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Nadia B. Ahmad

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“MASK OFF”¹—THE COLONIALITY OF ENVIRONMENTAL JUSTICE

NADIA B. AHMAD[†]

I. INTRODUCTION

Justice is the foremost virtue of the civilizing races. It subdues the barbarous nations, while injustice arouses the weakest.

--José Rizal²

His writings sparked the Philippine Revolution.³ Officials in the Spanish colonial government would execute him for the crime of rebellion.⁴ Even though he did not partake in the planning of the revolution, he ultimately supported the goal of Philippine independence. José Rizal was not just referring to environmental justice in the above passage, but his words are also appropriate to describe the conceptualization of environmental justice between what Rizal terms “barbarous nations” and “the weakest.” This dichotomy between the powerful and the powerless parallels the simultaneous struggle between the corporate form and the environment. The “barbarous” elite are concerned with the interests of the corporation while the masses (“the weakest”) are concentrating on sovereignty, survival, and self-determination.

On account of their interrelated colonial, post-colonial, and neocolonial configurations, Puerto Rico, Pakistan, and the Philippines illustrate the difficulty of using environmental justice as a tool to achieve equality and correct environmental imbalances in the built world. All three places serve

¹ FUTURE, MASK OFF (Epic Records 2017).

[†] Associate Professor of Law, Barry University Dwayne O. Andreas School of Law; B.A., University of California, Berkeley; J.D., University of Florida Fredric G. Levin College of Law; LL.M. in Natural Resources and Environmental Law and Policy, University of Denver Sturm College of Law. This article has benefited from discussions at the inaugural Margaret Montoya Workshop at Campo Sano and the National Environmental Health Association and U.S. Department of Housing Healthy Homes Annual Conference in Anaheim. Special thanks to Barry University School of Law and my dean, Leticia Diaz, for the creative space and intellectual support to facilitate this research. Much appreciation extended to the research assistance of Dillon Andreassi, Susan Larned, and Emilia Soliman. Thanks to Cathren Page for feedback on this article. A note of gratitude to Akmal, Senan, Hanan, Jihan, my parents, and my siblings for their unyielding love and support.

² MARIA STELLA S. VALDEZ, DR. JOSE RIZAL AND THE WRITING OF HIS STORY 306 (2007).

³ Tracy B. Ravin, *José Rizal: Philippine National Hero and Ophthalmologist*, 119 ARCHIVES OF OPHTHALMOLOGY 280, 280 (2001)

⁴ See generally AUSTIN CRAIG, LINEAGE, LIFE, AND LABORS OF JOSÉ RIZAL, PHILIPPINE PATRIOT: A STUDY OF THE GROWTH OF FREE IDEAS IN THE TRANS-PACIFIC AMERICAN TERRITORY (1913).

as strategic geopolitical outposts, house significant U.S. military installations, and have been subjected to colonial domination. These places and their environmental issues make excruciatingly clear that the notion of environmental justice is a continuation of the colonial sociolegal apparatus to strip individuals and communities of environmental rights when basic human dignity is denied. Environmental justice at its core assumes caste-like racial hierarchies and attempts to offer a rights-based approach to providing environmental and civil rights to minority, low-income, and indigenous communities. When the entire native population is a community of color existing in the way of a strategic military outpost, environmental justice is further problematized.

Peruvian sociologist, Anibal Quijano, argued that the “model of power that is globally hegemonic today presupposes an element of coloniality.”⁵ This article extends Quijano’s framework for the coloniality of power to the notion of environmental justice as a colonial construct in that the lives and wellbeing of communities of color, the poor, and indigenous groups stand in the way of capital accumulation of the elite, and are subordinated and sacrificed in the hegemonic processes of conquest and control. I posit that the Sendai Framework for Disaster Risk Reduction 2015-2030, which deploys a race-neutral lens, but carries an awareness of North-South and South-South hierarchies, is better able to address the plight of the lack of environmental rights and human dignity than environmental justice on its own.⁶

From disaster preparedness to disaster relief, alternate emergency responses are given to communities based on their zip codes and phenotypes. Acute responses for disaster relief are ferreted out based on the skin color and bank balances of the impacted. This Article is the fourth in a series related to the law and policy of advanced biofuels and environmental justice with a focus on sudden onset water hazard events or, more broadly known as, natural hazards. The sudden onset water hazard events are exacerbated by manmade disasters indicative of systematic discrimination. Previously, I examined international dimensions in *Blood Biofuels* (Duke Environmental Law & Policy Forum), federal efforts in *Resiliency and Responsive Regulation for Advanced Biofuels* (Virginia Environmental Law Journal), and municipal initiatives in *Energy for Metropolis* (University of Miami Law Review).

This Article proceeds in three parts. Part II theorizes the coloniality of environmental power by highlighting the deceit of integration in the

⁵ Anibal Quijano, *Coloniality of Power, Eurocentrism, and Latin America*, 1 NEPANTLA: VIEWS FROM SOUTH, 533, 533 (2000).

⁶ Sendai Framework for Disaster Risk Reduction 2015-2030 was adopted by the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan in 2015: The Sendai Framework is a fifteen-year, voluntary, non-binding agreement that maps out a broad, people-centered approach to disaster risk reduction, succeeding the Hyogo Framework for Action that was in force from 2005 to 2015. *Sendai Framework for Disaster Risk Reduction*, UNDRR <https://www.unisdr.org/we/coordinate/sendai-framework> (last visited Feb. 12, 2019).

transmodern environmental heterodoxy. Part III portrays the case studies of three specific environmental “natural” disasters in Puerto Rico, Pakistan, and the Philippines. Finally, Part IV explores the agenda for disaster risk reduction and how the use of advanced biofuels can improve negative outcomes for energy access post-disaster.

II. COLONIALITY OF ENVIRONMENTAL POWER

Environmental justice did not first emerge in the poor, rural, and predominantly African American community of Warren County, North Carolina, in 1973.⁷ The concept of environmental justice has been present ever since low-income people, communities of color, and indigenous groups have been marginalized; from ancient times to the height of the transatlantic slave trade to the transmodern era of the current global regimes.⁸ There is an ongoing colonial enterprise to subdue and denigrate populations in order to advance commercial endeavors at the expense of the beleaguered and marginalized classes and groups within societies. Quijano uses the theoretical framework for what he refers to as the “coloniality of power” to show the disparity of wealth, labor, and resources. His analysis is instructive for a reformulation of environmental justice. Quijano expresses how colonialism created the convergence of two axes of power: 1) “the codification of the differences between conquerors and conquered in the idea of ‘race,’ a supposedly different biological structure that placed some in a natural situation of inferiority to the others[.]” and 2) “a new structure of control of labor and its resources and products.”⁹ Prior to the colonization of America, the concept of race as it is now known did not exist, but race would become the modality to grant “legitimacy to the relations of domination imposed by the conquest.”¹⁰ The conquest of America was the point that race emerged as

⁷ Renee Skelton & Vernice Miller, *The Environmental Justice Movement*, NRDC (Mar. 17, 2016), <https://www.nrdc.org/stories/environmental-justice-movement>. See also Nadia Ahmad, *The Baseline Bar*, 65 KANSAS L. REV. 579 (2017). The state government decided that Warren County would be the ideal location for 6,000 truckloads of soil laced with toxic polychlorinated biphenyl known as PCBs, which are carcinogenic in nature and are toxic to the environment and human health, leading to endocrine disruption and neurotoxicity. The dump trucks began arriving in Warren County in mid-September, 1982, headed for a newly constructed hazardous waste landfill in the small community. But many residents and their supporters were understandably upset that the state officials dismissed their concerns over PCBs leaching into drinking water supplies, and they met the trucks as they were heading to the landfill. And they stopped them, by risking their lives, by lying down on roads leading into the landfill. “Six weeks of marches and nonviolent street protest protests followed, and more than 500 people were arrested . . .” This was the first time in U.S. history where arrests were issued over the siting of a landfill. *Id.*

⁸ Mustapha Ali, Keynote Address at the Yale University School of Law New Directions in Environmental Law Conference (Mar. 2, 2018).

