to be achieved by [developed country] Parties . . . ."[198]

Although the proper interpretation of the temperature goal stated in the Paris Agreement is subject to debate,[199] it does not have the clear "well below 1.5℃" language that AOSIS advocated.[200] The advantage to litigation based on other laws, however, is that it need not adhere to unsafe temperature goals, even if codified in the Paris Agreement. Plaintiffs can—and should—instead use well-established scientific evidence to present powerful arguments that human rights, constitutional, and other legal protections require safe climate limits as defined by AOSIS decades ago.[201] This applies whether the relief sought is mitigation or reparations.

4. Frame Fossil Fuels as the Legal Problem, Not Just Emissions

Even though fossil fuels are the primary cause of climate disruption, they are not mentioned in the Paris Agreement. Indeed, it was not until 2021 that fossil fuels were mentioned even in a UNFCCC conference decision.[202] Further, while the U.N. Environment Programme (UNEP) has been publishing "Emission Gap" reports evaluating the consistency of countries' planned emission reductions with global climate goals since 2010,[203] it was not until 2019 that the UNEP also began publishing "Production Gap" reports assessing countries' planned fossil

198. *Submission from Grenada on Behalf of AOSIS*, *supra* note 197, at 3.

199. *See* Joeri Rogelj & Carl-Friedrich Schleussner, *Interpreting the Paris Agreement's 1.5C Temperature Limit*, CARBONBRIEF (Oct. 10, 2017), https://www.carbonbrief.org/guest-post-interpreting-paris-agreements-1-point-5-c-temperature-limit [https://perma.cc/59V5-SN5P].

200. *Id.*

201. This is what the plaintiffs did in *Juliana v. United States* in arguing that the Due Process Clause of the U.S. Constitution embodies a right to a "climate system capable of sustaining human life." First Amended Complaint at ¶ 12, *Juliana v. United States*, No. 6:15-cv-01517-TC (D. Or. Sept. 10, 2015).

202. *See* Jeff Brady & Lauren Sommer, *In a First, U.N. Climate Agreement Could Include the Words 'Coal' and 'Fossil Fuels*,*'* NPR (Nov. 12, 2021), https://www.npr.org/2021/11/12/1055055724/in-a-first-u-n-climate-agreement-could-include-the-words-coal-and-fossil-fuels [https://perma.cc/9SB8-6XH4].

203. *See The Emissions Gap Report: Are the Copenhagen Accord Pledges Sufficient to Limit Global Warming to 2° C or 1.5° C?*, UNITED NATIONS ENV'T PROGRAMME (2010), https://wedocs.unep.org/bitstream/handle/20.500.11822/7929/-The_emissions_gap_report_are_the_Copenhagen_accord_pledges_sufficient_

fuel production.[204] The risk that this primary focus on emissions presents—and that has manifested—is that countries and companies will engineer their net-zero *emission* plans in ways that permit them to continue to expand fossil fuel extraction and production by delaying emission reductions and instead relying on unproven removal technologies and questionable carbon offsets.[205]

Such delay and heavy reliance on removal or offsetting not only increases the likelihood of a failure to achieve the net-zero goal. Because continued emissions mean continued warming, it increases the likelihood of reaching catastrophic "tipping points"—that is, changes in the state of Earth systems, such as a breaking off of portions of melting Antarctic ice sheets that will inevitably lead to significant sea-level rise.[206] The possibility of

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to_limit_global_warming_to_2c_or_15c-2010TheEmissionsGapReport_2010.pdf.pdf?sequence=3&isAllowed=y [https://perma.cc/CZ44-DNF9]. The most recent report was published in 2021. *The Production Gap*, UNITED NATIONS ENV'T PROGRAMME (2021), https://productiongap.org/wp-content/uploads/2021/11/PGR2021_web_rev.pdf [https://perma.cc/GD7Z-WY3Y].

204. *The Production Gap: The Discrepancy Between Countries' Planned Fossil Fuel Production and Global Production Levels Consistent with Limiting Warming to 1.5°C or 2°C*, UNITED NATIONS ENV'T PROGRAMME (2019), https://www.unep.org/resources/report/production-gap-report-2019 [https://perma.cc/Y3JL-BSZS].

205. *See* Sam Fankhauser et al., *The Meaning of Net Zero and How to Get It Right*, 12 NATURE CLIMATE CHANGE 15, 17–18 (Jan. 2022), https://www.nature.com/articles/s41558-021-01245-w.pdf [https://perma.cc/Q3P6-9WCK] (highlighting these and other dangers of leeway in structuring "net zero" goals and calling for regulation); *see also* IPCC SPECIAL 1.5°C REPORT SPM, *supra* note 129, at 18 ("The lower the emissions in 2030, the lower the challenge in limiting global warming to 1.5°C after 2030 . . . . The challenges from delayed actions to reduce greenhouse gas emissions include the risk of cost escalation, lock-in in carbon-emitting infrastructure, stranded assets, and reduced flexibility in future response options in the medium to long term . . . .").

The problem of a myopic focus on emissions was again brought into sharp relief by the refusal of many petrostates to agree to language in the 2022 decision of the 27th Conference of the Parties calling for a phase down of all fossil fuels. "Speaking on behalf of the Arab Group, Saudi Arabia's lead negotiator . . . told the plenary that the [UNFCCC] 'needs to address emissions and not the origins of those emissions.'" Joe Lo & Chloé Farand, *Late-Night Fossil Fuel Fight Leaves Bitter Taste After Cop27*, CLIMATE HOME NEWS (Nov. 24, 2022) https://www.climatechangenews.com/2022/11/24/late-night-fossil-fuel-fight-leaves-bitter-taste-after-cop27 [https://perma.cc/B7QZ-YD84].

