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## Recent Developments in Climate Justice

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D I A L O G U E

# Recent Developments in Climate Justice

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## Summary

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Climate justice can be defined generally as addressing the disproportionate burden of climate change impacts on poor and marginalized communities. It seeks to promote more equitable allocation of these burdens at the local, national, and global levels through proactive regulatory initiatives and reactive judicial remedies that draw on international human rights and domestic environmental justice theories. Yet, efforts to define climate justice as a field of inquiry remain elusive and underinclusive; a recent book, *CLIMATE JUSTICE: CASE STUDIES IN GLOBAL AND REGIONAL GOVERNANCE CHALLENGES* (ELI Press 2016), seeks to fill that void by providing an overview of the landscape of climate justice from a variety of legal and geographic perspectives. On March 10, 2017, ELI convened the book's editor and three contributing authors to discuss current developments. Below, we present a transcript of the seminar, which has been edited for style, clarity, and space considerations.

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**Rachel Jean-Baptiste** (moderator) is a Senior Attorney at the Environmental Law Institute.

**Randall S. Abate** is the Associate Dean for Academic Affairs and Professor of Law at Florida A&M College of Law.

**Maria Antonia Tigre** is a Senior Attorney in the Environment Program at the Cyrus R. Vance Center for International Justice.

**Dr. Patricia Ferreira** is a Law Foundation of Ontario Scholar, Windsor Law, and a Fellow at the Center for International Governance Innovation, Canada.

**Dr. Wil Burns** is founding Co-Director of the Forum for Climate Engineering Assessment at the School of International Service, American University.

**Rachel Jean-Baptiste:** Today, we are discussing climate justice, with a focus on the volume *Climate Justice: Case Studies in Global and Regional Governance Challenges*.<sup>1</sup> The book draws on 29 contributors from 16 different nations, and offers proposed solutions to a variety of regulatory

obstacles under international law, U.S. law, and foreign domestic law. I am pleased that we have speakers on a few of those topics, including the book's editor, as well as three of the contributing authors.

Randall S. Abate is the associate dean for academic affairs and professor of law at Florida A&M College of Law. He is our moderator and the editor of *Climate Justice*. He will be talking about atmospheric trust litigation. Next, will be Maria Antonia Tigre. She is a senior attorney in the environmental law program at the Cyrus R. Vance Center for International Justice. She will focus on the global repercussions of the Dutch case *Urgenda Foundation*.<sup>2</sup> Next, will be Dr. Patricia Ferreira. She is the Law Foundation of Ontario Scholar at Windsor Law, Canada. She will address the Paris Agreement<sup>3</sup> and the concept of differentiation. Last but not least is Dr. Wil Burns. He is the founding co-director of the Forum for Climate Engineering Assessment at the School of International Service, American University, and he is also a senior fellow at the Centre for International Governance Innovation's International Law Research Program. He will discuss the human rights dimensions of bioenergy with carbon capture and storage (BECCS).

## I. Atmospheric Trust Litigation: Pipe Dream or Pipeline to Justice for Future Generations?

**Randall S. Abate:** It is great to see such robust interest in this topic. This book was truly a labor of love, with experts from around the world on different aspects of what climate justice means. And this panel is a snapshot of the coverage of the book to give a sense of different ways in which climate justice has manifested itself in the courts, and through international treaty negotiations and international human rights frameworks.

I am going to focus on a case that has drawn significant attention in the United States. In an era in which we are a bit depressed as environmental lawyers, seeing some overwhelming challenges on the horizon, one case has brought a glimmer of hope to our cause. That case is *Juliana v.*

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1. *CLIMATE JUSTICE: CASE STUDIES IN GLOBAL AND REGIONAL GOVERNANCE CHALLENGES* (Randall S. Abate ed., ELI Press 2016).

2. *Urgenda Foundation v. State of the Netherlands* (Ministry of Infrastructure and the Environment), Den Haag [Hague District Court] 24 juni 2015, ECLI:NL:RBDHA:2015:7196 (Stichting Urgenda/Nederlanden).

3. *Adoption of the Paris Agreement*, UNFCCC Conference of the Parties, 21st Sess., U.N. Doc. FCCC/CP/2015/10/Add.1 (Dec. 12, 2015), [http://unfccc.int/files/home/application/pdf/paris\\_agreement.pdf](http://unfccc.int/files/home/application/pdf/paris_agreement.pdf).

*United States*,<sup>4</sup> which is an atmospheric trust case that has survived a motion to dismiss and is set for trial in the U.S. District Court for the District of Oregon. I want to provide context for how we got to climate justice litigation in the United States and then more specifically atmospheric trust litigation.

To do that, we must start from the proposition that environmental law used to be about environmental resources. It was not about humans until the environmental justice movement was launched. So, the environmental justice context has to first be explored as something that put a human face on environmental regulation and environmental problems, and then how that transformed into the climate justice domain, and then more specifically the atmospheric trust litigation that we are seeing now.

Environmental justice took hold in the late 1980s in the United States. There had been two decades of very successful environmental enforcement to protect resources—air, water, land, and endangered species. And then, ultimately, there was an awareness that environmental problems go well beyond the integrity of the resources themselves. Environmental problems have human dimensions. This was initially brought to light through disproportionate impacts on minority communities, particularly African-American communities, who were bearing an unfair burden of environmental problems compared to the majority population.

This awareness of the human rights dimensions of environmental problems took on this lens of environmental justice as a way of thinking about environmental protection above and beyond the integrity of the resources themselves. That field took hold firmly in the 1990s, then encountered a roadblock in the courts around 2000, when there was an effort to seek Fourteenth Amendment protection for the disparate treatment that some communities were experiencing from environmental problems compared to others. That effort was rejected in the federal courts, and with that setback, environmental justice fell off the radar a bit for the next 10 years or so.

Environmental justice then came to mean more about procedural protections. It did not have as much of a substantive hold the way proponents had hoped. But recently, the Flint, Michigan, case<sup>5</sup> and the disproportionate impact on minority communities and their drinking water supply breathed some new life into the environmental justice movement. And that development emerged at the same time that climate justice had taken hold.

So, climate justice followed in the footsteps of environmental justice, and took the ball and ran with it. Climate justice litigation initially was pursued at the regional human rights level. The Inter-American Commission on Human Rights entertained a petition in 2005 involving

the Inuit,<sup>6</sup> an indigenous community located throughout the Arctic in Canada, Greenland, Russia, and the United States. This indigenous community framed what came to be known as the “climate change and human rights movement.” The Inuit alleged that there had been an impact to their human rights from the United States’ failure to become a party to the Kyoto Protocol.<sup>7</sup>

Ultimately, this case was brought to a commission that declined to rule on the petition due to insufficient evidence of human rights violations. But the case helped build significant awareness in the international community of the impacts to these indigenous peoples—their loss of their right to be cold, as they called it—from the melting in the Arctic caused by climate change, which was accelerated by the United States’ failure to regulate climate change. Even though they did not secure relief in the international human rights domain, the case helped define what climate justice means and how the legal system needs to have mechanisms to acknowledge and remedy the human rights impacts of climate change on marginalized communities like indigenous peoples and low-lying island nations.