⁹ Quijano, *supra* note 5, at 533–34.

¹⁰ *Id.* at 534.

a position to set forward “ranks, places, and roles in the new society’s structure of power.”¹¹ Only once race is recognized as a means of subordination can the next phase begin: environmental subordination. The races inferior to the Anglo-Americans were not allowed access to the same level of environmental protection, as they faced higher environmental threats because of displacement, disease, slavery, and migration. The control of labor and production would create new hierarchies in society based on race.¹² Quijano lays out the Eurocentricity of world capitalism:

The privileged positions conquered by the dominant whites for the control of gold, silver, and other commodities produced by the unpaid labor of Indians, blacks, and mestizos (coupled with an advantageous location in the slope of the Atlantic through which, necessarily, the traffic of these commodities for the world market had to pass) granted whites a decisive advantage to compete for the control of worldwide commercial traffic.¹³

Seeing the origins of race rooted in the origins of the history of the American colonial enterprise shows the lineage of environmental justice. If the discussion of environmental justice begins in Warren County, it overlooks centuries of environmental denigration, pollution, and toxicity in communities, who carried the burden of the capital enterprise through the loss of their lands, livelihoods, and lives while the elite benefited from their toils. The environmental disparities since Christopher Columbus’ maiden voyage cannot accurately be traced or quantified but, at this point, the harm caused by Columbus should be acknowledged.¹⁴ Even if such an acknowledgment is not forthcoming, there should be a recognition that environmental justice places the burden on already marginalized communities to assert their basic human dignity in the form of permitting processes in the transmodern context.

A. *The Deceit of “Integration”*

The displaced farmer in water-stressed Peshawar killed by a drone strike, the villager in the Caroline Islands who dies from flooding, and the

¹¹ *Id.* at 535.

¹² *Id.*

¹³ *Id.* at 537.

¹⁴ Eugene Scott, *Trump and the White House don’t acknowledge Native Americans in push not to ‘erase’ Columbus’s legacy*, L.A. TIMES (Oct. 9, 2017), https://www.washingtonpost.com/news/the-fix/wp/2017/10/09/trump-and-the-white-house-dont-acknowledge-native-americans-in-push-not-to-erase-columbus-legacy/?noredirect=on&utm_term=.b1f074d6e9bb.

grandmother in San Juan enduring poor medical facilities following Hurricane Maria are interrelated water hazard events because the precipitating and the final stresses were from natural hazards, environmental threats, and manmade disasters. The lack of arable water drives poor farmers into cities without jobs and access to education. Large development banks enter into investment and financial agreements with Third World nations with the promise of jobs and infrastructure projects; instead, they leave behind debt and the dependency of First World financial structures to further worsen living and health conditions for Third World people. All this reordering is part of a larger structure of systematized subordination of lower classes and lesser races. How can lower classes and lesser races respond to these environmental threats which they did not create? These hazardous waste sites, mine tailings, water contamination, oil pollution, nuclear waste, etc. were left in the wake of colonialism, the neocolonial military industrial complex, agrobusiness enterprises, and the broader postcolonial project. This subsidizes First World farmers at the expense of bordering countries with lower labor and production costs. The entire American capital system is based on racial hierarchies, enslavement/incarceration/engagement of people of color, and the financial subordination of the Third World as recompense for the lifestyle for the landed, monied, and elite of the Global North, marginalizing Third World and Third World-looking people within and at its borders.

Richard Lazarus and Stephanie Tai's 1999 article, *Integrating Environmental Justice into EPA Permitting Authority*, recognizes the weaknesses of civil rights law and turns to environmental law: "[e]nvironmental law's ability to provide such redress, however, turns largely on the answers to controversial questions respecting permitting decisions under existing federal environmental statutes."¹⁵ The shift away from civil rights still shows the problems with environmental law as complex, inaccessible, and problematic, riddled with litigation delays. Historically, environmental law was designed to protect and shield hegemonic notions of wealth and capital accumulation. Environmental law

¹⁵ Richard J. Lazarus & Stephanie Tai, *Integrating Environmental Justice into EPA Permitting Authority*, 26 *ECOLOGY L.Q.* 617, 619 (1999).

The first question is whether the Environmental Protection Agency (EPA) has the authority to condition on environmental justice grounds permits that the Agency (and states with federally-approved programs) issues to regulated entities pursuant to the various federal environmental protection laws administered by EPA. The second related question is the extent to which that permitting authority (federal or state) may deny a permit altogether solely on environmental justice grounds.

inter alia protects aesthetic and natural viewsheds of hedge fund billionaires.¹⁶

Integration is the buzzword for the American attempt at decolonizing public places since the 1950s. Yet what was integration? Allowing people of color to share toilet seats and drinking fountains? Sharing classrooms? And *integrating* environmental justice? The sharing of environmental laws? The whole notion of sharing led to sharing natural resources i.e. colonization. Sovereignty is about “what’s yours is yours” and “what’s mine is mine.” Colonialism is fixated on sharing and ignoring natural resource sovereignty.

Meanwhile, environmental law as a field is completely remote to the groups protected by environmental justice. When and how are individuals and groups who are surviving off of government-assistance for food, utility payments, and housing able to develop the wherewithal to make environmental justice claims?¹⁷ Pollution, chemical contamination, and toxicity are acceptable in impoverished communities, where lives are expendable in the push for capital accumulation and wealth maximization. Grassroots environmental activism is only taking place in inner cities at the small scale.¹⁸ The very concept of environmental justice is an insult. Environmental justice, as currently construed, is the state’s gratuitous attempt on environmental protection so poor people, people of color, and indigenous groups have the same rights as the rest of society.¹⁹ These groups

¹⁶ See generally Nadia Ahmad, *Billionaires, Birds, and Environmental Brawls: Reconceptualizing Energy Easements*, 6 WASH. & LEE J. ENERGY, CLIMATE, & ENV'T 3 (2015).

¹⁷ “Environmental justice issues arise most commonly in the permit approval process, but these issues also surface in state agency practices during day-to-day operations.” Ellen M. Peter, *Implementing Environmental Justice: The New Agenda for California State Agencies*, 31 GOLDEN GATE U. L. REV. 529, 566 (2001).

¹⁸ Majora Carter et al., *Whose Survival - Environmental Justice as a Civil Rights Issue*, 13 N.Y. CITY L. REV. 257, 258 (2010).

One of the movement's main objectives is to empower residents of a community to gain greater control over the use of land and resources in their neighborhoods. Another is to provide opportunities to benefit from the environment such as access to healthy food, clean air, parks, and jobs in the growing green economy that will help communities survive our deepening economic crisis.

Id.

¹⁹ Raina Wagner, *Adapting Environmental Justice: In the Age of Climate Change, Environmental Justice Demands A Combined Adaptation-Mitigation Response*, 2 ARIZ. J. ENVTL. L. & POL'Y 153, 172 (2011). Raina Wagner argues for a combined adaptation-mitigation response for environmental justice:

The principles of the EJ Movement have always shifted the focus of environmental activism. If an active, affluent community succeeds in keeping pollutants out of its neighborhood, state, or even nation, some would view that as success. If the success is simply to move the emitted pollutant to another, poorer, less-activist community, state, or nation, the Environmental Justice activist will view the activity as a failure. Because of the specific goals of the EJ Movement,

need another layer of laws or another set of hurdles to access the rights available to everyone else.

