CLIMATE CHANGE, MIGRATION, AND PANDEMICS: HUMAN RIGHTS IN THE ANTHROPOCENE

Alan W. Clarke*

ABSTRACT

The 1951 Refugee Convention defines a refugee as someone with a "well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion."[1] *Environmental refugees do not fall within its scope, nor does international human rights law adequately cover these migrants. If climate change results in widespread environmental damage, including massive ill-health for large parts of the world, there will likely be immense human suffering and potentially the greatest human migrations in all of humanity's history. Moreover, these refugees largely come from areas of the world least responsible for global warming. Wealthy societies largely caused the problem while the poorest suffer. This increases the moral obligation of the rich, polluting states to deal responsibly with the human rights issues raised by climate change. In this respect, our moral obligations and self-interest align. Human suffering leading to civil strife is in no one's interest, and our moral obligation to mitigate suffering that we caused and are responsible for is plain. This Paper argues that if we do not modify international law in order to deal with the inevitable human migrations spurred by climate change and its accompanying pandemics then suffering, strife, and violence will be the unavoidable outcome.*

ABSTRACT 1
INTRODUCTION 2
I. HUMAN MIGRATION AND GAPS IN INTERNATIONAL LAW 3
II. THE POTENTIAL FOR A HEALTH CATASTROPHE AND A MIGRATION CRISIS 6
III. MILITARIZED BORDERS ARE INEFFECTIVE 10
IV. LINKAGES: DISEASE AND WILD WEATHER 12
V. CONCEPTUAL CHALLENGES 25
VI. TOWARD A SOLUTION TO THE HUMAN RIGHTS DILEMMA 28

* Alan W. Clarke is Professor Emeritus at Utah Valley University, Adjunct Professor of Political Science at Memorial University of Newfoundland and Labrador, and Visiting Scholar at York University's Centre for Refugee Studies.

1. United Nations Convention Relating to the Status of Refugees, July 28, 1951, 189 U.N.T.S. 137 at art. 1(A)(2).

"If left unchecked climate change will inevitably cause diseases, malnutrition, food and water shortages, migration, conflict, severe weather events, and rises in sea levels."[2]

INTRODUCTION

Even before migrating out of Africa, *Homo sapiens* moved in response to hostile environmental conditions.[3] The Anthropocene, however, presents a radically capricious, fluctuating challenge, potentially setting in motion massive human migratory waves worldwide. Adverse and rapidly changing climactic conditions exacerbate multiple environmental stressors, including pandemics, which will inevitably trigger ever increasing migratory surges.[4] Climate change, human migration, and multiple disease vectors inextricably connect; their complex linkages, tipping points, and feedback loops are a pressing human rights problem. Even assuming global political will to accommodate unprecedented migration, where will people go? Scientific evidence suggests that in the worst-case scenario there will be few safe places to retreat, no safe harbor for anyone.[5] Visions of catastrophe, however, must not invite passivity; mitigation remains possible.[6] If the world fails to act, human suffering will exceed historical comparison.[7]

This Essay focuses on three principles, considers interrelated problems, and suggests a tentative path forward. First, it outlines the gaps in international law respecting refugees and internally displaced people, leaving those who flee environmental disasters without effective remedy. Next, it focuses on the connection between the health crisis that climate change will exacerbate and the accompanying crisis in human migration. These issues raise a third, subsidiary problem. Can the nation state protect itself by militarizing and securitizing its borders? This Essay argues that it cannot;

---

2. Sumudu Atapattu, *Climate Change*, *Human Rights, and Forced Migration: Implications for International Law*, 27 WIS. INT'L L.J. 607, 608 (2009).

3. *See, e.g.*, SONIA SHAH, THE NEXT GREAT MIGRATION: THE BEAUTY AND TERROR OF LIFE ON THE MOVE 164, 171 (2020) (detailing how many animal and plant species, including humans, have migrated throughout the planet in response to environmental change).

4. *See infra* Part IV.

5. *See* IPCC, *Summary for Policymakers*, *in* CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS CONTRIBUTION OF WORKING GROUP I TO THE SIXTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2021), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf.

6. *See id.* §§ D.1–D.2.4.

7. Estimates of migration as a result of climate change range from 25 million to 1 billion people by 2050. OLI BROWN, INT'L ORG. FOR MIGRATION, MIGRATION AND CLIMATE CHANGE 12 (2008); *see e.g.*, Francesco Bassetti, *Environmental Migrants: Up to 1 Billon by 2050*, FORESIGHT (May 22, 2019), https://www.climateforesight.eu/migrations/environmental-migrants-up-to-1-billion-by-2050/.

military and security responses, while seeming to succeed in the short run, will ultimately fail. Moreover, we need to consider the linkages between disease and the approaching, increasingly wild weather. Then there are conceptual problems with formulating solutions. Finally, we set out the human rights dilemma created by the coming migrations and provide a provisional approach towards solving the impending crisis. It concludes that both soft law and treaty law, including regional and bilateral treaties, need to move swiftly to accommodate the coming, foreseeable, and massive refugee flows.