206. *See* Robert McSweeney, *Explainer: Nine 'Tipping Points' That Could Be Triggered by Climate Change*, CARBONBRIEF (Feb. 10, 2020), https://www.carbonbrief.org/explainer-nine-tipping-points-that-could-be-triggered-by

tipping points played prominently in the German Constitutional Court's reasoning for its conclusion in *Neubauer* that the lack of near-term reduction targets in the Federal Climate Change Act rendered it partially unconstitutional.[207] Such arguments that constitutional and other legal protections mandate near-term reductions are certainly important, but they do not directly address the production gap in current climate governance. Many climate-accountability cases do, however: those that challenge governmental support of fossil fuels in many forms, such as permitting, leases, and subsidies. Many such cases have been brought based on procedural laws such as the U.S. National Environmental Policy Act,[208] and in more recent years there have been an increasing number of filings challenging fossil fuels at the source based on constitutional or other rights-based laws.

Most of the rights-based cases targeting production that have been brought so far are from the Global South.[209] One of particular significance that is illustrative of their potential power was filed by two Guyanese citizens—a university professor and an Indigenous youth—in May of 2021 against the government arguing that its grant of an oil exploration license to ExxonMobil violates their and future generations' constitutional rights to a healthy environment and to sustainable development.[210] Exxon's development in Guyana is its biggest next to

-climate-change [https://perma.cc/9352-CFC2]. According to climate models, "even a partial loss of [the West Antarctic Ice Sheet] would be enough to change coastlines around the world dramatically." *Id.*

207. *See Neubauer*, *supra* note 148, paras. 21, 161, 211.

208. *See generally, e.g.*, Michael Burger & Jessica Wentz, *Evaluating the Effects of Fossil Fuel Supply Projects on Greenhouse Gas Emissions and Climate Change Under NEPA*, 44 WM. & MARY ENV'T L. & POL'Y REV. 423 (2020) (discussing many cases challenging fossil fuel projects on federal lands on the ground that agencies failed to adequately consider climate impacts under the National Environmental Policy Act).

209. *See* Setzer & Higham, *Litigation Snapshot 2022*, *supra* note 62, at 31–32. *Juliana v. United States* is also a rights-based case challenging the U.S. government's support of fossil fuels. *See supra* note 184; Sokol, *Forging Global Rule of Law*, *supra* note 103, at 241–42.

210. Dharna Noor, *The First Constitutional Fight over Oil Drilling in the Caribbean Ramps up in Guyana*, GIZMODO (June 2, 2021), https://gizmodo.com/the-first-constitutional-fight-over-oil-drilling-in-the-1846944998 [https://perma.cc/58CH-YPJU].

that in the Permian Basin,[211] and as a result of the company's offshore exploration, Guyana's seas now account for a third of the crude oil reserves in the world.[212] Importantly, Guyana had never produced oil before Exxon began drilling there in 2015,[213] and the country—at least for now—is a carbon sink.[214] Thus, as the lead attorney for the plaintiffs in the suit pointed out, "Guyana's petroleum production is a potential . . . carbon bomb, putting [the] Guyana [suit] at the forefront of the fight to save the planet from oil and gas."[215]

Such cases challenging production fill a critical gap and should be supported, publicized more widely, cited, and seen as models for future cases and for how they ultimately challenge the heart of the climate problem: the political economy of fossil

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211. *Id.*; *see also* Sabrina Valle, *Exxon Makes Three New Oil Discoveries in Guyana and Boosts Reserves*, REUTERS (Apr. 26, 2022), https://www.reuters.com/business/energy/exxon-makes-three-new-discoveries-guyana-increases-oil-reserves-2022-04-26 [https://perma.cc/8BWV-Y78F] ("Guyana has emerged as a key source for Exxon's future production, with 31 oil discoveries in its giant Stabroek block so far. It and partners say they plan to pump 1.2 million barrels of oil and gas per day from the [latest] block by 2027."); *Exxon's Guyana, Permian Basin Assets Worth More than Its Market Capitalization*, OILNOW (Mar. 12, 2021), https://oilnow.gy/featured/exxons-guyana-permian-basin-assets-worth-more-than-its-market-capitalization [https://perma.cc/D7LJ-M6CN] (detailing Exxon's Guyana projects and expected revenue).

212. Sabrina Valle, *Exxon Accelerates Production in Guyana, Makes Two New Discoveries*, REUTERS (July 26, 2022), https://www.reuters.com/business/energy/exxon-accelerates-production-guyana-makes-two-new-discoveries-2022-07-26 [https://perma.cc/6Q5J-GY7Q].

213. Clifford Krauss, *The $20 Billion Question for Guyana*, N.Y. TIMES (July 20, 2018), https://www.nytimes.com/2018/07/20/business/energy-environment/the-20-billion-question-for-guyana.html [https://perma.cc/YJQ2-76DU]; *Guyana Project Overview*, EXXONMOBIL (Oct. 1, 2020), https://corporate.exxonmobil.com/Locations/Guyana/Guyana-project-overview [https://perma.cc/MLR7-H5RU] Exxon began exploration in Guyana in 2008. *Guyana Project Overview*, *supra.*

214. Camila Domonoske & Ryan Kellman, *Guyana Is a Poor Country That Was a Green Champion. Then Exxon Discovered Oil.*, NPR (Nov. 7, 2021), https://www.npr.org/2021/11/07/1051892092/guyana-climate-change-exxon-co26 [https://perma.cc/RU2S-8NG4].