Consider the term, “integration.” Merriam Webster defines it as:

[T]he act or process or an instance of integrating: such as a: incorporation as equals into society or an organization of individuals of different groups (such as races) . . . coordination of mental processes into a normal effective personality or with the environment . . . the operation of finding a function whose differential is known . . . the operation of solving a differential equation.²⁰

Integration—also a mathematical term—is linked to the idea of desegregation, which amounts to allowing people of color into historically white spaces. The field of environmental law is a white space. In this academic field of hundreds of environmental law professors across the Americas, I am the only one who looks like me. The terrain of environmental law and policy is not precisely unwelcoming, but it is disinviting for those of us who are not male, pale, and stale.²¹ Environmental justice is an attempt to provide those who have limited economic means and/or are from minority or indigenous communities a way into the elite space of environmental law though executive orders without teeth²² and weak case law.²³

the success of any environmental activity will be assessed in terms of the ability of the poor, minority, and underserved communities to take advantage of the benefits. With the United States on the cusp of becoming a cap-and-trade nation, American programs that help humans *adapt* to the ways we have changed the world could lead the way to justice for all.

Id.

²⁰ *Integration*, MERRIAM WEBSTER DICTIONARY, <https://www.merriam-webster.com/dictionary/integration>. Integration is defined as:

[T]o form, coordinate, or blend into a functioning or unified whole . . . to find the integral of (something, such as a function or equation) . . . to unite with something else . . . to incorporate into a larger unit . . . to end the segregation of and bring into equal membership in society or an organization.

Id.

²¹ Martin Daubney, *Pale, male and stale: is being a white man now bad for your career?*, TELEGRAPH (Jan. 9, 2018, 12:34 PM), <https://www.telegraph.co.uk/men/thinking-man/pale-male-stale-white-man-now-bad-career/>.

²² See Exec. Order No. 12898, 32 C.F.R. § 651.17 (1994).

²³ See generally *Alexander v. Sandoval*, 532 U.S. 275 (2001).

Sabr is the Arabic word for “patience.”²⁴ The refrain of patience is the adage for waiting our turn for environmental justice. The trouble is natural resources are being depleted before our eyes; the polar ice caps are thunderously disappearing; and soil, air, and water are being irreparably damaged. Once we complete our turn at patience for contesting permitting of sites in spaces that would not be on the table for the rest of society, we may have a shot at a shred of environmental justice, only to watch it dwindle away in a court system inhospitable to the interests of working-class groups, people of color, and indigenous communities. While these communities are not monolithic, they share the similar outcomes of environmental damage at the expense of their human dignity.

However noble attempts at environmental justice may be, they fall short and will continue the dehumanization process for the communities they seek to assist. Integration is designed “to eliminate segregation in; *specifically*: to free of any law, provision, or practice requiring isolation of the members of a particular race in separate units.”²⁵ Every time I hear the word “integration,” it stings. *We all of sudden decided to treat you as equal after centuries of subordination, subjugation, and control. We have been letting you into our spaces for decades now. We have INTEGRATED.* Instead of integrating environmental justice into the environmental rights framework through the permitting process for the National Environmental Policy Act, Clean Air Act, Clean Water Act, etc., an exhaustive decolonization of environmental justice is needed.²⁶ The purging of environmental law’s colonial past will allow it to lead to the desired results and more equitable outcomes. Except how does one decolonize nature once it has already been colonized?

²⁴ Mervyn Lewis, *Accountability and Islam*, Conference Paper presented at Fourth International Conference on Accounting and Finance in Transition Adelaide (April 10–12, 2006).

²⁵ *Desegregate*, MERRIAM WEBSTER DICTIONARY, <https://www.merriam-webster.com/dictionary/desegregate>. The formation of the elite Tuskegee Airmen came about because of the pressure civil rights organizations and the black news media put on the United States to desegregate the military. Brandon Patterson, *Tuskegee Airman honored 73 years after being lynched in Austria*, DETROIT FREE PRESS (May 27, 2018, 6:01 AM), <https://www.freep.com/story/news/local/michigan/2018/05/27/tuskegee-airman-honored-easter-austria/549023002/>. “Racist sentiment is built into the fact that the state government squeezes the funds for public schools, which might technically be desegregated but remain very segregated because the whites who have the money send their children to private schools.” Jesmyn Ward, *Racism is ‘Built into the Very Bones’ of Mississippi*, ATLANTIC (Mar. 1, 2018), <https://www.theatlantic.com/magazine/archive/2018/02/jesmyn-ward-mississippi/552500/>. But in the Army as a whole, Jim Crow was alive and well: the United States military would be desegregated only in 1948, by executive order of President Harry S. Truman. Margalit Fox, *Dovey Johnson Roundtree, Barrier-Breaking Lawyer, Dies at 104*, N.Y. TIMES (May 21, 2018), <https://www.nytimes.com/2018/05/21/obituaries/dovey-johnson-roundtree-dead.html>.

²⁶ *Decolonize*, MERRIAM WEBSTER DICTIONARY, <https://www.merriam-webster.com/dictionary/decolonize> (defining decolonize as “to free from colonial status”).

B. Transmodern Environmental Heterodoxy

One thing I tried to show in my travels so far is that this is not just an urban issue. It’s also a rural issue. And whether it’s pesticides put on crops affecting farmworkers, or mine runoff, or how they dispose of their toxic materials, we are living in a nation where more and more, we need a vigilant federal government to protect people. But the EPA is now controlled by people who are more in line with industry’s desires than they are with protecting families and communities from these toxins. The environmental justice issues in this country are not going to get better, they will get far worse under a president like this who has shown no desire to hold corporations and powerful interests in our country accountable.

-- U.S. Senator Cory Booker (D-NJ) ²⁷

I marvel at Sen. Booker crisscrossing the nation to document and draw attention to the environmental plight of communities and raise awareness for the issue of environmental justice. The environmental justice bill would be a game changer for the movement for environmental justice. The ABA Section of Civil Rights and Social Justice organized a program titled, “Environmental Justice in the 21st Century: Threats and Opportunities,” featuring a keynote address by U.S. Senator Cory Booker at the ABA’s Washington, D.C. office.²⁸ The intent behind the program was to motivate the next generation of environmental justice advocates. On October 24, 2017, Sen. Booker and U.S. Rep. Raul Ruiz, M.D. (D-CA) introduced a landmark piece of legislation to eliminate environmental injustice.²⁹

The Environmental Justice Act of 2017 (“EJA”) mandates that federal agencies respond to “environmental justice through agency actions and permitting decisions, and strengthens legal protections against environmental injustice for communities of color, low-income communities, and indigenous communities.”³⁰ “The bill is the culmination of a months-long process of working with dozens of grassroots organizations across the country to craft a

²⁷ Brentin Mock, *Cory Booker Wants to Tackle the ‘Corporate Villainy’ Behind Environmental Injustice*, CITY LAB (Nov. 13, 2017), <https://www.citylab.com/equity/2017/11/cory-booker-environmental-justice/545534/>.

²⁸ Scott Badenoch, *Environmental Justice Act of 2017: A Monumental Opportunity*, ENVTL. L. INST. (Nov. 27, 2017), <https://www.eli.org/vibrant-environment-blog/environmental-justice-act-2017-monumental-opportunity>. By way of disclosure, I serve as co-Chair of the CRSJ Environmental Justice Committee.