I. HUMAN MIGRATION AND GAPS IN INTERNATIONAL LAW

The Refugee Convention requires persecution "for reasons of race, religion, nationality, membership of a particular social group or political opinion . . . ."[8] The 1967 Protocol to the Refugee Convention[9] expanded its ambit beyond its post-World War II focus on Europe's war refugees but did not modify the definition.

Historically, environmental refugees[10] or the subset of climate change migrants (concepts that gained traction decades after the Refugee Convention's adoption) do not fall within the Convention's scope. Nor do people fleeing infectious disease or other ill-health effects linked to global warming fit this definition. First, it is difficult to equate a person displaced by impersonal environmental forces such as sea level rise, desertification, cyclones, unbearable heat, or pandemics with victims facing persecution—whether it be for human rights violations, crimes against humanity, genocide,[11] or other serious forms of maltreatment from which the state is

8. United Nations Convention Relating to the Status of Refugees, *supra* note 1, 189 U.N.T.S. at art. 1(A)(2).

9. United Nations Protocol Relating to the Status of Refugees, Jan. 31, 1967, 606 U.N.T.S. 267. The United States is not a party to the 1951 Refugee Convention but has ratified the 1967 Protocol.

10. Calling persons fleeing environmental factors of any kind, including infectious disease, "refugees" is controversial with many scholars and practitioners preferring to reserve the term to its original usage of people fleeing persecution that is either state sponsored, or from which the state is unwilling or unable to protect a defined part of its citizenry. We will deal with these definitional problems but do not wish for the purposes of this essay to get overly hung up on terminology as it is our purpose at this point to sketch out the intersecting problem of climate change, pandemics and refugees, internally displaced people, and migrants fleeing environmental conditions that threaten their survival.

11. The Genocide Convention requires the intent to destroy a protected group, in whole or in part, while crimes against humanity require "a widespread or systemic practice" together with knowledge or awareness of the widespread or systemic practice. *See* LAURELYN WHITT & ALAN W. CLARKE, NORTH AMERICAN GENOCIDES: INDIGENOUS NATIONS, SETTLER COLONIALISM, AND INTERNATIONAL LAW 72–73, 88–89 (2019).

unwilling or unable to provide protection.[12] The language of persecution requires a greater degree of human agency than is ordinarily present in most environmental disasters. Environmental degradation or infectious diseases, although foreseeable and made worse by human structures, are rarely intended[13] and are, given the difficult problem of direct attribution of causation, seemingly random and rarely planned. This remains true even where severe degradation renders the homeland uninhabitable.[14] While poor and indigenous peoples are the most vulnerable to adverse effects of climate change,[15] the environmental consequences of climate change do not, under the dominant view,[16] discriminate directly against members of social or political groups per se[17]—at least insofar as those groups are currently recognized in international law. Prominent scholars have argued for a social paradigm in refugee or migration law that more adequately engages "with the social factors that engender exposure and vulnerability to natural hazards."[18] Nonetheless, arguments that the consequences of climate change are just as disastrous as those stemming from intentional persecution, and that disadvantaged groups should be seen as deserving of legal protection from

12. See, for example, MATTHEW SCOTT, CLIMATE CHANGE, DISASTERS, AND THE REFUGEE CONVENTION, 35–37 (James Hathaway et al. eds., 2020) for a discussion of how persecution has been defined and juridically applied and whether the state's ability to effect protection must be effective.

13. There are exceptions. *See, e.g.*, United Steelworkers, *Criminal Charges Against Brazilian Multinational Should Send a Message to Canadian Government - Steelworkers*, CAN. NEWSWIRE (Jan. 30, 2020), https://www.newswire.ca/news-releases/criminal-charges-against-brazilian-multinational-should-send-a-message-to-canadian-government-steelworkers-858770360.html.

14. The Three Gorges Dam in China provides a significant exception. Dams force people in their flood plain to relocate and when they fail, as many do, destruction and forced displacement result. Even by that standard, the Three Gorges Dam is exceptional in the sheer numbers with 1.4 to 1.5 million people displaced. *China's Three Gorges Dam May Displace Another 100,000*, BBC NEWS (Apr. 18, 2012), https://www.bbc.com/news/world-asia-china-17754256.