215. Press Release, Ctr. for Int'l Env't L., Guyanese Citizens File Climate Case Claiming Massive Offshore Oil Project Is Unconstitutional (May 21, 2021), https://www.ciel.org/news/guyana-consitutional-court-case-oil-and-gas [https://perma.cc/5FP5-K9WS].

fuels.[216] Additionally, cases that challenge governments' broader climate policies such as *Neubauer* and *Urgenda* should incorporate arguments that legal protections require that governments' plans include specific goals for the phaseout of fossil fuel production. There is a growing body of evidence to support such claims showing that supply-side measures are an essential component of effective climate policy.[217]

All the climate-accountability cases as I have defined them will necessarily serve this adaptation function. The existence and degree of prominence of each of the remaining functions will vary from case to case.

B. NAMING AND PROVIDING REDRESS FOR CLIMATE DAMAGES

As highlighted in the literature on the roles of courts in international law and governance discussed in Part I, judicial institutions are critical to ensuring that adequate remedies are available for legal violations. Although plaintiffs have filed several cases seeking damages, the decisions thus far on the merits have been in cases seeking injunctive relief, such as *Leghari*, *Urgenda*, *Milieudefensie*, *Neubauer*, and *Smith*.[218]

Within given cases, damages awards serve to provide victims of violations with compensation and dignity. More broadly, damages are an important part of upholding the rule of law and thus deterring future violations. As two government officials of low-lying island states have put it, "[w]e need to end the mismatch between those who gain and those who lose. This is what

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216. *See generally* Maria M. Balmaceda, *Differentiation, Materiality, and Power: Towards a Political Economy of Fossil Fuels*, 39 ENERGY RES. & SOC. SCI. 130 (2018) (explaining current realities of the global political economy of fossil fuels).

217. In addition to the UNEP's Production Gap reports, *see supra* note 204, see, for example, Georgia Piggot et al., *Curbing Fossil Fuel Supply to Achieve Climate Goals*, 20 CLIMATE POL'Y 881 (2020), which states, "[w]hat is missing from international climate deliberations and from most domestic climate mitigation plans . . . is a strategy for phasing down fossil fuel *production*." *Id*. at 881.

218. Since *Leghari* was focused on adaptation, that decision did emphasize present climate harms rather than mostly focus on threats of future harms posed by a failure to mitigate, as the decisions do in *Urgenda*, *Milieudefensie*, and *Neubauer*. Additionally, in its report, the CHRP detailed the accounts of victims of Super Typhoon Haiyan about the incalculable loss and damage that they suffered, and determined that some existing laws potentially provided the basis for damages awards for violations such as the fossil fuel industry's climate disinformation campaign. *See* CHRP REPORT, *supra* note 9, at 108–09.

an international community serious about halting climate change must do."[219] Additionally, in the context of global climate governance, repair of loss and damage is just as critical as mitigation and adaptation. Indeed, it is necessary to ensure that those countries that have suffered climate loss and damage are able to mitigate and adapt.[220]

The IPCC devoted a significant portion of its latest assessment report to climate damages.[221] The report explained the power of what is known as attribution research for understanding the present consequences of climate breakdown—that is, climate modeling studies that tie human-caused climate disruption to existing and projected climate impacts on ecosystems, human society, and wildlife.[222] Recent attribution studies have linked

219. Ralph Regenvanu & Avinash Persaud, *It's Time for Those Who Caused Climate Change to Pay for It*, REUTERS (Dec. 10, 2018), https://news.trust.org/item/20181206165251-g7ixe [https://perma.cc/Q5XU-P48Q].

220. For over three decades of negotiations, developing countries, led by small island states, have been advocating for the establishment of a "loss and damage" fund within the UNFCCC regime dedicated to providing developing countries with monetary relief for climate harms. *See* Karen C. Sokol, *The Foundation of Climate Security: Repair of Loss and Damage*, OPINIOJURIS (Nov. 5, 2022), http://opiniojuris.org/2022/11/05/the-foundation-of-climate-security-repair-of-loss-and-damage [https://perma.cc/6HV6-M867]. Wealthy high-emitting nations, led by the United States, have consistently refused to heed this call. *See id.* Finally, at the 2022 Conference of the Parties to the Paris Agreement, they agreed to establish a fund (with the United States being the sole holdout until after the talks went into overtime). *See* Karen Sokol, *What Comes After the Loss and Damage Fund for Responsibility and Repair in a Climate-Disrupted World?*, LAWFARE (Dec. 14, 2022), https://www.lawfareblog.com/what-comes-after-loss-and-damage-fund-responsibility-and-repair-climate-disrupted-world [https://perma.cc/EGP3-GREA]. Critical questions remain, however, over who will be responsible for providing funding, how much, and how funds will be distributed. *See id.*

221. *See* Hans Pörtner et al., *Summary for Policymakers*, *in* IPCC, AR6 WGII REPORT, *supra* note 129, at 9, para. B.1.2 ("Climate change has caused substantial damages, and increasingly irreversible losses, in terrestrial, freshwater and coastal and open ocean marine ecosystems . . . . The extent and magnitude of climate change impacts are larger than estimated in previous assessments . . . ."). The following discussion of attribution research is derived largely from Sokol, *Forging Global Rule of Law*, *supra* note 103.

222. Hans Pörtner et al., *Summary for Policymakers*, *in* IPCC, AR6 WGII Report, *supra* note 129, at 9, para. B.1.

specific harmful human impacts to climate breakdown, including harms to public health,[223] heat-related morbidity and mortality,[224] air pollution,[225] disease,[226] mental health,[227] humanitarian crises,[228] displacement,[229] and food insecurity and malnutrition.[230]

Another type of research that has been active in recent years has been coined "source attribution" by Michael Burger and other scholars at Columbia University.[231] Source attribution research "identif[ies] the relative contribution of different sectors, activities, and entities to changes in atmospheric GHG concentrations."[232] As many scholars have recognized, the merger of source attribution evidence with impact attribution evidence provides a potentially powerful tool for demonstrating climate responsibility by high-emitting countries and entities in judicial fora.[233] There is a growing body of studies that do just that.