That legal theory was applied in the United States through a well-known case in Alaska, *Native Village of Kivalina v. ExxonMobil Corp.*,<sup>8</sup> which was filed shortly after the Inuit petition. There was already a progression of cases in U.S. courts that was framed on the basis of public nuisance. Initially, these claims were brought against major power plants throughout the United States. In this litigation, states sued major power plants to reduce their carbon dioxide emissions from their operations by 20%. Collectively, these major power plants in the United States were responsible for a significant percentage of U.S. emissions. So, the idea was that the U.S. citizens were not getting desired emissions reductions from the United States’ non-participation in international treaty negotiations under Kyoto or from federal legislation in the United States to address climate regulation, so we took to the courts. This was the first step in that effort of climate justice litigation—to use the judiciary as a way to get some kind of climate change regulation and relief from climate change impacts.

Initially, it was just brought by states. Then it went to affected communities. Victims of Hurricane Katrina brought a case based on public nuisance theory for the impacts they suffered from the intensity of the hurricane and how it displaced them and caused a great deal of harm and disruption. The *Kivalina* case in Alaska was a part of this second step.

The *Kivalina* case was a group of 400 Native Alaskans who lived on this narrow strip of land. It was not always that narrow, however. Sea-level rise caused coastal erosion, which led to their land becoming essentially uninhabit-

4. No. 6:15-cv-1517-TC (D. Or. Apr. 8, 2016), <http://www.lawandenvironment.com/wp-content/uploads/sites/5/2016/04/5456019-0-10918.pdf>.

5. The most recent decisions in this litigation are *Mays v. City of Flint*, No. 16-2484, 47 ELR 20112 (6th Cir. Sept. 17, 2017), <http://www.opn.ca6.uscourts.gov/opinions.pdf/17a0212p-06.pdf>, and *Boler v. Earley*, Nos. 16-1684/17-1144 (6th Cir. July 28, 2017), [http://www.greatlakeslaw.org/files/Boler\\_v\\_Earley\\_Mays\\_v\\_Snyder\\_6th\\_Circuit\\_Opinion.pdf](http://www.greatlakeslaw.org/files/Boler_v_Earley_Mays_v_Snyder_6th_Circuit_Opinion.pdf).

6. 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 (Dec. 7, 2005).

7. *Id.*

8. 696 F.3d 849, 42 ELR 20195 (9th Cir. 2012), *cert. denied*, 133 S. Ct. 2390 (2013).

able. The U.S. Army Corps of Engineers projects that this community only has about 10 years to live where they are currently located. They brought a case against more than 20 of the largest multinational oil and gas companies, seeking payment for their relocation cost. They were going to have to move only 10 miles away from where they currently live, but out of harm's way so they would not be inundated because of their current vulnerability.

That case did not prevail in the courts. And that is something that I want to focus on in terms of climate justice litigation because when we move into atmospheric trust litigation, a lot of these same challenges facing the current plaintiffs in atmospheric trust litigation, we have already seen in the initial waves of climate justice litigation strategies. These obstacles have plagued these plaintiffs and they continue to be challenges.

The first obstacle was federal displacement. This refers to the fact that the Clean Air Act (CAA)<sup>9</sup> is in place at the federal level. The theory of federal displacement is that litigants should not rely on the common-law system to ask the judiciary to fashion remedies that could be obtained through the U.S. Congress under existing legislation. Thus, the CAA is the statute that should be engaged to address climate change. The court's reasoning was that climate justice relief, if available, ought to be sought under the CAA and not through some theory in the courts under common law. That was one ground on which these cases have been dismissed.

Another common thorn in the environmental plaintiffs' sides is standing. Standing has been a big concern, and particularly the causation element of standing has been a significant obstacle in these cases.

The political question doctrine was another challenge in the sense that these cases have involved using the court system to get climate justice relief. The argument under the political question doctrine is that Congress or the executive branch is better-suited to address climate change and its related impacts than the court system. Another related point is that the courts are not equipped to address these cases. Essentially, the courts lack the expertise to address these issues of climate change impacts due to their highly scientific nature.

So, atmospheric trust litigation is built on this momentum from environmental justice setting the stage for human rights and disproportionate impacts, and then these public nuisance suits that set a platform for the idea of climate justice relief in the courts. And then a retooling of our ancient public trust doctrine was necessary to lay the foundation for atmospheric trust litigation.

Basically, this line of cases draws on the proposition that the public trust doctrine stands for the state as a steward of natural resources for the benefit of the public, which was limited traditionally to the wet sands in coastal areas and the beds of rivers. Essentially, these resources could not be alienated and sold to private hands. The state had

to manage these resources in a way that is for the benefit of the public.

The scope of the doctrine gradually extended to other areas beyond the "traditional triad of uses," as they're called—fishing, navigation, and commerce. The courts eventually recognized that those public trust responsibilities in the state extend to wetlands and wildlife, and that the public trust doctrine was not as narrow as it was originally formulated.

And so it was building on that judicial expansion that atmospheric trust litigation steps in to suggest that the public trust doctrine be extended to mandate the state to be a trustee of our atmospheric resources, to protect the integrity of the atmosphere for current and future generations' health and well-being. That's the theory. Several cases have been brought and are currently pending throughout the United States at both the federal and state levels applying this theory.

The one that I want to draw attention to is the *Juliana* case. What is unique about this case is that it is brought by youth plaintiffs residing throughout the United States. They are representing current and future generations' interest in the integrity of the atmospheric resource system. They are seeking to compel the federal government to regulate climate change based on the atmospheric trust theory and constitutional law arguments. So, it is really an ambitious use of the judiciary to seek relief against governmental entities.

Traditionally under environmental litigation the most common citizen efforts for relief would be to seek to compel a governmental entity to execute a non-discretionary duty. So, it's essentially something it had to do anyway, and citizens can sue to compel that responsibility. But this is a much more ambitious and creative use of a common-law theory that is at issue in atmospheric trust litigation.

There are a lot of these kinds of cases going on outside the United States, some of which Maria will talk about. What I want to draw your attention to is that the *Juliana* case was something that has survived against impossible odds. First, the fact that this case survived the motion to dismiss is a major victory because the court acknowledged that there is not a standing concern, which has been a big challenge in these cases. There is also not a political question doctrine concern, and this is how the case is able to proceed to trial. But most significantly, the court acknowledged that there is a basis for the substantive claims that are being made.

Their substantive claims are not just an extension of public trust to reach atmospheric resources. They are also relying on constitutional arguments to allege that the government is essentially creating constitutional harms by failing to regulate climate change. The plaintiffs are alleging a substantive due process basis for their claim, and they are also relying on the Ninth Amendment, which refers to rights that are not expressly enumerated.

Under the Ninth Amendment, there is opportunity for the judiciary to find new rights that are not expressly con-

9. 42 U.S.C. §§7401-7671q, ELR STAT. CAA §§101-618.

veyed in the U.S. Constitution. Ultimately, what was most powerful about the district court's reasoning in denying the government's motion to dismiss was the reference to the *Obergefell v. Hodges* decision,<sup>10</sup> a U.S. Supreme Court case on gay marriage, a reference that used very compelling language to convey that a stable climate system is essential for the same reason that marriage is essential to our culture. It's a platform for the enjoyment of other very important rights to life and liberty.

What is really exciting about this case is that it is set to proceed to trial in 2018. The federal government is quite concerned and is seeking to intervene to tinker with how the case is going to be managed. It is encouraging to see that the atmospheric trust theory and the prospects for success in this case are gaining a lot of attention and support.