15. "[I]ndigenous peoples are among the poorest of the poor, the stratum most vulnerable to climate change." Int'l Lab. Off. Geneva, *Indigenous Peoples and Climate Change: From Victims to Change Agents Through Decent Work*, at 7 (2017), https://www.ilo.org/wcmsp5/groups/public/—-dgreports/—-gender/documents/publication/wcms_551189.pdf; Christopher Flavelle & Kalen Goodluck, *Dispossessed Again: Climate Change Hits Native Americans Especially Hard*, N.Y. TIMES (Oct. 28, 2021), https://www.nytimes.com/2021/06/27/climate/climate-Native-Americans.html.

16. *See* SCOTT, *supra* note 11, at 12–15.

17. Many human-caused environmental hazards do discriminate as destructive activities are often placed in socially deprived areas and places where visible minorities and indigenous people live. Nina Lakhani, *'Racism Dictates Who Gets Dumped on': How Environmental Injustice Divides the World*, GUARDIAN (Oct. 21, 2019), https://www.theguardian.com/environment/2019/oct/21/what-is-environmental-injustice-and-why-is-the-guardian-covering-it. "Championed by African Americans, Latinos, Asians and Pacific Islanders, and Native Americans, the environmental justice movement addresses a statistical fact: people who live, work, and play in America's most polluted environments are commonly people of color and the poor." Renee Skelton & Vernice Miller, *The Environment Justice Movement*, NAT. RES. DEF. COUNCIL (Mar. 17, 2016), https://www.nrdc.org/stories/environmental-justice-movement.

18. SCOTT, *supra* note 11, at 14.

environmental degradation have yet to gain significant traction in international law.[19] Structural disadvantages and social and economic vulnerabilities affecting poor or indigenous peoples are largely invisible under the dominant legal paradigm.

Moreover, international human rights law as it has developed after World War II is inadequate. It focuses heavily on nonrefoulement in cases of persecution and leaves gaps insofar as it does not help what Alexander Betts calls "survival migrants."[20] There are hints, however, that international human rights law may be moving incrementally with respect to those who flee extreme environmental destruction. In a recent communication, the United Nations Human Rights Committee (HRC) stated that a State Party to the Optional Protocol to the International Covenant on Civil and Political Rights may not "extradite, deport or otherwise transfer" a person fleeing life threatening environmental conditions.[21] This opening is quite narrow. It applies to signatories to the 1967 Protocol to the Refugee Convention and is limited to extreme cases with an extremely high evidentiary threshold for accessing relief. We will address this important development more fully in Section VI.

Many who flee are displaced within their home country. These internally displaced peoples do not fit the Refugee Convention as they will not have crossed an international border. There are Guiding Principles on Internal Displacement,[22] which, because they are non-binding, are often not observed. They do, however, provide a soft law approach that may prove useful in finding a way out of the current dilemma involving people who flee environmental destruction.

While estimates of the magnitude of the problem vary, sophisticated modeling suggests that we may be underestimating the seriousness of the climate change problem.[23] The U.N. High Commissioner for Refugees

---

19. See *id*. at 76–78, for a sustained argument supporting evolutive expansion of the Refugee Convention, informed by a broad human rights approach, to more readily provide redress for people fleeing natural disasters.

20. ALEXANDER BETTS, SURVIVAL MIGRATION: FAILED GOVERNANCE AND THE CRISIS OF DISPLACEMENT 5-8 (2013).

21. U.N. Human Rights Committee, *Views of the Committee Under Article 5(4) of the Optional Protocol, Concerning Communication*, C/127/D/2728/2016, ¶ 9.3 (adopted 24 Oct. 2019, Distr: General 23 Sept 2020).

22. *See generally* Comm'n on Hum. Rights, *Guiding Principles on Internal Displacement*, U.N. Doc. E/CN.4/1998/53/Add.22 (1998), https://www.unhcr.org/43ce1cff2.

23. Abrahm Lustgarten, *The Great Climate Migration*, N.Y. TIMES MAG. (July 23, 2020), https://www.nytimes.com/interactive/2020/07/23/magazine/climate-migration.html ("Proceedings of the National Academy of Sciences published the explosive study estimating that, barring migration, one-third of the planet's population may eventually live outside the traditional ecological niche for civilization."); see also Abrahm Lustgarten, *About Our Climate Migration Model*, PROPUBLICA (July 23, 2020),

(UNHCR) reports that at the end of 2021, there were 89.3 million forcibly displaced persons in the world with 21.3 million refugees under the U.N. mandate.[24] Forty-seven percent come from Syria, Afghanistan, and South Sudan.[25] Not all are dislodged by climate change, but adverse climactic conditions play a significant role. "The window for action is closing. The world can now expect that with every degree of temperature increase, roughly a billion people will be pushed outside the zone in which humans have lived for thousands of years."[26]

These displaced peoples, including many indigenous peoples, are largely coming from areas of the world least responsible for global warming.[27] Because wealthy societies primarily caused the problem, leaving the poorest to suffer, these rich, polluting states have a moral obligation to deal responsibly with the problem. In this respect, moral obligations and self-interest align. Human suffering leading to civil strife is in no one's interest, and the moral obligation to mitigate suffering is plain.