²⁹ *Id.* “The EJA has been endorsed by over 40 public health and environmental justice organizations, as well as the American Bar Association’s President Hilarie Bass.” *Id.*

³⁰ Press Release, Senator Cory Booker, Booker Announces Landmark Environmental Justice Bill (Oct. 23, 2017), https://www.booker.senate.gov/?id=685&p=press_release.

comprehensive bill that strengthens environmental justice protections for vulnerable communities.”³¹ This program also featured a panel discussion on Sen. Booker’s landmark environmental justice legislation and “the various ways the EJA addresses critical issues for vulnerable communities nationwide (especially communities of color) in light of historical, ongoing challenges, as well as new ones posed by the Trump Administration.”³² Other topics addressed included changes at the Office of Environmental Justice of the EPA; recent appointments at the EPA and the changing role of science in decision-making; and challenges to community efforts in support of environmental protection for clean air, water, and land via threats to citizen suits and enforcement.³³

The environmental justice bill falls in line with the idea of transmodernity, which is a tool for analyzing cultures and beliefs.³⁴ The idea of transmodernity is evident in the power dynamics of the European Union (“EU”). While transmodernity and the EU experiment do have numerous flaws, this concept provides an additional means of reformulating the environmental hegemony to be more inclusive and Earth-centered instead of responsive to corporations. Marc Luyckx Ghisi explains four levels of the transmodern transformation: 1) “[t]he lowest (subconscious) level is the danger of Humanity killing itself;” 2) “[e]nd of patriarchal values and

³¹ *Id.*

³² *Id.*; *Environmental Justice in the 21st Century: Threats and Opportunities*, ENVTL. L. INST., <https://www.eli.org/events/environmental-justice-21st-century-threats-and-opportunities> (last visited Jan. 23, 2019).

³³ Senator Booker was joined on the panel by Mustafa Ali, Vice President of Climate, Environmental Justice & Community Revitalization for the Hip Hop Caucus and former head of the EPA’s Office of Environmental Justice; Patrice Simms, Vice President of Litigation for Earthjustice, and former attorney at the U.S. Environmental Protection Agency, the U.S. Department of Justice – Environment and Natural Resources Division, and the Natural Resources Defense Council; and moderator, Randy Hayman, Principal of Beveridge & Diamond, P.C., and former General Counsel of DC Water. *Id.*

³⁴ Marc Luyckx, *The transmodern hypothesis: towards a dialogue of cultures*, 31 *FUTURES* 971(1999). Luyckx states:

For a Brussels Seminar at the European Commission, a “double hypothesis” was proposed: that we are in transition to a *transmodern* way of thinking that combines intuition and spirituality with rational brainwork; and that 21st century conflicts will likely be not between religions or cultures but within them, between premodern, modern, and transmodern worldviews. Non-Western thinkers find this framework useful: it opens a door to criticism of the worst aspects of modernity without being “anti-Western”. Western reactions are more mixed, some critics wanting to maintain a high fence between religion and governance, others welcoming the transmodern concept as helpful in relating states to religions, and in analyzing conflicts involving beliefs about belief. “Transmodernity” turns out to be a rich tool of analysis, with important implications for European foreign policy in the century to come.

presence of a new sacred;" 3) "[t]he third level is the end of modernity.... [f]rom modern extreme intolerance to transmodern radical tolerance;" and 4) "[t]he fourth level TRANSMODERN ECONOMY: [e]nd of industrial capitalism and birth of an intangible postcapitalist society."³⁵ The move toward transmodernity is aligned with the goal of achieving environmental justice, not through rapprochements, but as collaborations and partnerships. The beleaguered state of environmental laws in the United States requires new approaches from meta-regulation in the corporate realm to transmodernity in the environmental sphere.³⁶ Climate change may have evaded the vocabulary of some state and federal agencies, but the concern of climate change has not disappeared.³⁷ In fact, climate change has intensified as result of the lack of policy to address it by the leader of the free world.³⁸

³⁵ Marc Luyckx Ghisi, *Towards a Transmodern Transformation of our Global Society: European Challenges and Opportunities*, 15 J. FUTURES STUD. 39, 39–48 (2010).

³⁶ See Nadia Ahmad, *Meta-Regulation for Environmental Monitoring and Corporate Sustainability Reporting*, CORPORATE RESPONSIBILITY & SUSTAINABLE DEVELOPMENT: EXPLORING THE NEXUS OF PRIVATE AND PUBLIC INTERESTS 177 (Routledge) (2015).

³⁷ Coral Davenport, *How Much Has Climate Change Been Scrubbed from Federal Sites? A Lot.*, N.Y. TIMES (Jan. 10, 2018), <https://www.nytimes.com/2018/01/10/climate/climate-change-trump.html>.

³⁸ What is so frustrating about environmental justice is that negative impacts to public health are so great, but the work done to abate those impacts is so limited:

In the case of emerging environmental health threats like PCBs in schools, it's very hard for people to grapple with health risks that are serious but not immediate. Environmental health effects are compounded and combined over the course of childhood and adolescence and into adulthood. So you're talking about latent impact and risk, which can be very difficult to organize around, given that the communities with which we work face immediate and harrowing problems, particularly in this economy. Environmental health risks can seem abstract--like luxury issues. And at the same time, paradoxically, there is parents' terror, and sometimes consequent denial, about the impact of environmental toxins on their children.

These anxieties are well-placed: such impacts can be irreversible and profound, expressed over decades. In addition, we confront a reactionary body of law and policy that fundamentally fails to protect against these harms. These failures of U.S. toxics law and policy truly threaten the health of human residents of North America, and in a familiar, disturbing manner, the distribution of harm is sharply unequal along the lines of race and class. Environmental health problems affect wealthier and whiter communities as well, but the connection of race and class to the distribution of harm is wholly unacceptable in a society that purports to be democratic and egalitarian.

In sum, while various factors combine to make organizing around children's environmental health a challenge, the urgency of the issues provides jolts of motivation, as do the profound rewards of working in partnership with community members engaged in struggle with those same challenges. I hope the PCBs campaign has provided a concrete example of how community lawyering and environmental justice can work in practice.

Annise Katherine Maguire argues that ineffective laws for environmental justice stand in the way:

The difficulties faced by communities fighting environmental injustice do not end at agency inaction. Permitting under the [Clean Air Act] presents a substantial obstacle to successfully challenging agency actions that negatively impact minority and low-income communities. The ease with which companies have been able to obtain permits for the construction or modification of facilities that disproportionately burden minority and low-income communities is startling.³⁹

The next section turns to the similarities and distinctions of Puerto Rico, Pakistan, and the Philippines in responding to sudden onset water hazard events and how access to energy following a disaster is a significant consideration in terms of environmental justice.

III. CASE STUDIES OF SUDDEN ONSET WATER HAZARDS EVENTS

This section examines access to energy and the diversity of the energy portfolio in responding to extreme weather events in the transmodern environmental sphere. Access to energy impacts the ability of low-income, minority, and indigenous groups to handle natural disasters exacerbated by ongoing climate change. This section anticipates efforts at resiliency in light of water hazard events in the Global South, with a focus on Puerto Rico, Pakistan, and the Philippines. Frontline communities are most vulnerable to water hazards and the impacts of climate change. In Section III, I evaluate alternate legal mechanisms for environmental justice, climate change adaptation, and energy access in response to catastrophic water hazard events.

The United Nations defines “rapid onset disaster” as “one triggered by a hazardous event that emerges quickly or unexpectedly.”⁴⁰ The intersection of these water hazard events with U.S. military interests demonstrates the problems of environmental justice outside of the borders of the United States *per se*. Puerto Rico is a commonwealth, former colony, and neocolony of the United States. Pakistan is a former colony of the British of which the United

Majora Carter et al., *Whose Survival - Environmental Justice as a Civil Rights Issue*, 13 N.Y. CITY L. REV. 257, 267–68 (2010).

³⁹ Annise Katherine Maguire, *Permitting Under the Clean Air Act: How Current Standards Impose Obstacles to Achieving Environmental Justice*, 14 MICH. J. RACE & L. 255, 262 (2009).

⁴⁰ Most hazardous processes are geologic processes. *Terminology*, UNDRR, <https://www.unisdr.org/we/inform/terminology> (last visited Feb. 15, 2019).

States was a former colony. Now the U.S. military enters Pakistan’s land and airspace for its military exercises to protect corporate interests in the region. The Philippines is a former colony of the United States and currently serves as a military outpost to the United States. While each of these areas has a unique history, geography, and geology, each also is prone to sudden onset water events. That vulnerability to sudden onset water hazards poses distinct challenges, especially for energy access. This section considers the shared and similar history of these three places and raises questions as to how environmental justice can be applied and reconfigured in places beyond the jurisdiction of U.S. environmental laws.