I want to end on a hopeful note in the sense that we have seen creative and persistent environmental litigation succeed in other contexts. One does not have to look back too far in U.S. history to see industries that were seemingly untouchable—for example, lead paint, asbestos, and tobacco—and were winning case after case against environmental interests. They eventually crumbled because of the creativity and persistence of environmental common law. It is not too hard to imagine that the fossil fuel industry can easily be the next industry on this list to take a big hit from this line of cases that demand responsibility for regulation both at the governmental level and at the private-sector level.

Ultimately, atmospheric trust litigation theory is only meant to address one case at a time. Relief is not meant to be systemic, but it is supposed to motivate governmental responses to ultimately achieve more of a traditional top-down remedy.

## II. The Dutch Case and Global Repercussions

**Maria Antonia Tigre:** The focus of my presentation is on the famous Dutch case that reached a verdict at the end of 2015, and changed the paradigm for climate change litigation. I would like to provide a bit of background, as it is important to discuss the claims that were brought and the decision that was reached.

In the book chapter that I co-wrote with Jennifer Huang, who is an international fellow at the Center for Climate and Energy Solutions, we discussed three of the legal implications arising from this case. I will discuss one of those here, and also some implications for future climate justice litigation.

The Urgenda Foundation is a Netherlands-based environmental nonprofit organization. It means “urgent agenda.” After two years of preparation, Urgenda brought this case along with almost 900 citizens and they sued the Dutch government for its ongoing contributions to climate change at the end of 2013. They argued that the

Dutch government was not doing enough to regulate and curb Dutch greenhouse gas emissions, and for that reason, the government was negligent toward its citizens. They requested the government cut emissions by at least 25% to 40% below 1990 levels by 2020. The current goal is 16% from 2005 levels. Although the Netherlands is a small country, it is actually a large emitter. It ranks fifth in carbon dioxide emissions and it is responsible for 0.5% of the world's emissions.

The claims were mostly based on Dutch civil law. There is an article in the Dutch Civil Code that addresses the violation of personal rights, a breach of statutory duty, or of an unwritten standard of care.<sup>11</sup> According to this article, a civil court may determine the applicable standard of duty. Because the government is not immune from liability under Dutch law, government agencies can be held liable as policymakers.

Urgenda claimed that the Dutch government violated this statute by not adopting more aggressive emission reduction policies that were needed to protect its citizens, and they used the science from the Intergovernmental Panel on Climate Change (IPCC) reports<sup>12</sup> to provide the facts behind global warming. In addition to the domestic law, they relied on European Human Rights Law and International Environmental Law<sup>13</sup> to reinforce those claims. In particular, they relied on the objective of the United Nations Framework Convention on Climate Change (UNFCCC)<sup>14</sup> and the long-term goal of limiting global warming to 2 degrees Celsius, as well as the preamble of the Cancun Agreements,<sup>15</sup> which provides that developed country Parties must reduce emissions in the range of 25% to 40% below 1990 levels to avoid the adverse impacts of climate change.

In June 24, 2015, the District Court of The Hague issued its decision in favor of Urgenda and rejected all of the state's defenses. In particular, the procedural issue that the court addressed first was that Urgenda had standing, which was in itself a big deal. The court accepted Urgenda's claims that there was a breach of duty of care in this case based on the precautionary principle and the Netherlands' commitment under the UNFCCC, as well as under the Treaty on the Functioning of the European Union<sup>16</sup> itself. So, they used international law, domestic

11. Art. 6:162 BW.

12. IPCC reports are periodic, international reports that assess the scientific, technical, and socioeconomic information concerning climate change, its potential effects, and options for adaptation and mitigation.

13. The European Convention on Human Rights (ECHR), the United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Cancun Agreements.

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

15. *Report of the Conference of the Parties on Its Sixteenth Session, Held in Cancun From 29 November to 10 December 2010—Addendum, Part Two: Action Taken by the Conference of the Parties at Its Sixteenth Session, Decisions Adopted by the Conference of the Parties, UNFCCC, 16th Sess., Decision 1/CP.16, U.N. Doc. FCCC/CP/2010/7/Add.1 (2011)*, <http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf>.

16. Consolidated Version of the Treaty on the Functioning of the European Union, 2008 O.J. C 115/47.

10. *Obergefell v. Hodges*, 576 U.S. \_\_\_, 135 S. Ct. 2584 (2015).

law, and European Union law as well. The court established that there was a legal duty to protect citizens from impacts of climate change and that this duty was enforceable by the court.

The court cited several components of international law including the no-harm rule, the doctrine of hazardous negligence, the principle of fairness, the precautionary principle, and the sustainability principle. The court recognized that the Netherlands was partially responsible for contributions to climate change. Therefore, the court ordered the Dutch government to reduce greenhouse gas emissions by 25% below 1990 levels by 2020. The Dutch government appealed the decision. However, due to the procedural rules of the Netherlands, the decision is already enforceable, so the government has started to comply with it.

The *Urgenda* case has already had a significant impact on national policymaking and public debate. A new climate bill has already been drafted. Even though the appeal is still pending, the decision has already prompted several changes and inspired more litigation in other parts of the world. In our book chapter, we analyzed three important legal issues that have significant implications. Here, I will focus on one of those issues: the judicial overreach question.

Many scholars have debated whether the court in *Urgenda* exceeded its judicial authority. Like several other systems around the world, the Dutch constitutional system consists of three branches and is supported by a system of checks and balances in which each branch checks on the potential abuse of power by the other branches. Some argued that the decision is a threat to the rule of law and constitutional democracy, and opens the possibility of an activist civil court, as they call it, which would adjudicate science-based policymaking that would not necessarily represent the majority of the population.

According to those that defend this position, this decision would likely be overruled by the Dutch Supreme Court, as the court cannot obligate the states to create new law. This is true under European Union law as well, which states that a national court may hold the state liable for any emission or failure to act where obligated and also assess damages, but it cannot require the state to act.

The opposing view is that the decision is actually restoring a constitutional balance. Because the government here was negligent toward citizens and failed to do enough to protect them, the court will simply be taking up the slack when the other branches of government have failed and have not fully protected the fundamental rights that are guaranteed.

One of the problems with this position is that the *Urgenda* decision was precise and detailed, leaving the state with very few means of how to achieve it. But the Dutch court addressed this issue in its decision, and recognized that there was a risk of intrusion into the executive and legislative branches of government. Nevertheless, it concluded that *Urgenda* was not prohibited from enforcing the government's duty of care in this particular case.

A similar issue was also raised in Pakistan in *Leghari v. Federation of Pakistan*,<sup>17</sup> which is a decision from 2015. This case was brought by a farmer based on the government's failure to implement the 2012 National Climate Policy and Framework, which was developed to fulfill the commitments under the UNFCCC. According to the Bali Action Plan<sup>18</sup> and the Cancun Agreements, the government of Pakistan had to establish some specific domestic climate change policy and then implement it. The government established the policies in the 2012 policy framework, but did not fully implement them. This farmer realized that climate change has led to water scarcity and temperature shift, causing a severe impact on food security. And the lack of implementation of the framework actually worsened these impacts. Instead of seeking compensation, Leghari requested the government to promote irrigation practices and green energy practices.