II. THE POTENTIAL FOR A HEALTH CATASTROPHE AND A MIGRATION CRISIS

"It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred."[28] Earth is already seeing "changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones"[29] that are directly attributable to "[h]uman-induced climate

---

https://www.propublica.org/article/2020-climate-migration-part-1-methodology, for the methodology and data underlying this modeling.

24. UNHCR, GLOBAL TRENDS: FORCED DISPLACEMENT IN 2021 (June 16, 2022), https://www.unhcr.org/62a9d1494/global-trends-report-2021.

25. *Figures at a Glance*, UNHCR (June 16, 2022), https://www.unhcr.org/en-us/figures-at-a-glance.html.

26. Lustgarten, *The Great Climate Migration*, *supra* note 22.

27. As Jamison Ervin, Manager of the UNDP's Global Programme on Nature and Development notes:

> Indigenous peoples, who comprise less than five percent of the world's population, have the world's smallest carbon footprint, and are the least responsible for our climate crisis. Yet because their livelihoods and wellbeing are intimately bound with intact ecosystems, Indigenous peoples disproportionately face the brunt of climate change, which is fast becoming a leading driver of human displacement.

Jamison Ervin, *Indigenous Peoples Least Responsible for the Climate Crisis*, INTER PRESS SERV. NEWS AGENCY (Aug. 9, 2018), http://www.ipsnews.net/2018/08/indigenous-peoples-least-responsible-climate-crisis/.

28. IPCC, *supra* note 4, § A.1.

29. *Id.* § A.3.

change"[30] and affecting every region "across the globe."[31] Even in the hoped-for best case, where temperatures plateau at 1.5 degrees Centigrade (2.7 Fahrenheit), there will be droughts, heat, desertification, and wildfires in entire regions, while sea level rise, coastal flooding, cyclones, and salt water intrusion into freshwater aquifers will afflict the coasts.[32]

Furthermore, the anthropogenic drivers of these events will foreseeably combine, compounding the severity of these calamities.[33] Inland rivers and lakes will repeatedly flood while tornadoes and wind shear will torment others.[34] In West Africa, sea level rise will push millions toward an inhospitable desert while the massive river valleys of south and east Asia will send many hundreds of millions inland. No region will remain unscathed.[35] Climate change increases the severity of forest fires,[36] which are vastly more complicated to fight during a pandemic.[37] Pandemics increase the difficulty in dealing with other disasters including floods, hurricanes, and tornadoes. Climate change, pandemics, and human migration mutually reinforce each other in destructive ways that could potentially result in civilization's

---

30. *Id.*

31. *Id.*

32. *See id.* §§ D.1–D.2.4, C.2–C.2.7. Eugene Robinson writes:

> If the world immediately takes bold, coordinated action to curb climate change, we face a future of punishing heat waves, deadly wildfires and devastating floods—and that's the *optimistic* scenario, according to an alarming new U.N. report. If, on the other hand, we continue down the road of half-measures and denial that we've been stuck on since scientists first raised the alarm, the hellscape we leave to our grandchildren will be unrecognizable.

Eugene Robinson, *The U.N.'s Dire Climate Report Confirms: We're Out of Time*, WASH. POST (Aug. 9, 2021), https://www.washingtonpost.com/opinions/2021/08/09/united-nations-climate-report-dire/.

33. IPCC, *supra* note 4 ("Compound extreme events are the combination of multiple drivers and/or hazards that contribute to societal or environmental risk . . . Examples are concurrent heatwaves and droughts, compound flooding (e.g., a storm surge in combination with extreme rainfall and/or river flow), compound fire weather conditions (i.e., a combination of hot, dry, and windy conditions), or concurrent extremes at different locations."); *see also* Gabrielle Canon, *Heat, Drought and Fire: How Climate Dangers Combine for a Catastrophic 'Perfect Storm*,*'* GUARDIAN (Aug. 10, 2021), https://www.theguardian.com/us-news/2021/aug/10/heat-drought-and-fire-how-climate-dangers-combine-for-a-catastrophic-perfect-storm.

34. *See* IPCC, *supra* note 4, §§ B.1–B.2.5 (discussing the emergence of regionally-specific climate emergencies).

35. *See id.*

36. *See, e.g.*, M.D. Flannigan et al., *Climate Change and Forest Fires*, 262 SCI. TOTAL ENV'T 221, 227 (2000) (finding that because of climate change the seasonal severity rating for forest fires could increase by 10-50% by the year 2060).