Economist Jeffrey Sachs notes that the United States sought to assert global leadership following World War II, using indirect rule.⁴¹ He contrasts this idea with direct rule, where “[e]mpires are most visible when they rule directly through conquest and annexation, such as in the American conquests of Hawaii, the Philippines, and Puerto Rico at the end of the nineteenth century.” Of indirect rule, Sachs states:

[E]mpires ... rule indirectly, when they use force, covert or overt, to depose a government they deem hostile and replace it with a government of their design, and that they intend to be under their control. Indirect rule—and regime change especially—has been the more typical American approach Yet the simple fact is that the United States very often had its own narrow interests at heart: oil wealth in the Middle East (such as Iran, 1953); valuable farmlands and industry in Latin America (such as Guatemala, 1954); and American military bases across the world.⁴²

⁴¹ Jeffrey Sachs, *Ending America's War of Choice in the Middle East*, 11 HORIZONS J. INT’L REL. & SUSTAINABLE DEV. 20, 22 (2018).

There are dozens of cases in which the CIA or American military has overthrown governments in Latin America, Asia, Africa, and the Middle East, with the aim of imposing indirect rule. America’s postwar empire-building coincided with the onset of the Cold War. More often than not, America justified its overseas wars and CIA-led coups as necessary to defend itself and its allies against the Soviet Union. American leaders shunned the language of empire and direct rule.

Id.

⁴² *Id.* at 22–23.

Columbia University Historian John Coatsworth has carefully documented an astounding 41 occasions of United States-led regime change in Latin America and the Caribbean between 1898 and 2004, a pattern that was later extended to Africa, Europe, Southeast Asia, and, more recently, the Middle East. The episodes on Coatsworth’s list are violent, extra-constitutional overthrows of Latin American

The trouble with indirect rule is that it creates indirect accountability and extinguished responsibility. Without democratic checks and financial transparency, the rule of law is sidelined in the favor of national security interests and covert intelligence operations. Environmental justice highlights different tiers of citizenship within the United States and the caste system for human dignity globally.

A. Puerto Rico Post-Hurricane Maria

The immediate aftermath of Hurricane Maria showed the deep vulnerabilities of the island. The U.S. Department of Defense reported that, two weeks after Hurricane Maria made landfall, only 5.4 percent of citizens on the island of Puerto Rico had electricity, while 12.1 percent had cell service.⁴³ For months afterward, communications remained a challenge on the island. As the impact of climate change is accelerating, marine environments and biodiversity are becoming increasingly vulnerable. Hurricane Maria brought in unprecedented levels of rainfall. “Many experts are confident that a warmer world will create stronger storms—and already is doing so.”⁴⁴ It has been predicted that future storm surges could worsen, partly due to sea level rise and partly due to the impending increase in the number of intense hurricanes.⁴⁵ The growing movement for environmental justice favors legislative reform of water regulations and the economic implications of such restructuring.

In April 2018, federal officials “expected to have a plan by June on how to strengthen and stabilize Puerto Rico’s electrical grid.”⁴⁶ The estimated cost for a new power grid has a price tag of \$17.6 billion, as DOE “officials are looking at integrating renewable energy sources and building micro grids around industrial sites, noting that Puerto Rico is heavily dependent on imported fuel and that

governments by the United States through a variety of means, including wars, coups, assassinations, electoral manipulation, acts of provocation, manufactured protests, and mass unrest.

Id. at 23.

⁴³ Elizabeth McLaughlin, *After Hurricane Maria 95 Percent Still Without Power*, ABC NEWS (Oct. 4, 2017), <https://abcnews.go.com/US/hurricane-maria-95-percent-puerto-rico-power/story?id=50276834>.

⁴⁴ Annie Sneed, *Was the Extreme 2017 Hurricane Season Driven Climate Change?*, SCI. AM. (Oct. 26, 2017), <https://www.scientificamerican.com/article/was-the-extreme-2017-hurricane-season-driven-by-climate-change/>.

⁴⁵ Michael Greshko, *Why This Hurricane Season Has Been So Catastrophic*, NAT’L GEOGRAPHIC (Sept. 22, 2017), <https://news.nationalgeographic.com/2017/09/hurricane-irma-harvey-season-climate-change-weather/>.

⁴⁶ *Puerto Rico to Rebuild Power Grid Using US National Standard*, VOA NEWS (May 7, 2018, 6:29 PM), <https://www.voanews.com/a/puerto-rico-to-rebuild-power-grid-using-us-national-standard/4383629.html>.

manufacturing represents nearly 50 percent of the island’s economy.”⁴⁷ The concern remains that “the grid will not be strong enough to sustain another storm despite the federal funds invested so far as the Atlantic hurricane season begins June 1.”⁴⁸ “As Puerto Rico has restored more of its ability to generate and deliver electricity, the number of customers without power has declined.”⁴⁹ Puerto Rico, like Pakistan, is heavily dependent on imported fuel and energy sources. Diversifying the energy portfolio through the use of advanced biofuels, solar, and wind power would be transformative.

B. Pakistan’s 2010 Monsoon Flooding

Extremes have become the new normal. As a part of an interdisciplinary research collaboration at Yale University’s Department of Geology, I participated in a workshop that provided an overview of monsoon variability in Asia, Australia, Africa, and North America. We focused on metrics and trend assessments for monsoon depressions, new observational and theoretical tools, and future directions for monsoon forecasting and idealized modeling systems.⁵⁰ The processes that govern the variability of monsoons are poorly understood but profoundly important.⁵¹ These seasonal storms deliver water to billions of people in Africa, Asia, and the Americas, and variations in monsoon strength can have devastating impacts on the inhabitants of these regions.⁵² The fragmented state of the international community that studies the phenomena compounds the challenge of understanding and, therefore, predicting them.⁵³ Looking beyond America’s own borders, it is important to consider energy projects in less developed countries (“LDCs”).⁵⁴ Among such prospects, “Pakistan is arguably

⁴⁷ *US Scrutinizes Power Restoration Efforts in Puerto Rico*, DAILY MAIL (Apr. 11, 2018, 6:36 PM), <https://www.dailymail.co.uk/wires/ap/article-5605473/US-scrutinizes-power-restoration-efforts-Puerto-Rico.html>.

⁴⁸ *Id.*

⁴⁹ David Ferris, *Puerto Rico’s Grid Recovery, by the Numbers*, E&E NEWS (Feb. 20, 2018), <https://www.eenews.net/stories/1060074219>. As of March 2018, “343,000 customers, representing an unknown number of individuals, were still without power.” “Since early December, when data were first available, the number of workers helping to repair the Puerto Rico grid rose from just over 3,000 to almost 6,000.” “Data from Puerto Rico’s power company show that while repair of the transmission network has made unwavering progress, the recovery of substations has flattened.” *Id.*

⁵⁰ Rain Tsong, *Patterns in Monsoons: Climate Change or Human Error?*, YALE SCI. (Mar. 29, 2015), <http://www.yalescientific.org/2015/03/patterns-in-monsoons-climate-change-or-human-error/>.

⁵¹ See generally J.V. Hurley & W.R. Boos, *Interannual Variability of Monsoon Precipitation and Local Subcloud Equivalent Potential Temperature*, 26 J. CLIMATE, 9507-9527 (2013).