The Lahore High Court first noted that climate change significantly impacts communities in Pakistan. It reinforced the facts of climate change, put those in public record—which was itself significant in this case—and ruled that the delay in implementing the framework offended the constitutional rights to life, including the right to a healthy and clean environment and the right to human dignity. The Court based its decision on a blend of international climate change law and domestic constitutional norms, directly linking climate change to human rights. As a result, the Court requested the government ministry to take specific actions to implement the framework. And the Court, in fact, was even more specific than the Dutch court and set up specific ways in which the executive branch would have to comply with the ruling.

Thus, both of these cases are significant developments: *Urgenda* was the first case in Europe in which human rights and international law had been used to determine a government's duty of care to its citizens with respect to climate change regulation. And the *Leghari* case built on this momentum, and it came from a developing country, which is also very significant for climate justice as a whole.

In both cases, the courts emphasized the obligations of the governments to protect their citizens, endorsing the facts of climate change, making this public record as well, and established that climate change is real and caused by human activity, that the impacts are dramatically impacting the world as a whole, and that governments should act. They brought a human dimension to environmental law, like Randy mentioned, linking human rights with environmental law, and with climate change specifically.

The *Urgenda* case already has some significant implications for other climate justice cases around the world. I want to highlight three of those. The first one is a case

17. W.P. No. 25501 (Lahore High Court Sept. 4, 2015).

18. Pakistan, Submission by Pakistan: Nationally Appropriate Mitigation Actions by the Developing Countries (Bali Action Plan 1bii) (2011), [https://unfccc.int/files/meetings/ad\\_hoc\\_working\\_groups/lca/application/pdf/submission\\_by\\_pakistan\\_on\\_namas\\_ghh.pdf](https://unfccc.int/files/meetings/ad_hoc_working_groups/lca/application/pdf/submission_by_pakistan_on_namas_ghh.pdf).

in Belgium that was filed in 2015.<sup>19</sup> The model is very similar to that of *Urgenda*. It also involves a coalition of citizens that sued the federal and regional governments of Belgium for failure to reduce greenhouse gas emissions. They asked the government to reduce by 40% by 2020, below 1990 levels.

The other two cases, from New Zealand and Pakistan, are both based on the intended nationally determined contributions (INDCs), which were presented prior to the Paris Agreement. This strategy is a bottom-up approach in which developing countries set up their targets to contribute to reducing climate change and establish the ways in which they would reach those targets. And the nationally determined contributions (NDCs) already involve legal issues that may also be addressed in the courts in the future. These two cases were brought by citizens who were dissatisfied with the targets that were chosen and set by their countries.

The New Zealand case was filed by a law graduate, Sarah Thomson.<sup>20</sup> She questioned the legality and the reasonableness of the government's domestic greenhouse gas emissions and the INDCs themselves and sought judicial review of the government's climate change policy.

The Pakistan case was brought by a seven-year-old girl, Rabab Ali, also following this trend of youth cases brought in climate justice.<sup>21</sup> She also questioned the validity of the INDCs, for their lack of mitigation targets and mitigation measures, and also linked it to a violation of the fundamental constitutional rights, so she asked the court to rewrite the INDCs.

There are also cases in Austria, Nigeria, Norway, the Philippines, South Africa, and Switzerland. But the gist here is that we are in a new era of climate action. Climate litigation provides ways in which the government and its citizens can engage in a dialogue to increase regulatory ambitions. It has really broadened the participation in climate justice as nongovernment actors are pushing governments to do more when more climate action is urgently needed.

In response to that trend, courts are starting to be more open to those initiatives. I think courts are going beyond their traditional role and it is something that is still under development. But the role of courts in climate justice is evolving and the role of judges in particular is getting redefined. They are starting to play more active roles.

The third point that I wanted to include is that the Paris Agreement and the NDCs in particular bring an opportunity for more action that removes the focus on developed countries. Through the NDCs, there was innovation for broader participation, which is tailored to the specific

capacities of countries. The key here, I think, is contribution and collaboration. Climate litigation has been one mechanism to promote climate justice. The collective effort really should be according to all countries' capacities.

### III. From Justice to Participation: The Paris Agreement's Pragmatic Approach to Differentiation

**Patricia Ferreira:** Often, when one thinks about climate justice, what first comes to mind are questions of remedies for those communities that are most affected by the impacts of climate change—communities that tend to be the poorest and most marginalized, which least contributed to the climate change problem. Also, we think about climate lawsuits against the “carbon majors” or climate lawsuits against states, such as the ones discussed by Randall and Maria.

However, one of the earliest and most enduring debates on climate justice is the one addressing the problem of how to fairly allocate the burdens and the costs of climate action between developed and developing countries. Countries are extremely asymmetrical when it comes to: (1) **their contributions to climate change**; (2) **their financial and technological capabilities to address climate challenge**; and (3) **their socioeconomic conditions, or their development needs**.

The principle of common but differentiated responsibilities and capabilities, or the “principle of differentiation,” has been at the center of this debate in the climate regime. For a long time, this debate has been seen from a “North against South” perspective. Developing countries have accused developed countries of failing to assume their greater responsibility to address climate change. Greater responsibility because developed countries have historically emitted significantly more greenhouse gases, but also because developed countries have much greater financial and technological capacity to address or to act on climate change. Developed countries, for their part, have argued that if left unchecked, growing emissions from emerging economies would derail their best efforts to address climate change.

This North versus South focus became insufficient to explain key recent developments in the climate regime as exemplified by the evolution of the principle of differentiation. Before the Paris Agreement, emerging economies such as Brazil, China, India, and South Africa promoted differentiation as a tool to promote climate justice even if it meant sacrificing broad participation in the multilateral climate regime. In Paris, emerging economies have supported differentiation as an instrument to secure and to promote broad participation in the climate regime, while no longer promoting the principle as a main tool to secure climate justice.

First, I will address the differentiation model of the 1990s and the UNFCCC, and the Kyoto Protocol. Then, I will discuss the new model of differentiation post-

19. VZW Klimaatzaak v. Kingdom of Belgium et al., Court of First Instance, Brussels [2015].

20. Kennedy Warne, *Sarah vs the State: Government's Climate Targets “Illegal, Unreasonable, Irrational,”* N.Z. GEOGRAPHIC, Nov. 12, 2015, <https://www.nzgeo.com/stories/sarah-vs-the-state-governments-climate-targets-illegal-unreasonable-irrational>.

21. Our Children's Trust, *Pakistan, Legal Updates*, <http://ourchildrenstrust.org/legal/international/Pakistan> (last visited Oct. 13, 2017).

Copenhagen that was reflected in the Paris Agreement. I will conclude by considering some of the implications for the way forward.

When countries signed the UNFCCC in 1992, there was a striking North versus South dissonance in the way that industrialized countries and developing countries considered the principle of differentiation. For the South, differentiation should primarily reflect the polluter-pays principle and the capabilities principle, meaning that developed countries responsible for more historic and per capita emissions and having greater financial and technological capacity should pay the costs for climate action accordingly. The focus of developing countries therefore was strongly in corrective and distributive justice, linked to respective contributions, capabilities, but also development needs.

Developed countries, however, accepted differentiated responsibilities to attract the participation of developing countries to global climate regulation efforts because they could not solve climate change unilaterally or by only coordinating among themselves. So, it was a trade off or a balance between justice and participation considerations, a balance that had worked well in other multilateral environmental agreements. For example, the Montreal Protocol on Substances That Deplete the Ozone Layer,<sup>22</sup> which gave developing countries longer periods to comply with their obligations, in addition to guaranteeing significant capacity building, financial assistance, and technology transfer to help with compliance.