37. Matt Volz, *Pandemic Adds Risk to Already Dangerous Job of Firefighting*, AP NEWS (Aug. 22, 2020), https://apnews.com/article/527f3677e8b16cdb37ccf480620e8c16; Miguel Velazquez, *The World Is Fighting Forest Fires in the Midst of a Pandemic*, MÉTRO WORLD NEWS (June 25, 2020), https://blog.iufro.org/2020/07/06/the-world-is-fighting-forest-fires-in-the-midst-of-a-pandemic/; Jeanne Dorin McDowell, *How Covid-19 Will Change the Way We Fight Wildfires*, SMITHSONIAN MAG. (July 7, 2020), https://www.smithsonianmag.com/science-nature/wildfire-season-covid-19-180975250/.

collapse.[38] No region or area will be immune, and science tells us that all of these effects of climate change will have adverse health implications including the increased spread of zoonotic diseases and pandemics.

The World Health Organization finds both direct and indirect linkages between climate change and adverse health impacts with inevitable consequences for human displacement, migration, and refugees.[39] Warmer weather will directly increase "respiratory and cardiovascular disease and injuries and death due to extreme weather events such as droughts, floods, heatwaves, storms and wildfires."[40] By bringing humans into close contact with wildlife, climate change will increase respiratory illnesses, spreading zoonotic disease while increasing the range of those infectious diseases.[41]

> Climate change has indirect effects on health due to ecological changes, such as food and water insecurity and the spread of climate-sensitive infectious diseases, and also to societal responses to climate change, such as population displacement and reduced access to health services. As indirect effects of climate change may result from long causal pathways, they are particularly difficult to anticipate.[42]

Both climate change and pandemics will inevitably lead to ever increasing extremes in both direct and indirect effects, which compound, and

---

38. Naomi Oreskes and Erik Conway suggest the possibility that climate change could result in an extremely dystopic future. *See generally* NAOMI ORESKES & ERIK M. CONWAY, THE COLLAPSE OF WESTERN CIVILIZATION: A VIEW FROM THE FUTURE (2014). Other predictions of a dystopic future have migrated to the mainstream press.

> Currently fewer than 25 million people live in the world's hottest areas, which are mostly in the Sahara region in Africa with mean annual temperatures above about 84 degrees Fahrenheit, or 29 Celsius. But the researchers said that by 2070 such extreme heat could encompass a much larger part of Africa, as well as parts of India, the Middle East, South America, Southeast Asia and Australia.
>
> With the global population projected to rise to about 10 billion by 2070, that means as many as 3.5 billion people could inhabit those areas. *Some of them could migrate to cooler areas, but that would bring economic and societal disruption with it*.

Henry Fountain, *Billions Could Live in Extreme Heat Zones Within Decades, Study Finds*, N.Y. TIMES (May 4, 2020), https://www.nytimes.com/2020/05/04/climate/heat-temperatures-climate-change.html (emphasis added).

39. WORLD HEALTH ORG., COP24 SPECIAL REPORT: HEALTH AND CLIMATE CHANGE 16–19 (2018).

40. *Id*. at 20; *see also* Dr. Courtney Howard & Dr. Patricia Huston, *The Health Effects of Climate: Know the Risks and Become of the Solutions*, 45(5) CAN. COMMUNICABLE DISEASE REP. 114, 115 (2019).

41. WORLD HEALTH ORG., CLIMATE CHANGE AND HUMAN HEALTH: RISKS AND RESPONSES 103–27 (2003); G. Germain et al., *Quebec's Multi-Party Observatory on Zoonoses and Adaptation to Climate Change*, 45(5) CAN. COMMUNICABLE DISEASE REP. 143, 143 (2019).

42. WORLD HEALTH ORG., *supra* note 38, at 20.

then ratchet up human migration. We will not, within any time-frame relevant to humans,[43] reach a new normal where simple adaptation alone can prevent massive human migration. These problems will not follow predictable linear trend lines; climate-caused disasters and pandemics will increase in fits and starts, at times resulting in exponential growth. Indeed, we have seen this phenomenon with Covid-19, and the summers of 2020 and 2021 demonstrated it with climate change.

These are examples of the statistical phenomenon of events that do not regress to the mean, but rather are fat-tailed phenomena that can become increasingly extreme over time. As Professor Bent Flyvbjerg puts it:

> Regression to the tail applies to any distribution with non-vanishing probability density towards infinity. The frequency of new extremes and how much they exceed previous records is decisive for how fat-tailed a distribution will be, e.g., whether it will have infinite variance and mean. Above a certain frequency and size of extremes, the mean increases with more events measured, with the mean eventually approaching infinity instead of converging. In this case, regression to the mean means regression to infinity, i.e., a non-existent mean. Deep disasters – e.g., pandemics, floods, droughts, wildfires, earthquakes, landslides, avalanches, tsunamis, and wars – tend to follow this type of distribution.[44]

This has profound implications for the interlocking problems considered here. Humanity cannot simply wait to see how bad any of these will become and then respond.