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223. *See* Kristie L. Ebi et al., *Using Detection and Attribution to Quantify How Climate Change Is Affecting Health*, 39 HEALTH AFFS. 2168, 2171–72 (2020).

224. *See* Daniel Mitchell et al., *Attributing Human Mortality During Heatwaves to Anthropogenic Climate Change*, 11 ENV'T RES. LETTERS 1, 7 (2016); Hans Pörtner et al., *Summary for Policymakers*, *in* IPCC, AR6 WGII Report *supra* note 129, at 11, para B.1.4. In an analysis of a database of hundreds of attribution studies, *Guardian* reporters found that "[o]ne in three deaths caused by summer heat over the last three decades was the direct result of human-caused global heating, implying a toll of millions." Damian Carrington, *Revealed: How Climate Breakdown Is Supercharging Toll of Extreme Weather*, GUARDIAN (Aug. 4, 2022), https://www.theguardian.com/environment/2022/aug/04/climate-breakdown-supercharging-extreme-weather [https://perma.cc/L9D8-34NG].

225. Hans Pörtner et al., *Summary for Policymakers*, *in* IPCC, AR6 WGII Report, *supra* note 129, at 11, para. B.1.5.

226. *Id.* at 11, para. B.1.4.

227. *Id.*

228. *Id.* at 11, para. B.1.7.

229. *Id.*

230. *Id.* at 11, para. B.1.6.

231. Michael Burger et al., *The Law and Science of Climate Change Attribution*, 45 COLUM. J. ENV'T L. 57, 67 (2020).

232. *Id.* at 69.

233. *See generally* Rupert F. Stuart-Smith et al., *Filling the Evidentiary Gap in Climate Litigation*, 11 NATURE CLIMATE CHANGE 651 (2021) [hereinafter Stuart-Smith et al., *Filling the Evidentiary Gap*] (discussing the challenges and opportunities presented by the use of climate attribution studies as evidence). That is, source attribution studies can incorporate climate-impact attribution

More specifically, there has been increasing interest among researchers in conducting studies attributing specific types of climate loss and damage suffered by disproportionately-impacted countries or communities within countries to high-emitting countries or companies.[234] For example, a recent study attributed the emissions of the United States and four other high-emitting countries to warming and extreme hot years in other countries.[235] Another attributed U.S. emissions alone to nearly two trillion dollars in global income losses since 1990—losses that are concentrated in nations of the Global South.[236] Some authors have elaborated on the significance of their method for legal responsibility: "[w]hile previous studies have illustrated the economic harms of global warming, our work shows that these harms can be assigned to individual emitters in a way that rigorously accounts for the compounding uncertainties at each step of the causal chain from emissions to local impact."[237]

The *Lliuya* case, discussed above,[238] may provide the first window into the significance of assessing both source and impact attribution evidence through a judicial lens. As noted, the plaintiff is a Peruvian farmer and mountain guide who sued RWE,

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evidence "to link *specific* entities and/or activities to *specific* climate change impacts." Burger et al., *supra* note 231, at 69 (emphasis added).

234. *See* Roberto Mera et al., *Climate Change, Climate Justice and the Application of Probabilistic Event Attribution to Summer Heat Extremes in the California Central Valley*, 133 CLIMATIC CHANGE 427, 435–36 (2015) (discussing a study attributing heat extremes in 2006 in California's Central Valley to anthropogenic climate breakdown, and noting that such studies are "only one step away from attributing excessive deaths in a particular heat wave, highlighting the societal importance of these kinds of attribution studies" for adaptation policy as well as legal responsibility "for reparations or adaptation costs").

235. *See* Lea Beusch et al., *Responsibility of Major Emitters for Country Level Warming and Extreme Hot Years*, 3 COMMC'NS EARTH & ENV'T 1, 2–3 (2022). As the authors note, "[o]ur results highlight the responsibility of individual emitters in driving regional climate change and provide additional angles for the climate policy discourse." *Id.* at 1.

236. Oliver Milman, *Nearly $2tn of Damage Inflicted on Other Countries by US Emissions*, GUARDIAN (July 12, 2022), https://www.theguardian.com/environment/2022/jul/12/us-carbon-emissions-greenhouse-gases-climate-crisis [https://perma.cc/65V8-QSTY].

237. Christopher W. Callahan & Justin S. Mankin, *National Attribution of Historical Climate Damages*, 172 CLIMATIC CHANGE 1, 16 (2022). They further note that their "approach can be generalized to other actors, such as individual firms." *Id.*

238. *See supra* text accompanying notes 95–99.

Germany's largest utility,[239] in German court seeking damages under nuisance law for the costs of protections necessary to protect his home from the high risk of a "glacial lake outburst flood[]."[240]

Lliuya is among the thousands of Peruvians who live downstream from Lake Palcacocha, a lake that has dramatically and rapidly expanded as a result of melting Andes glaciers and now presents "one of the world's greatest flood risks."[241] In support of his claim, Lliuya has an attribution study concluding that the current risk of catastrophic flooding presented by Lake Palcacocha to his city of Huaraz would not exist without anthropogenic climate disruption.[242] The appellate court held that the case was admissible and reversed the lower court's dismissal of Lliuya's claim,[243] which is quite significant in light of the nature of the climate crisis and the corporate and geopolitical power dynamics that perpetuate it and that continue to hinder the UNFCCC system. As the environmental organization supporting Lliuya stated after the court's ruling:

> For the first time in the world, a court found that a private company with very large emissions can in principle be held responsible for protecting those affected from climate risks it has provoked - in accordance with its part of contribution to the cause. According to the court, *this also applies to damage in the "global neighbourhood", in this case Peru, in view of the worldwide effect of the greenhouse gases released*.[244]

Climate damages cases are particularly important within the context of global climate governance for three reasons. First,

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239. Gill Plimmer et al., *Germany's Biggest Power Supplier Warns Against Axing Russian Imports*, FIN. TIMES (Mar. 15, 2022), https://www.ft.com/content/3d63d1de-2af8-41ba-b579-54b9e2643eb3 [https://perma.cc/M2HX-G5KH].