But the model of differentiation embraced at the UNFCCC and the Kyoto Protocol was different. It made a clear North against South distinction. Developed countries are called to take the lead on climate action by committing to mandatory economywide emissions cuts and by financing climate action in developing countries. All developing countries, including emerging economies, were exempted from these central obligations and financial commitments, instead of the facilitated compliance and capacity-building that had prevailed in other multilateral environmental agreements.

The manifestation of differentiation in the climate change treaty regime before Paris broke the balance between justice and participation considerations that had prevailed in other multilateral environmental agreements. First, there is a total absence of binding climate commitments for emerging economies. So, if the primary objective of developed countries had been to use differentiation as a tool to enlist the meaningful participation of major developing countries, this did not happen in the climate regime. Then, famously, the United States rejected the terms of the Kyoto Protocol and never ratified the agreement. Canada withdrew from the Kyoto Protocol in 2012. Other countries such as Japan and Australia did not fully meet their targets.

This marked North versus South divide on differentiation was behind the gridlock that virtually froze effective

multilateral climate negotiations for more than a decade. This strong emphasis on justice has disrupted the Kyoto Protocol and sacrificed participation in the multilateral climate regime. The Kyoto Protocol ended up covering only 15% of global emissions, emissions that continue to grow significantly, especially in emerging economies. The longer countries failed to reach a new consensus, the larger became the proportion of contributions and capabilities of emerging economies.

Indeed, to illustrate this shift in the global asymmetries, in the 1990s, a small number of countries in the global North were responsible for 86% of the share of cumulative or historic carbon emissions while all countries in the global South were responsible for only 14%. This is from 1850 to 1992. In 2010, however, emerging economies together were already responsible for a share of 35% of global emissions, while developed countries as a group were responsible for 33%. All other developing countries together were responsible for 32% of global emissions. China has surpassed the United States in terms of carbon dioxide absolute emissions.<sup>23</sup> But even in terms of cumulative or historic emissions, emerging economies as a group are responsible for a very significant share of global emissions and they are fast approaching the same levels of developed countries even in historic emissions.

The same shift is happening in terms of economic capabilities or financial capabilities. As an example, China now is the second-largest economy in the world, and the emerging economies' collective share of the world gross domestic product (GDP) is projected to soon surpass the GDP share of developed countries as a group. If we look to technological capacity or capabilities in 1992 when the UNFCCC was signed, developed countries possessed most of the world's technological capacity. This situation has also changed.

In 2011, the World Bank commissioned a study to develop a global index of scientific and technological capacity. The findings defied the common perception about the limitations of technological capacity in developing countries. China has climbed from 38th place in the ranking in 2001 to third place in 2011; India from 44 to 12; Brazil from 39 to 16. And even South Africa rising from 43rd to 37th place is still within what's called the "technologically proficient group," along with many developed countries.

It is true that the emerging economies cannot be placed in the same category as developed countries due to their development needs, and also because of their lower per capita and historic contributions, which Maria mentioned. But it is also true that based on the polluter-pays principle and the capabilities idea, they will have to accept a meaningful share of climate obligations—one that is differentiated from other developing countries that have much lower contributions, much lower capacity, and much greater development needs.

23. John Vidal & David Adam, *China Overtakes US as World's Biggest CO<sub>2</sub> Emitter*, THE GUARDIAN, June 19, 2007, <https://www.theguardian.com/environment/2007/jun/19/china.usnews>.

22. 1522 U.N.T.S. 3, 26 I.L.M. 1550 (entered into force Jan. 1, 1989).

The outcome of the climate negotiations could have been, for example, the creation of a spectrum of obligations or a new category for emerging economies with a different set of obligations. But this is not exactly what happened. We know that the fortune of the multilateral climate regime changed in the late 2000s. Air pollution caused by the same carbon emissions responsible for climate change became a public health issue and a political chicken bone in China. In the United States, we had President Barack Obama making climate change one of his foreign affairs and domestic priorities.

Therefore, the interest of the two largest greenhouse gas emitters—one in the global North, one in the global South—finally aligned. In 2009, in Copenhagen, despite the failure to arrive at a new binding climate agreement, the group of emerging economies and the United States finally agreed on a path forward on climate action post-2020.<sup>24</sup> This alignment has enabled this broader global consensus on the need and the opportunity to move the multilateral climate regime forward.

What we have witnessed is a critical juncture that led to the successful negotiation of the 2015 Paris Agreement. The Paris Agreement has many strengths and many limitations. But one of those limitations is that the climate justice dimension regarding the allocation of responsibilities among countries is not there in the Paris Agreement. When one looks closer, this link between contributions to climate change, capabilities, and climate obligations was not reflected in the text of the Paris Agreement.

The Paris Agreement now has established the hybrid regime. There is a set of universal non-differentiated obligations, for example common, legally binding obligations to prepare and to communicate periodically the NDCs. The reporting is mandatory, but the substance on the commitments is voluntary now for both developed countries and emerging economies and all developing countries, in fact. There is also a common transparency framework and a common compliance regime that is facilitated by all countries.

But recognizing the normative legacy of the UNFCCC, the Paris Agreement has maintained some aspects of the North versus South elements of differentiation. Developed countries still expressly will take the lead with economy-wide emissions reduction targets. Developed countries shall provide financial resources for developing countries to take climate action. And developed countries shall provide capacity-building and technology transfer to the developing countries.

This model has allowed virtual universal participation in the Paris Agreement, which has broadly been considered a diplomatic success. What the Paris Agreement did not do was to expressly establish an intermediary set of legal responsibilities or obligations for emerging economies based on their greater contributions, their greater capabilities, and their lesser development needs, when compared to

other developing countries. Again, the strong emphasis on the participation meant a sacrifice of the earlier goal to use differentiation to promote climate justice.

So, what are the main takeaways? As the contributions and capabilities of emerging economies grew significantly over time, especially when compared to other developing countries, these countries have changed their position on differentiation, favoring a shift from a justice approach to differentiation to a more pragmatic approach to differentiation that emphasizes participation.

As described by Lavanya Rajamani, the leading expert on differentiation in international environmental law, “The climate differentiation, once inspired by principle, is now firmly in the realm of practical politics.”<sup>25</sup> It was this shift in the position of emerging economies that has led to this transformation of the principle of differentiation in the climate regime.

Other takeaways include that we are now further away from this idea of climate justice as a correlation between contributions to climate change, capabilities to act on climate, and international climate obligations. Developed countries with higher historic and per capita emissions and greater financial capacity have no longer the binding obligation to reduce their emissions. Emerging economies with growing emissions and growing capabilities are also under no obligation, as all mitigation is now voluntary.

There is a silver lining. The Paris Agreement has included some innovative institutional features, such as a strong transparency framework and periodic stocktaking. Those mechanisms may serve as instruments to apply political pressure to push both developed countries and emerging economies to face or to embrace their greater climate responsibilities. But how exactly this will play out we still do not know, as it will depend on many variables.