> Using covid-19 to truly understand the basic principles of regression to the tail, and then putting those principles effectively to work in mitigating the major risks we currently face – paramountly the climate crisis – may well be key to our survival as a species, or at least survival of life as we know it. If we do this, covid-19 would not be a wasted crisis.[45]

---

43. D.L. ALBRITTON ET AL., CLIMATE CHANGE 2001: THE SCIENTIFIC BASIS. CONTRIBUTION OF WORKING GROUP I TO THE THIRD ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 38 (J.T. Houghton et al. eds., Cambridge University Press 2001).

44. Bent Flyvbjerg, *The Law of Regression to the Tail: How to Survive Covid-19, the Climate Crisis, and Other Disasters*, ENV'T. SCI. & POL'Y., Oct. 2020, at 2–3.

45. *Id.* at 13.

Both climate change and disease will contribute to ever-increasing migration and intensified suffering.[46] Sea level rise alone is expected to displace millions,[47] and is likely to rise faster and sooner than previously thought.[48]

III. MILITARIZED BORDERS ARE INEFFECTIVE

Many nations have responded to people fleeing environmental and public health disasters by militarizing borders, attempting to wall people out.[49] Such responses are seductive; they make it seem as if politicians are tough and are doing something. They may even appear to be effective, albeit temporarily. Given the racial, ethnic, and religious dynamics of many migrations from poorer countries, or regions within a country, such policies appeal to bigotry and nativism—both of which appear to be increasingly popular with right-wing movements around the world. However, an armed response not only leads to human rights abuses but is short-sighted. A militarized border strategy cannot be maintained indefinitely. There are four reasons for this. First, they are ineffective.[50] People find ways to circumvent even the strongest barriers.[51] Second, single-minded security strategies

---

46. Miriam Jordan, *From India, Brazil and Beyond: Pandemic Refugees at the Border*, N.Y. TIMES (June 7, 2021), https://www.nytimes.com/2021/05/16/us/migrants-border-coronavirus-pandemic.html?searchResultPosition=3.

47. JEFF GOODELL, THE WATER WILL COME, RISING SEAS, SINKING CITIES, AND THE REMAKING OF THE CIVILIZED WORLD 11 (First Back Bay ed., 2018).

48. James Hansen et al., *Ice Melt, Sea Level Rise and Superstorms: Evidence from Paleoclimate Data, Climate Modeling, and Modern Observations that 2 C Global Warming Could be Dangerous*, 16 ATMOSPHERIC CHEMISTRY & PHYSICS 3761, 3766 (2016); *see generally* Jonathan Watts, *Sea Levels Could Rise More Than a Metre by 2100, Experts Say*, GUARDIAN (May 8, 2020), https://www.theguardian.com/environment/2020/may/08/sea-levels-could-rise-more-than-a-metre-by-2100-experts-say; Damian Carrington, *Greenland Ice Sheet Lost a Record 1m Tonnes of Ice Per Minute in 2019*, GUARDIAN (Aug. 20, 2020), https://www.theguardian.com/environment/2020/aug/20/greenland-ice-sheet-lost-a-record-1m-tonnes-of-ice-per-minute-in-2019; Harold R Wanless, *Sea Levels Are Going to Rise by at Least 20ft. We Can Do Something About It*, GUARDIAN (Apr. 13, 2021), https://www.theguardian.com/environment/commentisfree/2021/apr/13/sea-level-rise-climate-emergency-harold-wanless; Oliver Milman, *Global Heating Pace Risks 'Unstoppable' Sea Level Rise as Antarctic Ice Sheet Melts,* GUARDIAN (May 5, 2021), https://www.theguardian.com/environment/2021/may/05/antarctica-ice-sheet-melting-global-heating-sea-level-rise-study.

49. Sudha Ramachandran, *The India-Bangladesh Wall: Lessons for Trump*, DIPLOMAT (Feb. 15, 2017), https://thediplomat.com/2017/02/the-india-bangladesh-wall-lessons-for-trump/.