240. *See supra* note 96 and accompanying text.

241. Rupert Stuart-Smith & Gerard Roe, *How Climate Change Threatens a Peruvian City with a 'Glacial Flood*,*'* CARBONBRIEF (Feb. 4, 2021), https://www.carbonbrief.org/guest-post-how-climate-change-threatens-a-peruvian-city-with-glacial-flood [https://perma.cc/ZH3S-UYJ9]. The lake outburst would most likely be caused by an avalanche. *Id.*

242. As the study authors put it, "the present-day threat to Huaraz is a direct consequence of the anthropogenically driven retreat of [the] Palcaraju glacier." R. F. Stuart-Smith et al., *Increased Outburst Flood Hazard from Lake Palcacocha Due to Human-Induced Glacier Retreat*, 14 NATURE GEOSCIENCE 85, 89 (2021). Huaraz has a population of 120,000. *Id.* at 85.

243. *See supra* notes 99–100 and accompanying text.

244. *Climate Lawsuit Against RWE in Decisive Phase*, *supra* note 101 (emphasis added).

they bring into sharp relief the *present* devastating harms of climate breakdown, and thereby the cruelty of continued delay and obstruction of responses. Second, cases such as *Lliuya* have the potential to highlight in concrete ways the disconnect between the concentration of climate responsibility in the Global North and the concentration of climate impacts in the Global South and the need to correct that asymmetry—to the extent possible—with compensation. Finally, attribution evidence will become increasingly important to effective global climate governance given that adaptation and repair of loss or damage are now just as essential as mitigation.[245] That will require policymakers to base many climate laws and policies on attribution evidence, and the cases provide a means of facilitating much-needed interaction of lawyers and climate scientists and of normalizing the application of laws to attribution research. Some ways to maximize this potential follow.

First, plaintiffs should bring more cases requesting damages both to develop strong factual bases for attributing incurred climate harms to countries and companies, as well as, relatedly, to make clear that we are at the stage where climate law must include mechanisms for reparations, such as those provided by human rights and tort law. In particular, more Global South plaintiffs should file suits against Global North defendants, as in *Lliuya*, as these cases demonstrate the inequity of the climate crisis as well as the full extent of the damages caused by a defendant's contribution to the climate crisis, which is necessary to fulfill the compensatory and the deterrent functions of damages awards.

Second, scientists and other researchers should undertake and publish (1) source attribution studies that do not rely solely on countries' and companies' reported emissions (ones that also include countries' military emissions and fossil fuel companies'

245. *See* Frederike E. L. Otto et al., *Toward an Inventory of the Impacts of Human-Induced Climate Change*, 101 BULL. AM. METEOROLOGICAL SOC'Y E1972, E1973–75 (2020) [hereinafter Otto et al., *Impacts of Human-Induced Climate Change*] (noting dominance of mitigation in climate policymaking at the international and domestic levels and the "serious deficiencies . . . on the impacts and adaptation side," and calling for adaptation and damages policies based on attribution evidence).

methane leaks and releases,[246] for example); (2) studies tying impacts—such as heatwaves or a typhoon—to economic and non-economic loss and damage; and (3) studies that tie Global North country and company emitters to specific impacts in the Global South.

Third, more cases should seek both damages and injunctive relief, as use in a single case of attribution evidence that is both backward- and forward-looking could serve to powerfully convey the incalculable costs of both historical emissions that have caused climate harms and of future emissions that will wreak even more carnage. For example, a recent study found that if the United States meets its commitment under the Paris Agreement to achieve net-zero carbon emissions by 2050, 7.4 billion lives around the world would be saved *from heat-related deaths alone*.[247] That number would increase exponentially if record-breaking storms, droughts, and myriad other climate-related disasters were included.[248]

Finally, all the foregoing will require lawyers to engage with the scientific community and to use more recent research as evidence to supplement IPCC reports.[249] Although IPCC reports are essential both for their breadth and their intergovernmental pedigree, they are published relatively infrequently and compile

246. Methane is eighty times more potent than carbon dioxide over a twenty-year period, and multiple studies have found that leaks and releases are severely underestimated in reporting. *See, e.g.*, Giorgia Gugliemi, *Methane Leaks from US Gasfields Dwarf Government Estimates*, 558 NATURE 496, 497 (2018) (reporting on study that found that because of underestimation of the amount of methane leakage along the entire supply chain, "methane emissions in 2015 were about 60% greater than estimates from the EPA's greenhouse gas inventory").

247. Oliver Milman, *How Millions of Lives Can Be Saved If the US Acts Now on Climate*, GUARDIAN (June 16, 2022) (emphasis added), https://www.theguardian.com/environment/2022/jun/16/us-climate-crisis-millions-lives-saved [https://perma.cc/8MJP-PX6F].

248. *Cf.* Camilo Mora et al., *Over Half of Known Human Pathogenic Diseases Can Be Aggravated by Climate Change*, 12 NATURE CLIMATE CHANGE 869, 869, 873 (2022) (finding that "58% of all infectious diseases known to have impacted humanity in recorded history" have been made worse by anthropogenic climate disruption and that, because "human pathogenic diseases and transmission pathways aggravated by climatic hazards are too numerous for comprehensive societal adaptations," it is imperative to also "work at the source of the problem: reducing GHG emissions").