One variable is the question of whether we can keep the momentum on the multilateral climate regime. We now know that this rare global political consensus on climate action did not last long, unfortunately. Only one year after the signing of the Paris Agreement, we have the presidential election here in the United States and now a climate denier is in the White House. So, the new Administration has promised to protect coal and oil jobs to the detriment of the global climate regime. U.S. climate action advocates are again bracing for a new wave of climate litigation, which is one of the other avenues for climate justice. On the flipside, Brazil, China, and India are still on board on the climate regime and they may play a much bigger role globally with other developed countries.

My argument is that no matter what happens in the United States and other developed countries, this old North versus South perspective is no longer sufficient to explain recent evolutions in international and environmental law, as exemplified by the evolution of the principle of differentiation. Whether this change works for good or for

24. Daniel Bodansky, *The Copenhagen Climate Change Conference: A Postmortem*, 104 AM. J. INT'L L. 230 (2010).

25. Lavanya Rajamani, *Ambition and Differentiation in the 2015 Paris Agreement: Interpretative Possibilities and Underlying Politics*, 65 INT'L & COMP. L.Q. 493 (2016).

bad, only time will tell. There is no consensus in the literature on whether binding legal international obligations are more likely to change the behavior, for example, of the soft cooperative instruments. What is certain is that participation and not justice has been the primary driver of the new differentiation in the Paris Agreement.

Thus, seeking climate justice will depend a lot more on added provisions seeking to protect against human rights violations related to climate change, for example, and on the response to climate change, which is going to be the topic of Wil's presentation.

#### IV. BECCS and Human Rights

**Wil Burns:** In the past decade, there's been substantial focus at the international level on the nexus of human rights and climate change. Most of the emphasis during this time has been on the potential impacts on human rights of climate change itself. However, if one looks at the Paris Agreement, in its preambular language that addresses human rights, we see a transformation. Instead of an emphasis on the potential effects on human rights of climactic impacts, there is an emphasis on the potential impacts of responses to climate change, including mitigation and adaptation. However, the Preamble provides little guidance as to how we could operationalize that language in a way to protect those human rights in terms of discrete response measures.

The purpose of my chapter is to present a framework for operationalizing the Paris Agreement's human rights language in the context of response measures by focusing on an emerging form of climate mitigation characterized as bioenergy with carbon capture and storage. BECCS can reduce concentrations of carbon dioxide in the atmosphere by using carbon-storing feedstocks to produce heat, electricity, as well as liquid and gas fuels, coupled with carbon capture and sequestration, a process that captures carbon and seeks to store it either terrestrially or in the world's oceans.

BECCS is denominated as a "negative emissions technology," because it can, at least in theory, effectuate a permanent net removal of carbon dioxide, as opposed to options that merely reduce emissions in the atmosphere. While there are only a handful of BECCS projects currently, 87% of the integrated assessment models of the IPCC's Fifth Assessment Report<sup>26</sup> that provide pathways to hold temperatures to below 2 degrees Celsius, the Paris target—contemplate wide-scale deployment of BECCS, perhaps as much as 10-20 gigatons per year in terms of total capture. The Paris Agreement would appear to permit the Parties to incorporate BECCS and other carbon dioxide removal options into their NDCs because the term

"mitigation" in the NDC provision of Paris encompasses both reduction of emissions and enhancement of sinks.

While BECCS could prove to be an important component of addressing climate change, it also potentially poses serious threats to human rights in terms of some of the world's most vulnerable people. In my chapter, I argue that the use of a human rights-based approach could be an effective way to operationalize Paris' human rights language and to help protect all realms of interest. Today, I will look at the potential human rights ramifications of large-scale deployment of BECCS. Then, I will briefly outline a human rights-based approach and how it might seek to ameliorate any potential impacts on human rights that large-scale deployment of BECCS might effectuate.

BECCS could potentially impinge on human rights in several ways. First is in the context of the right to food. The right to adequate food is established by a number of human rights instruments, both at the international level and at regional levels. However, large-scale deployment of BECCS could contravene this right in several ways. First, large-scale deployment of BECCS could require diversion of large swaths of agricultural land for bioenergy feedstock, which could, in turn, result in large increases in food prices for some of the world's most vulnerable peoples. Even delivery of a relatively modest three gigatons of negative emissions from BECCS would require a land area of approximately 380 to 700 million hectares, which translates into 7% to 25% of agricultural land and a whopping 25% to 46% of arable and permanent crop area.

Several recent studies have indicated that large-scale BECCS could result in a net decrease in calories for some of the world's most vulnerable populations because it could result in massive increases in food prices. One recent study indicated that BECCS, even at the level of five gigatons a year, could raise food prices by as much as 25% to 30%. For vulnerable populations, which often expend as much as 75% to 80% of their income on food, this could prove devastating.<sup>27</sup> There was empirical evidence of this reality when, in 2007, the European Union modestly increased its biofuels demands and it resulted in a substantial spike in food prices and food riots throughout the world. BECCS would be that commitment to biofuels on steroids.

Second, BECCS could potentially contravene the right to water, which is recognized in several conventions. Moreover, the United Nations General Assembly recognized this right in a resolution in 2010.<sup>28</sup> By 2100, BECCS feedstock production at scale would require approximately 10% of the current evapotranspiration from all global cropland areas. To put this in context, it would be the same magnitude of water withdrawals as all current total agricultural water withdrawals. This could strain already severely limited water resources for millions. It could reduce crop potential,

26. IPCC, Fifth Assessment Report, Working Group III, Ch. 6, Assessing Transformation Pathways, at 93; Etsushi Kato & Yoshiki Yamagata, BECCS Capability of Dedicated Bioenergy Crops Under a Future Land-Use Scenario Targeting Net Negative Carbon Emissions, 2 *EARTH'S FUTURE* 421, 421 (2014).

27. Wil Burns & Simon Nicholson, *Bioenergy and Carbon Capture With Storage (BECCS): The Prospects and Challenges of an Emerging Climate Policy Response*, 7 *J. ENVTL. STUDIES & SCI.* 527, 528 (2017).

28. The Human Right to Water, G.A. Res. 64/2962, U.N. GAOR, 64th Sess., U.N. Doc. A/RES/64/292 (2010), <http://www.un.org/es/comun/docs/?symbol=A/RES/64/292&land=E>.

especially in the most vulnerable areas. And it could also substantially increase water degradation in many regions of the world, including Africa and South America.

Third, BECCS could contravene the right to health. The right to health, again, is recognized widely in international law. BECCS could undermine this right in several ways. First, it could result in substantial diminution of biodiversity through habitat destruction associated with carving out large areas of land for feedstocks, including both forest and arable croplands. Recent studies indicated that the impact of BECCS in terms of biodiversity could be equivalent to raising temperatures by 2.8 degrees Celsius by 2100.<sup>29</sup> Loss of biodiversity could, in turn, undermine the right to health by leading to an increase in the transmission of infectious disease by increasing the viability of vectors. This could include substantial increases in diseases such as hantavirus, Lyme disease, and others. It could also undermine health in terms of water contamination, as described above.

Finally, BECCS could potentially undermine the human rights to subsistence that are recognized under international law. BECCS could do this in several ways. First, it could result in huge land grabs, as has already occurred in many contexts in the association of biofuel plantations in areas such as Africa and South America, driven largely by European and U.S. demands for biofuels. We've also seen similar land grabs, often extralegally, in the context of REDD (reducing emissions from deforestation and forest degradation) projects. It is likely that these would substantially escalate, given the huge demands for feedstocks that BECCS at a level of five to 10-20 gigatons would entail. This could undermine vulnerable populations who rely on such lands for economic subsistence, especially forestry resources. Moreover, diminution of biodiversity associated with the use of BECCS would deny vulnerable populations critical resources that they rely on in terms of their livelihoods.