⁵² *Id.*

⁵³ *Id.*

⁵⁴ See Nino Marchetti, *Small-Scale Renewable Energy in Developing Countries*, THE ENERGY COLLECTIVE (Feb. 24, 2012), <http://theenergycollective.com/namarchetti/77475/small-scale-renewable-energy-and->

the most vital country for advancing U.S. security interests.”⁵⁵ “Pakistan’s energy crisis is of concern not only to itself but also worldwide.”⁵⁶ “Having pledged over \$30 billion in aid to Pakistan since 1948, the United States has overlooked the feasibility of nascent energy technologies to relieve the country’s acute energy crisis.”⁵⁷ “As a part of the civilian assistance program to Pakistan, the U.S. Department of State and USAID recognized the need for alleviating energy poverty and creating sustainable energy options in Pakistan.”⁵⁸

Pakistan endures the western edge of the South Asian monsoon. “According to the World Bank, Pakistan is one of the most water stressed countries in the world, but at times there is too much water due to intense flooding.”⁵⁹ My research with Mushtaq Bilal discusses concerns related to water scarcity, flood control, environmental planning, and energy access. It also proposes solutions, suggesting policy imperatives for Pakistan’s government to improve urban and rural infrastructure at the national, subnational, and local levels.⁶⁰ In order to comprehend the extent of losses caused by the 2010 floods in Northern Pakistan, it should suffice to mention that the number of people (twenty million) affected by these floods was more

informal-economy (addressing arguments for the use of renewable energy in developing countries).

⁵⁵ Nadia B. Ahmad, “Turn on the Lights”—Sustainable Energy Investment and Regulatory Policy: Charting the Hydrokinetic Path for Pakistan, 5 WASH. & LEE J. ENERGY, CLIMATE & ENV’T 165, 166-67 (2013), available at <http://scholarlycommons.law.wlu.edu/jece/vol5/iss1/6>. See generally Int’l Sec. Advisory Bd., Final Report on Pakistan and U.S. Security Strategy (Oct. 9, 2012), available at <https://www.state.gov/documents/organization/199627.pdf> (detailing the critical nature of U.S.-Pakistani relations with respect to national security and the Department of State’s strategic plan for working with Pakistan).

⁵⁶ Ahmad, *supra* note 55, at 167; see Philip Reeves, *Energy Crisis Cripples Pakistan’s Economy*, NAT’L PUB. RADIO (July 5, 2013, 3:50 PM), <http://www.npr.org/templates/story/story.php?storyId=199114105> (describing Pakistan’s energy crisis and the chronic power outages that affect its citizens).

⁵⁷ Ahmad, *supra* note 55, at 167. See SUSAN B. EPSTEIN & K. ALAN KRONSTADT, CONG. RESEARCH SERV., R41856, PAKISTAN: U.S. FOREIGN ASSISTANCE i, 14, 34–35 (2013) (reporting changes in U.S. foreign assistance for various security, energy, and stability needs in Pakistan).

⁵⁸ Ahmad, *supra* note 55, at 167. See U.S. DEP’T OF STATE, CONGRESSIONAL BUDGET JUSTIFICATION: DEPARTMENT OF STATE OPERATIONS 141-42 (Fiscal Year 2013) (describing the Bureau of Energy Resources plan to advance market and regulatory reforms in renewable energy on a global scale to help developing nations like Pakistan and Iraq).

⁵⁹ Nadia B. Ahmad & Mushtaq ur Rasool Bibal, *Monsoons, Hydropower, and Climate Justice in Pakistan’s River Communities*, in CLIMATE JUST.: CASE STUD. IN GLOBAL AND REGIONAL GOVERNANCE CHALLENGES 473 (2016).

⁶⁰ See generally *id.* at 473, 476, 491. The notion of water scarcity itself is critical because it influences the views of users and policymakers on the urgency to address the water crisis along with their views on the most effective policies to address the water crisis.

than the combined number of people affected by the 2004 Indian Ocean tsunami, the 2005 Kashmir earthquake, and the 2010 Haiti earthquake.⁶¹

Biofuels can be harnessed and developed for foreign exchange as well as for improving the economy by growing the country’s renewable energy sector.⁶² Pakistan produces ethanol from molasses and can increase production from sugarcane crops.⁶³ The current regime requires the blending of biodiesel with petroleum diesel to achieve a minimum share of 5% by volume of the total diesel consumption in the country and 10% by 2025.⁶⁴ Ethanol provides the most promise in the region. At the same time, government leadership in Pakistan is seeking to import more U.S. natural gas in a hapless attempt to “diversify” energy supply and strengthen trade relations.⁶⁵ Biofuels’ environmental justice impacts include the energy, land use, and pollution costs from production, refining, and consumption.⁶⁶

⁶¹ *Id.* at 471. The dilemma of being a water-stressed country that is subject to ongoing flooding presents tremendous challenges for land use, urban planning, environmental management, and natural resource conservation. *Id.* at 473–74. “While Pakistan has abundant ‘physical water’ as is evident by the floods of the last decade, it is the ‘economic water’ which is becoming increasingly scarce.” *Id.* at 474. “This is a result of poor water [governance] by successive Pakistani governments combined with such factors as interprovincial discord, lack of awareness towards efficient use of water, maladministration, and the gradual degradation of the existing water infrastructure.” “The water-energy crisis which has plagued the Pakistani economy and society at large during the last decade is a corollary of the economic water scarcity in the country.” In the absence of viable and sustainable alternative energy sources, Pakistan remains dependent on hydroelectricity to meet its energy requirements.” *Id.* at 475. An assessment of the water-energy nexus in Pakistan considers the ramifications of land use and urban planning in river communities, particularly during the monsoon season. *Id.* at 472–73; see also *Floods in Pakistan worse than Tsunami, Haiti*, GULF NEWS ASIA (Aug. 10, 2010), <https://gulfnews.com/world/asia/pakistan/floods-in-pakistan-worse-than-tsunami-haiti-1.666221>; Ahmad & Bibal, *supra* note 59.

⁶² Tareq Ali et al., *An Overview of Biofuels Sector of Pakistan: Status and Policies*, 3 INT. J. ECO. RES. 69, 69–70 (2012).

⁶³ *Id.* at 69.

⁶⁴ *Id.*

⁶⁵ Alexa Green & Ben Winck, *Pakistani Envoy Says Boosting U.S. Gas Imports Key to Trade Ties*, BLOOMBERG POL. (July 2, 2018), <https://www.bloomberg.com/news/articles/2018-07-02/pakistani-envoy-says-boosting-u-s-gas-imports-key-to-trade-ties>. The envoy to the U.S. said in July 2018 that “buying more liquefied natural gas from the U.S. will allow Pakistan to bolster its exports while maintaining the ‘fairness’ and ‘parity’ that his country and President Donald Trump’s administration seek.” The envoy said: “Pakistan is on its way to becoming one of the world’s largest gas importers, and the U.S. is well on its way to becoming the world’s largest LNG exporter.” Becoming a gas importer is not something that will bolster Pakistan’s economy, but it will ensure continued foreign aid from the United States while the citizens will pay for higher energy prices and endure the environmental and social externalities of natural gas use. Exxon Mobil Corp. is partnering “with a group of Pakistan’s large businesses on a proposal to build and supply the country’s third LNG import terminal, the nation’s minister for maritime affairs.” *Id.*

⁶⁶ Jeanne Marie Zokovitch Paben, *Green Power & Environmental Justice—Does Green Discriminate?*, 46 TEX. TECH L. REV. 1067, 1072–73, 1077–78, 1080–96 (2014).

C. Typhoon Haiyan in the Philippines

Curse me, criticise [sic] me but I believe I must do the right thing. I am impatient like everyone else but I have to stress that we can't rebuild haphazardly. We have to build back better, [so] let's get it right the first time and the benefits should be permanent.