249. *See* Stuart-Smith et al., *Filling the Evidentiary Gap*, *supra* note 233, at 654 (concluding that the climate science presented in cases "lags substantially behind the state of the art in climate science").

research published in previous years.[250] This is particularly important given the rapid and continual improvement of climate modeling and thus of attribution studies that rely on it, and the increased interest among climate scientists in producing legally relevant studies. This law-science interface is an important aspect of the litigation that is part of the next function in this typology: trans-societal nexuses.

C. TRANS-SOCIETAL NEXUSES

Even at this relatively early stage of climate-accountability litigation, it is clear that it will result in robust transjudicial nexuses. But the litigation is also leading to nexuses across much broader groups of the global community, including scientists, lawyers, the media, activists, governments, and corporations.

Because of its inherently global nature, climate science presents several challenges for courts in the application of laws, many of which, as discussed above, have not yet been adapted to a climate-disrupted world. As a result, there is a significant likelihood that courts, as well as litigants, will pay attention to decisions in other jurisdictions and incorporate them into their reasoning. This is occurring with increasingly greater frequency as more decisions are issued.

In addition to what Slaughter called "horizontal" transjudicial communications—that is, between and among national courts—there are some interesting new forms of judicial communications that also extend to non-judicial actors.[251] For example, in his 2020 opening speech, then-President of the European Court of Human Rights (ECtHR) Linos-Alexandre Sicilianos endorsed the Netherlands Supreme Court's interpretation in *Urgenda* of the ECHR—the European Convention on Human

250. Quirin Schiermeier, *The Science That Supports Climate Lawsuits*, 597 NATURE 169, 170–71 (2021) (noting that the IPCC's "massive studies take years to compile, so the results can be out of date by the time the reports are released").

251. *See* Slaughter, *supra* note 47, at 103 ("Horizontal communication takes place between courts of the same status, whether national or supranational, across national or regional borders."). For example, the *Neubauer* and *Smith* courts both cited decisions from other jurisdictions. *See Neubauer*, *supra* note 148 and accompanying text; *Smith*, *supra* note 161, para. 36, n.5. And the CHRP cites multiple decisions from other nations. *See* CHRP REPORT, *supra* note 9, at 1–2, 2–7, 141.

Rights—as embodying climate protections and its order requiring the Dutch government to reduce emissions: "[b]y relying directly on the Convention, the Dutch judges highlighted the fact that the European Convention of Human Rights really has become our shared language and that this instrument can provide genuine responses to the problems of our time."[252] In so doing, the President appeared to be not only telegraphing that the ECtHR would further elaborate on climate-related protections embodied in the ECHR and encouraging other member state courts to do so, but also to be putting executives and legislatures on notice that the ECtHR supported judicial orders to reduce emissions such as that issued in *Urgenda*. Notably, several climate-accountability cases are pending in the ECtHR,[253] three of which it has prioritized.[254]

The CHRP report provides another striking example of broader judicial communication. Based on its interpretation of several human rights as embodying climate protections in its recent report, the CHRP spent over fifty pages cataloging recommendations directed not only to fossil fuel companies but also to courts and other National Human Rights Institutions, governments, financial institutions, the United Nations, lawyers, civil society groups, and all "global citizens."[255]

Perhaps the most interesting type of communication that the litigation has provided a platform for, however, is that between lawyers and scientists. As noted above, the counsel for Urgenda penned an op-ed alerting scientists to the need for research that can serve as a basis for establishing individual countries' "fair share" of emission reductions.[256] Scientists have

252. Linos-Alexandre Sicilianos, President, Eur. Ct. Hum. Rts., Solemn Hearing on the Occasion of the Opening of the Judicial Year 4 (Jan. 31, 2020), https://www.echr.coe.int/Documents/Speech_20200131_Sicilianos_JY_ENG.pdf [https://perma.cc/QMN4-UKCL].

253. *See Browse by Jurisdiction: European Court of Human Rights*, SABIN CTR. FOR CLIMATE CHANGE L., GLOB. CLIMATE CHANGE LITIG. DATABASE, http://climatecasechart.com/non-us-jurisdiction/european-court-of-human-rights [https://perma.cc/W324-VRY6].

254. *See* Maria Antonia Tigre, *Advancements in Climate Rights in Courts Around the World*, SABIN CTR. FOR CLIMATE CHANGE L.: CLIMATE L. BLOG (July 1, 2022), https://blogs.law.columbia.edu/climatechange/2022/07/01/advancements-in-climate-rights-in-courts-around-the-world [https://perma.cc/U22V-36RW].

255. *See* CHRP REPORT, *supra* note 9, at 116–60.

256. *See* van Berkel, *supra* notes 178–79 and accompanying text.

started communicating with lawyers as well. As mentioned, the IPCC devoted several sections in its latest report to the litigation.[257] In a section on gaps in research, the IPCC stated that there is a need for "[s]ystematic comparative research on the differing role of climate litigation across various juridical systems."[258]

Scientists are also communicating to courts. For example, Dr. Michael Oppenheimer and several other prominent climate scientists submitted amicus curiae briefs in support of local governments in the United States that have filed cases against major fossil fuel companies.[259] In their briefs, the scientists explain attribution research establishing both that fossil fuels are the primary causes of climate damages suffered by the plaintiffs and the relative contribution of each of the defendant companies to atmospheric GHG levels.[260] Scientists are also publishing articles making recommendations about the use of attribution research and other climate science as evidence in climate-accountability cases.[261] Finally, the litigation has led to scholarly collaborations between lawyers and scientists about the intersection of climate science and the law in litigation.[262]

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257. *See supra* note 13 and accompanying text.