Thus, on a number of different axes, large-scale deployment of this new technology potentially threatens human rights. The question is if there is a way to connect the rather vague human rights language in the preamble of the Paris Agreement with substantive measures that would ensure that these human rights are recognized; and, indeed, if BECCS needs to be deployed to protect the world's climate in the future, will it be done in a way that will seek to ameliorate any potential adverse impacts in terms of human rights?

What I argue in the book is that we could potentially do this through the development of a human rights-based assessment network. The mandate of the Paris Agreement could be operationalized by using this human rights-based approach. The hallmarks of a human rights-based approach are several. First, there is a focus on the relationship between the rights holders and the duty bearers. Second, there is an identification of gaps in terms of legis-

lation, institutions, policies, and resources that are necessary to ensure recognition and protection of human rights with the deployment of new technologies or processes. And third, there is a possibility that the most vulnerable will have the ability to influence decisions that potentially have impacts on their lives, including their human rights. I would also add a fourth component, which is a comparative risk assessment of the human rights impacts of BECCS in comparison to the human rights impacts of a business-as-usual scenario in terms of greenhouse gas emissions.

The human rights-based approach has been embraced to date by international, national, subnational, governmental, and nongovernmental organizations in a wide array of contexts, including health, development, and environmental protection. Drawing on these guidelines, especially from the human rights and development institutions, applying the human rights-based approach to consideration of BECCS should utilize five essential elements.

First, human rights claims of rights holders and corresponding human rights obligations of duty bearers need to be identified. It would be critical to recognize who the rights holders are. This would include not only those whose potential human rights would be impacted by domestic deployment of BECCS, but also those who might be impacted in a transboundary context by the deployment of BECCS, especially in the context of food prices, as discussed above.

Second, it would be critical to recognize all of the potential duty bearers, both those that are domestic, as well as those that would be benefiting from BECCS internationally. For example, Parties under the Paris Agreement that might seek to partially meet their NDC commitments through the use of bioenergy technology should be recognized as rights holders whether BECCS is deployed in their country or in another country on which they rely for those resources. Also, there would be a need to comprehensively characterize the human rights that are potentially contravened by BECCS and their sources, again, both in terms of domestic law and international law.

The second component of this element would involve assessment of the capacity of rights holders to claim their rights and of duty bearers to fulfill their obligations. One of the things that we know in the context of bioenergy is that there is a very large gap in assessment regarding potential impacts of bioenergy deployment in the environmental context and the socioeconomic context. This will require substantial resources to accurately assess those potential impacts and to map them over the course of the world's most vulnerable populations. That is something that should be done before any consideration of large-scale use of BECCS. It should be incorporated into current pilot projects to help us develop and assess before we scale up the use of these technologies in the future.

Third, we need prioritization of the rights of the most vulnerable groups and individuals. These should include not necessarily focusing on the cheapest route to BECCS development, which may be the use of food crops for feed-

29. Phil Williamson, *Scrutinize CO<sub>2</sub> Removal Methods*, 530 NATURE 153, 154 (2016).

stocks, as well as the use of virgin forest. Instead, there should be substantial increases in research and development on innovations such as lignocellulosic and algae-based biofuels that would reduce potential impacts on food and forest resources. While these strategies may be more expensive than utilizing virgin land, they would recognize the need to potentially ameliorate human rights impacts in terms of the world's most vulnerable populations.

Fourth, we should avoid developing BECCS projects in so-called failing states, where elites may not be interested in protecting the rights of the most vulnerable, or where protection of these rights would be particularly hard to protect given these states' limited legal resources. This is particularly important in the context of BECCS because a recent study in the journal *Science* indicated that 45% to 50% of the potential land areas for biofuel feedstocks would be in failing states.<sup>30</sup> To blithely enter into agreements with the elites in those countries would fly in the face of the protection of human rights of the world's most vulnerable populations.

Finally, there is a need for monitoring and evaluation of outcomes in terms of human rights. This requires several things. It requires a human rights impact assessment process, similar to that which would be utilized in an environmental impact assessment (EIA) process. Indeed, to the extent that virtually all of these projects would require EIAs, a human rights assessment process could be folded into this process to increase efficiencies and benefit from some of the common themes between the two. Moreover, it would be critical to have an ongoing monitoring of these processes to ensure that human rights are not contravened in the future.

In summary, we may reach a point where indeed we need to look at what we now characterize as climate geoengineering options, given the feckless response of the world's community to climate change. But one of the things that we should try to do is to avoid what has happened today, which is visiting the most serious impacts of climate change on the world's most vulnerable. Every effort must be made to ensure that the world's most vulnerable do not suffer disproportionately from our responses to climate change. BECCS provides us with a good case study in developing a framework that will help ensure that this does not occur. Potentially, it is a way to put meat on the bones of the Paris Agreement's human rights obligations.

## V. Question-and-Answer Session

**Audience Member One:** Randall, I understand the U.S. Department of Justice is thinking about trying to find a way to get the *Juliana* case in the U.S. Court of Appeals for the Ninth Circuit dismissed. I wondered if you might comment on the possibilities there.

Wil, in the case of biofuels, that gets a lot of play in climate discussions. But it seems to me that for a long time we've recognized that the use of land for biofuels is going to be very problematic. I'm wondering whether we should just de-emphasize biofuels in relationship to wind and solar and perhaps other forms of renewable energy.

**Randall S. Abate:** I just became aware of this development last night, so I don't have a lot to say. But, overall, I'm encouraged by the response. I think it shows that the government is sufficiently concerned about the potential viability of this case. The extensive discovery and information that will come out to support the plaintiffs' case is a threat to the government's interest in refraining from regulation, and destructive to the fossil fuel industries' interest in maintaining a protective veil on what they're doing and not being accountable.

There is a lot more that I look forward to learning about in terms of the nature of this because it appears a bit unusual to request the appellate court to intervene before the case proceeds to trial at the district court.<sup>31</sup> I'm at least encouraged by the fact that the government looks scared.

**Wil Burns:** In reference to the question of de-emphasizing biofuels, a couple of things. A lot of it depends on how quickly you assume that you can increase market penetration in terms of renewables. In the IPCC's integrated assessment models, 116 of them met the 2 degrees Celsius goal. All of them contemplated substantially escalating the use of renewables in fairly optimum ways in some cases. But none of them, or 104 of the 116, could not get to holding temperatures to below 2 degrees Celsius, and certainly not 1.5 degrees, without substantial use of these negative emissions technologies simply because of the huge buildup and the inertia of the system.

I have some sympathy for this idea. If you look at where we are in terms of the NDCs, if all of the current NDCs are implemented absolutely faithfully, we go from 48 gigatons per year of carbon to 55 by the year 2030. Right? We're still going in the wrong direction and that includes assumptions of substantial increases and uses of renewable energy. So, if we are going to take biofuels off the table or other kinds of negative emissions technologies, we are really going to have to massively commit to renewables in ways that maybe we just won't.