-- Philippines president, Benigno Aquino⁶⁷

Super Typhoon Haiyan made landfall in the Philippines on November 8, 2013, pounding the island of Leyte with winds up to 195 miles per hour and a monstrous storm surge.⁶⁸ The Advanced Spaceborne Thermal Emission and Reflection Radiometer ("ASTER") on NASA's Terra satellite attained images on April 3, 2004 and November 15, 2013.⁶⁹ The differences between the images indicate the scale of the disaster.⁷⁰ Earlier, another "rare Category 5 'Super Typhoon' struck the island of Mindanao in the southern Philippines on December 4, [2012], bringing 160 mile per hour winds and heavy rainfall."⁷¹ The U.S. Department of Agriculture's Foreign Services states, "post-disaster assessments indicate that only very limited losses of the

⁶⁷ *The Philippines marks first anniversary of Super Typhoon Haiyan; 25,000 people remain displaced*, AUSTL. BROAD. CORP. (Jan. 17, 2015), <https://www.abc.net.au/news/2014-11-08/the-philippines-marks-first-anniversary-haiyan/5876788>.

The Philippines president Benigno Aquino defended the pace of rebuilding, insisting thorough reconstruction takes time. In a speech at the hard-hit town of Guiuan ahead of Haiyan's anniversary, Mr. Aquino said he was determined to ensure the reconstruction program was carried out correctly and was not rushed. Mr. Aquino also came under criticism for approving the government's \$4 billion reconstruction master plan only last week.

Id.

⁶⁸ *Haiyan (Pacific Northwest Ocean) Evidence of Destruction in Tacloban, Philippines*, NASA (Nov. 20, 2013), <https://www.nasa.gov/content/goddard/haiyan-northwestern-pacific-ocean/>.

⁶⁹ *Id.*

⁷⁰ *Id.*

This pair of images demonstrates both the challenge and the value in mapping disasters with satellite data. The images give a view of the entire city and its surroundings, a view that would otherwise be very difficult to obtain. On the other hand, some of the change is ambiguous and requires ground-based information to understand.

Id.

⁷¹ FOREIGN AGRIC. SERV., *Philippines: Super Typhoon Bopha Causes Limited Losses of Rice and Corn*, USDA (Dec. 17, 2012), <https://ipad.fas.usda.gov/highlights/2012/12/Philippines/>.

country’s most important food and feed grain crops actually occurred.”⁷² The report concludes, “some of the losses incurred can be recouped, if crops in unaffected or marginally affected areas achieve higher than expected yields.”⁷³ In such a scenario, the recovered crops could still be used as food as well as serve as biomass for biofuel if needed for emergency services.

In the Philippines, the Pentagon gave the go ahead to commence part of an Enhanced Defense Cooperation Agreement (“EDCA”), a 2014 pact that faced threats of being eliminated due to bouts of hostility between the two nations.⁷⁴ EDCA creates a means to expand “rotational deployment of U.S. ships, aircraft and troops at five bases in the Philippines as well as the storage of equipment for humanitarian and maritime security operations.”⁷⁵ The U.S. military presence in the area would require better deployment of resiliency efforts for responding to sudden onset water hazard events.

Of the 1,692 cities with at least 300,000 inhabitants in 2014, 944 (56 percent) were at high risk of exposure to at least one of six types of natural disaster (cyclones, floods, droughts, earthquakes, landslides and volcano eruptions), based on evidence on the occurrence of natural disasters over the late twentieth century. Taken together, cities facing high risk of exposure to a natural disaster were home to 1.4 billion people in 2014. Around 15 percent of cities—most located along coastlines—were at high risk of exposure to two or more types of natural disaster; 27 cities—including the megacities Tokyo, Osaka and Manila—faced high risk of exposure to three or more types of disaster.⁷⁶

IV. DISASTER RISK REDUCTION

U.S. environmental policy is disinterested in the concerns of poor people, people of color, and indigenous people until there is interest convergence with dominant environmental paradigms. Racism and classism intersect with the brink of a much larger disaster—climate change. The impacts of climate

⁷² *Id.*

⁷³ *Id.*

⁷⁴ Manuel Mogato, *Philippines says U.S. military to upgrade bases, defense deal intact*, REUTERS (Jan. 26, 2017), <https://www.reuters.com/article/us-philippines-usa-defence/philippines-says-u-s-military-to-upgrade-bases-defense-deal-intact-idUSKBN15A18Z>.

⁷⁵ *Id.*

⁷⁶ ECON. & SOC. AFFAIRS, U.N., *THE WORLD’S CITIES IN 2016*, at 8 (2016), http://www.un.org/en/development/desa/population/publications/pdf/urbanization/the_world_s_cities_in_2016_data_booklet.pdf.

change are already devastating and will be far worse in terms of body counts from other forms of violence. However, the United States and mainstream legal advocacy groups are less swift to issue a statement on climate change and the ongoing inequities associated with environmental justice. Climate change impacts communities of color and indigenous groups first and hardest. The United States and mainstream legal advocacy organizations are hard-pressed to pass environmental justice policy because the injuries and inequities to communities of color and indigenous groups are tolerable.

The EPA is vital for ensuring that all Americans are safe from threats to human health in the areas they live, work, and learn.⁷⁷ The Agency ensures that federal laws protecting human health and the environment are enforced in a fair and effective manner.⁷⁸ One administrative proposal slashes the EPA's budget in a plan that would reduce the agency's staff by one-fifth in the first year and cut dozens of programs.⁷⁹ These proposed changes endanger all parts of society, including communities; individuals; businesses; and state, local, and tribal governments. The U.S. Government must not abandon efforts to reduce environmental risk. The Trump Administration's budget cuts not only impact environmental protection efforts, but also adversely impact U.S. policies for "natural resource[] [management], human health, economic growth, energy, transportation, agriculture, industry, and international trade," all of which are at the core of the EPA's mission.⁸⁰ A robust system for environmental protection assists in efforts to create sustainable and economically productive communities and ecosystems.

In 1993, the American Bar Association ("ABA") adopted an Environmental Justice Resolution "urg[ing] federal, state, territorial and local administrative agencies to give priority attention to" the "implementation and enforcement of environmental laws, regulations and policies so that a disproportionate share of the burden of environmental harm does not fall on minority and/or low-income individuals, communities or populations."⁸¹ The ABA and other legal advocacy groups have an interest and responsibility to

⁷⁷ Scott Pruitt & U.S. Environmental Protection Agency, EARTHJUSTICE, <https://earthjustice.org/features/what-you-should-know-about-scott-pruitt-the-epa> (last updated Feb. 17, 2017).

⁷⁸ *About EPA: Our Mission and What We Do*, EPA <https://www.epa.gov/aboutepa/our-mission-and-what-we-do> (last visited Feb. 24, 2019).

⁷⁹ Juliet Eilperin & Brady Dennis, *White Houses eyes plan to cut EPA staff by one-fifth eliminating key programs*, WASH. POST (Mar. 1, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/03/01/white-house-proposes-cutting-epa-staff-by-one-fifth-eliminating-key-programs/?utm_term=.7c7228b4a060.

⁸⁰ See *About EPA*, *supra* note 78; see generally Eilperin & Dennis, *supra* note 79 (noting the budget cuts will have an effect on the EPA's core values).

⁸¹ *Environmental Justice*, ABA (Mar. 8, 2011), http://www.americanbar.org/groups/public_services/environmental_law/policy/environmental_justice.html (adopted by the ABA House of Delegates, Aug. 11, 1993, New York, NY).

protect the laws and rules that provide for environmental justice so as to protect human populations and environmental systems. Environmental justice allows for “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”⁸² These budget proposals would increase the burden of environmental harm on minority and/or low-income individuals—that is, communities or populations who are most vulnerable to environmental and human health risks caused by pollutants and toxic substances.

The Executive Branch has used its power to direct agencies to take action to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories. . . .”⁸³ The EPA has articulated this goal for all communities and people across the country. Actualizing environmental justice would lead to the same protections from environmental and health hazards for all people, and would provide access to the decision-making process to have a healthy environment. To date, environmental justice initiatives fall short of their intended goals. That is why a broader framework for disaster risk reduction is necessary.