258. Dubash & Mitchell, *supra* note 13, at 1411. At the beginning of the section, the IPCC stated that "[i]n each area there is an overarching need for more *ex post* analysis of impact, more cases from the developing world, and understanding how institutions and policies work in combination . . . ." *Id.* at 1411–12.

259. *See, e.g.*, Brief for Robert Kopp et al. as Amicus Curiae Supporting Appellee, City of Hoboken v. Chevron Corp., 45 F.4th 699 (3d Cir. 2022) (No. 22-1096).

260. *Id.* at 2 ("As courts address cases involving the damage to coastal communities caused by climate change and ongoing sea-level rise, we feel it is essential for judicial decisions to be based on an understanding of the relevant science and the unavoidable adaptation expenses these communities are facing.").

261. *See, e.g.*, Stuart-Smith et al., *Filling the Evidentiary Gap*, *supra* note 233 (calling for litigators to use "state of the art" climate science).

262. *See, e.g.*, Friederike E. L. Otto et al., *Causality and the Fate of Climate Litigation: The Role of the Social Superstructure Narrative*, 13 GLOBAL POL'Y 736, 737–39, 746 (2022) (positing that, given the strength and legal relevance of so much climate science, at this stage the biggest obstacle to the success of climate cases seeking damages is the general public's misunderstanding about the urgency of the climate crisis).

D. ESTABLISHING CLIMATE SCIENCE AS FACT: JUDICIAL RECOGNITION OF IPCC REPORTS AND CLIMATE SCIENCE

From a general, practical governance perspective, courts' engagement with climate science in climate-accountability cases is important because courts simply are going to have to do that on a regular basis if courts are going to be relevant institutions in a climate-disrupted reality. It is even more significant, however, because a climate disinformation campaign designed to obstruct climate laws and policies is part of why we are now at a point at which adaptation and repair of loss and damage are just as critical as mitigation.[263] Because of that campaign's tragic success, another important function that climate-accountability litigation can serve in global climate governance is calling for both judicial recognition of IPCC reports and other climate science as fact and the judicial application of laws to climate science.

A principal component of the fossil fuel industry's longstanding disinformation campaign designed to protect its business interests from climate laws is the suppression and obfuscation of climate science, including by attacking the IPCC to sow public distrust in it and thereby in international climate law and governance.[264] The IPCC noted the harmful nature of climate misinformation for the first time in its latest assessment report: "[v]ested economic and political interests have organised and financed misinformation and 'contrarian' climate change communication" that "undermines climate science and disregards risk

263. *See* Otto et al., *Impacts of Human-Induced Climate Change*, *supra* note 245.

264. *See* Brulle, *supra* note 139, at 195–96 (describing the fossil fuel industry's attacks on Dr. Ben Santer, the lead author of the chapter in the 1995 IPCC assessment report concluding that "the balance of evidence . . . suggests a discernible influence on global climate") (alteration in original); *see generally* John Cook et al., *America Misled: How the Fossil Fuel Industry Deliberately Misled Americans About Climate Change*, CLIMATE CHANGE COMMC'N 4 (2019), https://www.climatechangecommunication.org/wp-content/uploads/2023/09/America_Misled.pdf [https://perma.cc/7C9V-R85D] (detailing how "the fossil fuel industry has subjected the American public to a well-funded, well-orchestrated disinformation campaign about the reality and severity of human-caused climate change").

and urgency" and thus results in "public misperception of climate risks."[265] Thus, judicial recognition of climate science as an essential part of the basis on which to decide legal disputes serves to help correct the societal record that the industry has worked to distort.[266]

Further, more subtly but just as importantly, such judicial recognition serves to normalize the necessity of looking to climate science to resolve legal questions, which is key given that the industry designed the disinformation campaign to prevent the intersection of climate science and law. The decisions in *Leghari*, *Neubauer*, *Urgenda*, and *Milieudefensie* are all good examples of the power of well-reasoned judicial opinions that engage with climate science to determine the meaning of laws in a given case. They also demonstrate how much work that engagement is, particularly where, as is frequently the case at this stage, the laws invoked have yet to be applied to climate science. Sweeping arguments that matters related to climate are necessarily ones of policy and not amenable to judicial resolution are regularly made in these cases. Consequently, there is a risk that the challenging nature of climate science will lead courts to grant motions to dismiss too readily.

In most cases, these arguments include separation-of-powers claims that the judiciary must abstain because climate issues inevitably implicate foreign policy, national security, and other matters that are the exclusive province of the policymaking branches.[267] The problem with most of these arguments is that

265. Jeffrey A. Hicke et al., *North America*, *in* IPCC, AR6 WGII REPORT, *supra* note 129, at 1931, 1940. Even more specifically, the IPCC stated that "[i]n the US, the oil industry has underpinned emergence of climate scepticism and its spread abroad." Dubash & Mitchell, *supra* note 13, at 1374.

266. *Cf.* Kotzé, *supra* note 147, at 1440 (highlighting the significance of the *Neubauer* Court's sophisticated engagement with climate science and the IPCC reports in light of the "intensifying scepticism of the IPCC and its work, which is being propagated by disinformation campaigns and conspiracy theories, and supported by 'merchants of doubt' such as special interest groups associated with fossil fuel lobbyists, and politically motivated ultra-right wing fear campaigns").