One of the things that we should be looking at in terms of negative emissions technology is funding research and development with some of the other forms of negative emissions technology so it would be more benign. There is something called direct air capture. It is using these ugly things called artificial trees that essentially use large filters that suck in the ambient air, separate out the carbon dioxide, and then store it. Those do not require significant uses

30. Karl-Heinz Erb et al., *Dependency of Global Primary Bioenergy Crop Potentials in 2050 on Food Systems, Yields, Biodiversity Conservation and Political Stability*, 47 ENERGY POL'Y 260, 267 (2012).

31. On June 9, 2017, the U.S. government filed a petition for writ of mandamus, asking the U.S. Court of Appeals for the Ninth Circuit to stay the district court proceedings. The motion is still pending. *United States v. U.S. District Court for District of Oregon*, No. 17-71692 (9th Cir.).

of land, water, and so on. Those potentially might make sense, as could some of the other forms. Right now, we are not funding those virtually at all.

The real worry I think with BECCS is—because the IPCC assumptions are really baking in an assumption that we're going to have 10 gigatons of BECCS—if we are not going to do that, if we are going to conclude that from a socioeconomic and justice perspective that it is not viable, we need to be making that decision now and escalating commitments to renewables, as you suggest.

**Audience Member Two:** I'm interested about the strategy behind an atmospheric trust case versus a case that relies on NDCs or policy implementation. In your studies of the cases that took these different approaches, do you understand the pros and cons of taking one versus the other, kind of constitutional growth versus a policy implementation? Could you speak more about which one was relevant in which case and why you think they took that approach?

**Randall S. Abate:** The constitutional approach is clearly not the easy path to success. I think that is a function of the challenge that we face in the United States, that we have to be more ambitious, creative, and persistent with our legal theories. That is certainly something that offers some potential for success. However, outside the environmental context, we have a tradition of judicial precedent that was essentially a judge-made evolution of constitutional rights and values that were not in the original Constitution.

There's some leverage there for it to be possible. But because we have nothing and we're trying to create something in terms of a government response, the legal theories have to be more ambitious. I think the NDC approach is certainly more viable for more short-term success, because it is essentially seeking to either enforce what is currently not being enforced or to enhance what is not being enforced well enough. Maria can speak more to that.

**Maria Antonia Tigre:** Yes. From a foreign court's perspective, I cannot say a lot about the strategy behind it. I do not know why they decided to go one way or the other. But I think now we have maybe three different ways in which climate justice litigation is moving forward in some of the countries. The constitutional approach is one of those. I think in that case, the goal would be to directly link climate change to the human rights aspect of that as well, which I think in terms of the long-term approach, a long-term goal is better.

Like Randall said, the policy implementation is more short-term, but in a sense maybe easier because it is trying to enhance something that is already there—either a law or policy framework that has already been agreed on by the government, and therefore trying to improve what already exists.

The third trend of cases is trying to target specific projects as well. There were two decisions earlier this year, one in Austria and the other in South Africa, in which they

used climate change arguments to hold specific private projects accountable and they succeeded in that as well.

**Patricia Ferreira:** Adding to the question about policy versus judicial approaches, I think that, as Wil mentioned, we are still so far away from the targets that we have needed. So, we need all of the above. We have seen, so far, what the courts can do. The executive and legislative branches in key countries are not active enough. Therefore, as we think about this strategically, we have to use all tools at our disposal. The strategy has to be a multipronged one.

Also, it is very fluid. In the United States, we had a more proactive executive for a few years. Now, it is the opposite. The emerging economies were trying to drag their feet in terms of assuming more responsibility, and now China has become a new leader in global climate action. So, there has to be flexibility as well with those strategies.

**Audience Member Three:** This pertains to historical cumulative emissions. I think, and correct me if I'm wrong, but the numbers you were using were derived by site of pollution, which is the standard way to do it and relatively straightforward. Arguably, in a transboundary context, when you're applying the polluter-pays principle, it makes sense to move some of the bill with the good for export whose economic benefit is going to a receiving country, which is of course much harder to do. I recall some work on this accounting method six or seven years ago. Is that an active part of the discussion on historical responsibility now? Is it even a useful point to try to make in the present negotiating circumstances?

**Patricia Ferreira:** That is an interesting question because, in fact, how to account is a huge challenge, too. There are many attempts. For example, the World Meteorological Organization is trying to find ways to check what the countries are reporting in terms of their own emissions. But there are all of those challenges that you mentioned—and who should pay the bill? There are questions of trade and carbon adjustment, if there is a carbon pricing policy. Those are thorny questions.

At the global level, in the negotiations, in the end, it is a political compromise on what exactly countries will accept. Right now, all those questions have been put aside in a way, but they always pop up again in each and every negotiation. So, we are going to see that again in May at the Bonn Climate Change Conference Intersessional meeting, and we are going to see that again in Bonn at the end of the year at the 23rd Conference of the Parties.

The best resource to look at for the state of these discussions is the IPCC reports because they include technical discussions and questions and the state of the art of discussions on accounting of carbon emissions and now on the distribution as well.

**Audience Member Four:** My question is related to permanent relocation as a climate adaptation strategy, which

many nations and communities are facing. There are a lot of climate justifications with that and, to my knowledge, there has not been a lot of litigation around this issue except for maybe the *Kivalina* case to try and get damages to help with the relocation process. Of course, that wasn't successful.

Have any of you thought about the balance between policy and legal pathways forward to help some of these nations and communities get the resources that they need in a way that protects their cultural and indigenous practices and human rights?

**Wil Burns:** I think one potential mechanism that is underutilized at this point—hopefully it will be utilized more—is the loss and damage provision of the Paris Agreement Article 8. Article 8 contemplates looking at needs for permanent relocation efforts to privilege keeping people within their countries and protecting economic and cultural patrimony and establishing funding mechanisms to ensure that that happens.

I would strongly encourage developing countries to hold developed countries to the fire in that context because one of the things that they did was essentially give away their right to claim liability for damages associated with climate change in exchange for this provision. There is a formal mechanism and there is a review coming up in terms of the adequacy of those measures and what other measures could be taken in the future.

**Randall S. Abate:** There are three chapters in the book that address this issue on varying levels. This is a critical

issue and it has major human rights implications. One of the biggest challenges right now is the term “refugees.” It is a term that is creating some baggage. The idea falls in the void between international environmental protections and international human rights protections; the notion of climate refugees does not fit the current definition of “refugee” under the Refugee Convention.<sup>32</sup>

As Wil noted, there is nothing in the Paris Agreement's approach to expressly embrace the rights of the climate-displaced. It appears that the best short-term solution is international funding mechanisms. We have the Green Climate Fund. It is not quite where it needs to be in terms of robust financial grounding, but, ultimately, to the extent we are sending large sums of money from the developed to the developing world, estimated at \$100 billion per year, it is serving a valuable purpose. Part of that funding could be earmarked for climate relocation in developing countries. It is likely to take place on more of a regional level instead of global-to-global kind of support.

I think we are going to see hot spots of climate refugee issues in the South Pacific and the Arctic and there might be some regional frameworks that could be built up that would be much more effective than some kind of international climate refugee treaty, which would take a decade or more to operationalize. The response to the climate displacement problem is a patchwork right now and is not happening fast enough.

**Rachel Jean-Baptiste:** Thank you, speakers, and thank you all for joining us.

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32. Convention Relating to the Status of Refugees, 189 U.N.T.S. 150 (entered into force Apr. 22, 1954).