The Sendai Framework for Disaster Risk Reduction 2015–2030 “aims to reduce the damage caused by natural hazards like earthquakes, floods, droughts and cyclones, through an ethic of prevention.”⁸⁴ There is no such thing as a “natural disaster,” only natural hazards.⁸⁵ The Framework’s Four Priorities for Action include Understanding Disaster Risk; Strengthening Disaster Risk Governance; Investing in Disaster Risk Reduction for Resilience; and Enhancing disaster preparedness for effective response to “Build Back Better” in recovery, rehabilitation, and reconstruction. The Sendai Framework for Disaster Risk Reduction 2015–2030 is the successor

⁸² *Environmental Justice*, EPA, <https://www.epa.gov/environmentaljustice> (last visited Feb. 24, 2019).

⁸³ Exec. Order No. 12898, 32 C.F.R. § 651.17 (1994); see also Robert D. Bullard et al., *Toxic Wastes and Race at Twenty: Why Race Still Matters after all of These Years*, 38 ENV’T L. 371, 381–82 (2008) (explaining how the executive order called for improved methods of assessing environmental justice problems, mitigating effects and impacts on impacted populations).

⁸⁴ *Who we are*, UNDRR, <https://www.unisdr.org/who-we-are> (last visited Feb. 24, 2019).

⁸⁵ See Kendra Pierre-Louis, *There’s Actually No Such Thing as a Natural Disaster*, POPULAR SCI. (Oct. 2, 2017), <https://www.popsci.com/no-such-thing-as-natural-disaster>.

instrument to the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters.⁸⁶

The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels.⁸⁷ “The recovery, rehabilitation and reconstruction phase . . . is a critical opportunity to ‘Build Back Better,’ including through integrating disaster risk reduction into development measures.”⁸⁸ Stephen Nelson in “Natural Disasters & Assessing Hazards and Risk,” considers the following risk factors:

- Proximity to hazard
- Population density in the area proximal to the event
- Scientific understanding of the hazard
- Public education and awareness
- Existence or non-existence of early-warning systems and lines of communication
- Availability and readiness of emergency infrastructure
- Construction styles and building codes
- Cultural factors that influence public response to warnings⁸⁹

Disaster risk needs to be viewed as “a pervasive variable in society, a potentiality, growing and changing, awaiting to be revealed with a vengeance

⁸⁶ *Sendai Framework for Disaster Risk Reduction*, UNDRR, <https://www.unisdr.org/we/coordinate/sendai-framework> (last visited Jan. 25, 2019); *see also Who we are*, *supra* note 84.

It was adopted on March 18, 2015, at the World Conference on Disaster Risk Reduction held in Sendai, Japan. The Sendai Framework is the outcome of stakeholder consultations initiated in March 2012 and inter-governmental negotiations held from July 2014 to March 2015, which were supported by the UNISDR upon the request of the UN General Assembly. UNISDR has been tasked to support the implementation, follow-up and review of the Sendai Framework. The UN Agency defines itself through a multi-stakeholder coordination approach based on the relationships it has developed with national and local governments, intergovernmental organizations and civil society, including the private sector, and by its mode of operating through a network of global partners.

Id.

⁸⁷ G.A. Res. 69/283, ¶ 32 (June 23, 2015), *available at* https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_69_283.pdf.

⁸⁸ *Id.*

⁸⁹ Stephen A. Nelson, *Natural Hazards and Natural Disasters*, TUL. U., https://www.tulane.edu/~sanelson/Natural_Disasters/introduction.htm (last updated Jan. 9, 2018).

when a hazardous event sweeps through.”⁹⁰ The different countries show the variable response to disaster risk reduction: “For example, the death rates from tropical cyclones are much lower in Japan and Cuba than in their neighboring countries, because these two countries have active policies and programs to reduce the exposure and the vulnerability of their citizens.”⁹¹

Sendai Framework for Disaster Risk Reduction does not include a precise definition of disaster or disaster risk management, which is problematic. Anastasia Telesetsky addresses the shortcomings of the Sendai Framework for Disaster Risk Reduction for “shared responsibility” in that “no language explicitly [exists] about the relationship between a business entity’s activities and its community.”⁹² In many instances, individuals, including individual businesses, are unlikely to voluntarily invest in natural disaster risk mitigation because the degree of exposure is perceived as insignificant unless they have experienced a disaster.⁹³

One way to improve disaster response is to have a broader fleet of emergency vehicles available. In a number of cities and states, alternative

⁹⁰ Margareta Wahlström, *Disaster Risk and its Reduction: Who Is Responsible?*, 33 FLETCHER F. WORLD AFF. 153, 153 (2009).

⁹¹ *Id.* at 154.

⁹² Anastasia Telesetsky, *Beyond Voluntary Corporate Social Responsibility: Corporate Human Rights Obligations to Prevent Disasters and to Provide Temporary Emergency Relief*, 48 VAND. J. TRANSNAT’L L. 1003, 1012–13 (2015). She writes:

Obliquely, the language refers to “business continuity,” which might presume a need for close interaction between a business and its immediate community. It is possible that undertaking specific disaster prevention efforts to protect a community would be part of the “disaster risk management” efforts suggested in this paragraph, but this is not made clear. Curiously, no minimal definition of the term “disaster risk management” is offered in the Sendai Framework itself, though the term is peppered throughout the document as something guiding both public and private stakeholders.

Id.

⁹³ Anastasia Telesetsky & Qihao He, *Climate Change Insurance and Disasters: Is the Shenzhen Social Insurance Program A Model for Adaptation?*, 43 B.C. ENVTL. AFF. L. REV. 485, 503 (2016). Telesetsky and He show the problems of the failure to plan for disaster mitigation:

While parties may reassess their perceptions about investing in mitigation after a certain level of damage is experienced, it may be too late to secure long-term community resilience. Injured parties with the resources may simply leave the community. This is arguably the story of New Orleans, Louisiana, where individuals and business have failed to rebuild in some flood-devastated neighborhoods and have instead relocated to Texas and other states. If enough such parties depart in succession, then the community begins to experience what might be termed “disaster flight.”

Id.

fuel vehicles (“AFVs”) are playing a big role in responding to natural disasters and improving emergency preparedness.⁹⁴ Flexibility is important for vehicles servicing critical infrastructure needs.⁹⁵ The Port Authority of New York and New Jersey has a fleet of biofuel (gasoline and natural gas) Ford F350 pickup trucks that operate at key airports, tunnels, and bridges.⁹⁶ Being able to run on either fuel provides fueling flexibility, as well as extended range during normal operations. “Diverse fueling options also help reduce recovery time after a disaster.”⁹⁷

The U.S. Department of Energy’s Vehicle Technologies Office (“VTO”) supports a balanced portfolio of early-stage research and works directly with its nationwide network of Clean Cities Coalitions to enable widespread use of alternative fuels and energy efficient mobility technologies that enhance energy affordability, reliability, and resilience and strengthen U.S. energy security.⁹⁸

V. CONCLUSION

Even though gaps exist in the international instrument for disaster risk reduction, the Sendai Framework can more broadly address environmental justice concerns. A disaster risk reduction lens for environmental justice looks to vulnerabilities within communities to address the multiplicity of problems in sudden onset water hazard events. Whether in the form of hurricanes, typhoons, monsoons, cyclones, or tsunamis, etc., sudden onset water hazard events are primed to impact coastal areas and even negatively impact inland areas. The sooner technologies can be developed and used to respond to these disasters, the better outcomes will be for disaster recovery. Responding to disaster is less ideal when it has not been planned. The procrastination of disaster risk reduction in low-income, minority, and indigenous populations is a symptom of the lack of environmental justice.

⁹⁴ OFF. OF ENERGY EFFICIENCY & RENEWABLE ENERGY, *5 Ways Alternative Fuels Aid Response to Hurricanes and Natural Disasters*, U.S. DEPT. ENERGY (Sept. 20, 2017), <https://www.energy.gov/eere/articles/5-ways-alternative-fuels-aid-response-hurricanes-and-natural-disasters>.

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.*