50. *Id*. Reece Jones, associate professor at the University of Hawaii and author of *Violent Borders: Refugees and the Right to Move*, observes that "[b]order fences rarely work to stop migration." He notes that most borders "are too long and too lightly guarded to have an impact on people moving through that space." *Id.*

51. *See* Kristine Phillips, *As Trump Pushes for a Wall, Authorities Keep Finding Drug Tunnels Under the U.S.-Mexico Border*, WASH. POST (Jan. 15, 2019), https://www.washingtonpost.com/world/2019/01/14/trump-pushes-wall-authorities-keep-finding-drug-

inevitably consume an increasing share of a nation's wealth, which gradually becomes insupportable.[52] Moreover, the catastrophic effects of climate change may well overwhelm all attempts to militarize border policies, leaving social unrest "beyond the possibility of control, except by drastic methods and perhaps not even then."[53] Third, the human suffering caused by this strategy causes a political[54] as well as legal backlash.[55] There is good reason to believe that pandemics will amplify those repercussions, intertwining moral outrage at the social injustices that underlie growing inequality with indignation at the treatment of immigrants. Unless governments intervene to mitigate the suffering, the cumulative effect of the systemic social injustices at the root of our environmental and public health catastrophes could well result in rage against the perception of a dysfunctional government.[56] Fourth, and most urgently, there are pragmatic, self-interested reasons to support human rights; we need transparency during pandemics, and we need policy responses that do not increase disease vectors by herding refugees together.[57] Population density is an important factor

---

tunnels-under-us-mexico-border/; *see* Nick Miroff, *Smugglers Are Sawing Through New Sections of Trump's Border Wall*, WASH. POST (Nov. 2, 2019), https://www.washingtonpost.com/national/smugglers-are-sawing-through-new-sections-of-trumps-border-wall/2019/11/01/25bf8ce0-fa72-11e9-ac8c-8eced29ca6ef_story.html.

52. Ramachandran, *supra* note 48, ("Not only are their fences not particularly effective but also, constructing and managing them are enormously expensive in terms of money and human lives.").

53. TODD MILLER, STORMING THE WALL: CLIMATE CHANGE, MIGRATION, AND HOMELAND SECURITY 116 (2017) (quoting Leon Fuerth, *Security Implications of Climate Scenario 2: Severe Climate Change Over the Next Thirty Years*, *in* CLIMATE CATACLYSM 133, 138 (Kurt M. Campbell ed., 2008)).

54. *See* David Smith & Tom Phillips, *Child Separations: Trump Faces Extreme Backlash from Public and His Own Party*, GUARDIAN (June 19, 2018), https://www.theguardian.com/us-news/2018/jun/19/child-separation-camps-trump-border-policy-backlash-republicans.

55. *See* Sarah Dávila-Ruhaak, *The Sprouting of Human Rights Initiatives in the Midst of a Storm*, 74 NAT'L LAW. GUILD REV. 100, 101 (2017) (discussing the Human Rights for Syrians Initiative (HRSI) of the International Human Rights Clinic at the John Marshall Law School).

56. *See* Laurie Garrett *quoted in* Frank Bruni, *She Predicted the Coronavirus: What Does She Foresee Next?* N.Y. TIMES (May 2, 2020), https://www.nytimes.com/2020/05/02/opinion/sunday/coronavirus-prediction-laurie-garrett.html?searchResultPosition=1. We may be seeing anger arising in Africa at the world's response to Covid. Lesley Wroughton et al., *Facing the Delta Variant Wave with Few Vaccine Doses, African Countries Suffer – and Bristle with Anger*, WASH. POST (July 1, 2021), https://www.washingtonpost.com/world/2021/07/01/south-africa-uganda-coronavirus/.

57. As Kenneth Roth, Former Executive Director of Human Rights Watch, puts it:

> A neglected population—whether migrant workers in Singapore, asylum seekers on the Greek Islands, displaced people in South Sudan, meat-processing workers in the United States, or inmates in overpacked prisons around the world—can become an incubator for the virus. Once it thrives in one community, the virus will have little trouble jumping societal divisions, international borders, or even prison walls to infect others. Discrimination and exclusion can kill. Equal rights protect us all.

influencing disease vectors; the denser the population, the more quickly an infectious disease can spread.[58] The more people one comes into contact with while infectious, the more the disease spreads.[59] Moreover, "[m]any migrants and refugees are living in overcrowded camps or shelters with little or no access to running water and adequate sanitation or access to health care or testing – so they cannot follow government advice to curb the spread of this highly infectious virus."[60] Herding refugees and environmental migrants into camps for displaced people paradoxically increases the odds of disease spreading out to the rest of the world.[61] Those who are wealthy can better protect themselves, but are not immune.[62] If this is true, militarizing the problem will prove self-defeating.[63] The things we do not know and cannot reasonably anticipate should prompt us to apply a robust precautionary principle.

IV. LINKAGES: DISEASE AND WILD WEATHER

In addition to destructive health effects, climate change will cause large-scale injurious environmental changes such as sea level rise,[64]

Kenneth Roth, *We Can Beat the Virus Only by Protecting Human Rights*, WASH. POST (May 6, 2020), https://www.hrw.org/news/2020/05/06/we-can-beat-virus-only-protecting-human-rights.