267. In the United States cases alleging that the fossil fuel industry is liable under state consumer protection statutes and tort law for its decades-long disinformation campaign, the defendants have made particularly strong versions of this argument. *See, e.g.*, Defendants-Appellants' Opening Brief at 21, City of Hoboken v. Chevron Corp., 45 F.4th 699 (3d Cir. 2022) (No. 22-1096) (seeking federal removal (and ultimately dismissal) of the case, arguing that "[a]s the

they paint with such a broad brush that they evade any genuine engagement with the factual basis of the claims, as they are based on generalizations about the nature of climate change unmoored from doctrinal specifics. If a court adopts that approach, then, it evades the hard work of discerning whether the facts provide a basis for the asserted claims—and explaining fully why or why not.[268]

Regardless of the outcome, this hard work is critical for courts to develop their role in a climate-disrupted world order, particularly one in which climate science has been systematically obscured and called into question. Sweeping separation-of-powers arguments, in this sense, obscure what climate science tells us about our current reality—and how we got here. Following are some ways to increase the chances of getting to the merits of cases and thus having courts engage with climate science to decide claims.

There should be educational programs for judges and future lawyers on climate science and on the history and techniques of climate disinformation. Not only is it imperative to deconstruct and correct the climate disinformation campaign; it is also important to understand that it is dangerous, a subject that has received increased attention from social scientists, as evidenced by the IPCC's attention to the topic in its recent report.[269]

Litigators should work with scientists to find the most legally relevant climate science research and ascertain how to demonstrate that legal doctrines can be applied to that science

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White House's response to the Ukraine crisis makes clear, the Nation's energy security—including its ability to deter war through economic means—is an essential aspect of national-security policy that depends in part on Defendants' ability to develop domestic oil and gas resources").

268. A good example of this flawed logic is provided by the *Smith* decision discussed *supra* note 165 and accompanying text. In her dissenting opinion in *Juliana v. United States*, Judge Josephine Staton criticized the panel majority's analysis on similar grounds:

> [R]esolution of this action requires answers only to scientific questions, not political ones. . . .
>
> Difficult questions are not necessarily political questions . . . . Beyond the outcome of the instant case, I fear that the majority's holding strikes a powerful blow to our ability to hear important cases of widespread concern.

Juliana v. United States, 947 F.3d 1159, 1189–90 (9th Cir. 2020).

269. *See supra* note 258 and accompanying text.

in principled ways. In particular, the focus should be on demonstrating why the specific questions presented are quintessentially judicial, even though the general subject of climate raises large and varied questions for policymakers at all levels of governance. A good example is *Juliana v. United States*, in which the plaintiffs introduced an affidavit of Dr. James E. Hansen clearly explaining the scientific evidence supporting the plaintiffs' claim that the U.S. Constitution embodies a right to a climate system capable of sustaining human life and their requested injunctive relief.[270]

Additionally, particularly in cases in which fossil-fuel interests are defendants, attorneys should be familiar with sophisticated climate denial framings and how they might work their way into legal arguments, such as the "undifferentiated responsibility" argument discussed above and sweeping claims that climate-related issues are not amenable to judicial resolution, which in effect amount to claims that the science is insufficiently certain to be judicially recognized as fact.[271]

CONCLUSION

Judicial responsibility-differentiation through the adaptation of laws to a climate-disrupted world is a critical component of global climate governance. Courts have unique strengths in governance and, particularly in the aggregate, can provide their own scaffolding. In many ways, their significance at this moment is similar to that recognized in previous scholarship on the roles of international and domestic courts in international law and governance more broadly, namely, a potential shift from a sphere of pure international relations and geopolitical power dynamics to enforceable legal obligations, and thus potentially legal violations and remedies critical to the rule of law.

This shift is particularly essential in the context of global climate governance given the de facto undifferentiated structure of the Paris Agreement's NDC system. Consequently, the import of judicialization in climate-accountability cases is distinctive

270. *See* Declaration of Dr. James E. Hansen Supporting Plaintiffs' Complaint for Declaratory & Injunctive Relief at 28–30, Juliana v. United States, 339 F. Supp. 3d 1062 (D. Or. 2015) (No. 6:15-cv-01517-TC), *rev'd* 947 F.3d 1159 (9th Cir. 2020).

271. *See supra* note 147 and accompanying text.

from that in previous cases of relevance to global governance because courts are being called on to answer complex questions of legal responsibility by determining the meaning of existing, non-UNFCCC laws in light of climate science, and thus to engage with the potential planetary as well as the international and transnational significance of judicial rulings. As a result, courts' roles in global governance will evolve—hopefully in progressive and more just ways that will serve to support our collective security in the planet's changed climate.

Invariably, some courts will serve their responsibility-differentiation role better than others, and some will refuse to serve it or even turn it on its head in what some climate-litigation analysts have termed "anti climate" cases.[272] But viewing the litigation in a holistic, institutional way shows that, as long as the structure is mostly built on effective legal adaptions, the more resilient, effective, and just our laws—as well as courts—will be as the future unfolds. A given unjustified decision—or even a chronically unjustified court[273]—does not diminish the institutional significance or necessity of courts, whether in climate cases or myriad other areas, and whether at the domestic or international level. It simply means that there is much work to be done by judges, litigators, academics, scientists, and ultimately the public, now and going forward. With this Article, I have sought to provide some tools for thinking about the nature of that work by providing an account of the structural role of courts in climate-accountability litigation, a typology of its potential functions, and several recommendations for ensuring that it serves them well.

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272. *See* Setzer & Higham, *Global Trends*, *supra* note 20, at 21 (citation omitted).

273. *See, e.g.*, Lisa Heinzerling, *The Supreme Court Is Making America Ungovernable*, ATLANTIC (July 26, 2022), https://www.theatlantic.com/ideas/archive/2022/07/supreme-court-major-questions-doctrine-congress/670618 [https://perma.cc/735K-QTC9] (providing a trenchant and powerful explanation of the U.S. Supreme Court majority's decision in *West Virginia v. EPA*, 142 S. Ct. 2587 (2022), and its implications).