58. Krisztian Magori & John M. Drake, *The Population Dynamics of Vector-Borne Diseases*, NATURE EDUC. KNOWLEDGE PROJECT, https://www.nature.com/scitable/knowledge/library/the-population-dynamics-of-vector-borne-diseases-102042523/ (last visited Nov. 23, 2022).

> [A] notable feature is the proportion of the total number of vectors and hosts, which is directly proportional to the basic reproductive ratio . . . implying that reducing the vector population can control vector-borne pathogens. Since the pathogen will not be able to invade and persist unless its basic reproductive ratio exceeds one, vector control may be successful in preventing and halting disease spread even when the vector population is not completely extinct.

59. James Gorman, *The Coronavirus, by the Numbers*, N.Y. TIMES (Mar. 20, 2020), https://www.nytimes.com/2020/03/05/health/coronavirus-deaths-rates.html (presenting an interview with Adam Kucharski, mathematician with London School of Hygiene & Tropical Medicine).

60. MARK AKKERMAN, COVID-19 AND BORDER POLITICS 3 (2020).

61. *See Rohingya Refugees in Bangladesh at Risk of Covid-19 Infection*, AL JAZEERA (Mar. 30, 2020), https://www.aljazeera.com/videos/2020/3/30/rohingya-refugees-in-bangladesh-at-risk-of-covid-19-infection (explaining that conditions in crowded Rohingya camps in southeastern Bangladesh put at risk a million refugees for contracting the novel coronavirus and that Bangladeshi authorities have shut down Internet access in and around the camps, increasing the danger).

62. Joey Hadden et al., *Notable Figures Around the World Who Are Believed to Have Died of the Coronavirus*, INSIDER (Oct. 1, 2020), https://www.businessinsider.com/high-profile-people-who-have-died-coronavirus-related-illness-so-far-2020.

63. See Ivón Padilla-Rodriquez, *The Extraordinary Scene Unfolding in Portland Has a Disturbing History: How Immigration Enforcement and Policing Became Entwined*, WASH. POST (July 19, 2020), https://www.washingtonpost.com/outlook/2020/07/19/extraordinary-scene-unfolding-portland-has-disturbing-history/, for a short commentary documenting the dystopic effects of entwining policing and immigration enforcement.

64. GOODELL, *supra* note 46, at 11.

desertification,[65] increasingly vicious weather, ocean acidification,[66] and massive extinction of species[67]—all direct effects of an increasingly warm, energetic, and hostile world. This raises two intersecting human rights problems: desperation-driven human migration[68] and widespread ill health. The warming climate amplifies both disease vectors and environmental degradation, magnifying and worsening disease and migration.[69]

Each problem carries economic costs. By taking "money away from projects that provide climate resilience,"[70] pandemics reduce our ability to mitigate the effects of climate change. In the U.S., Covid-19 came during what had been one of the hottest years on record,[71] hitting poor, underserved populations with limited access to air conditioning the hardest.[72] With air-

---

65. Alisher Mirzabaev et al., *Desertification*, *in* CLIMATE CHANGE AND LAND: AN IPCC SPECIAL REPORT ON CLIMATE CHANGE, DESERTIFICATION, LAND DEGRADATION, SUSTAINABLE LAND MANAGEMENT, FOOD SECURITY, AND GREENHOUSE GAS FLUXES IN TERRESTRIAL ECOSYSTEMS 249, 251 (2019) ("Desertification and climate change, both individually and in combination, will reduce the provision of dryland ecosystem services and lower ecosystem health, including losses in biodiversity.").

66. *See* O. Hoegh-Guldberg et al., *Coral Reefs Under Rapid Climate Change and Ocean Acidification*, 318 SCI. 1737, 1740–41 (2007); *CO2 and Ocean Acidification: Causes, Impacts, Solutions*, UNION OF CONCERNED SCIENTISTS (Feb. 6, 2019), https://www.ucsusa.org/resources/co2-and-ocean-acidification.

67. *See, e.g.*, ELIZABETH KOLBERT, THE SIXTH EXTINCTION: AN UNNATURAL HISTORY 2–3 (2014) (arguing that we are experiencing a human-driven extinction event and providing examples of species that have gone extinct or are now facing extinction).

68. *See generally* MILLER, *supra* note 52 (discussing expectations of a refugee crisis as the effects of climate change become more pronounced).

69. *See supra* Part II. For example, the many Rohingya refugees fleeing Myanmar have been shut into refugee camps that have created immense local environmental destruction. *See, e.g.*, Malavika Vyawahare, *Cox's Bazar: Rohingya Camp to be Hardest Hit by Climate Change*, AL JAZEERA (Dec. 19, 2018), https://www.aljazeera.com/features/2018/12/19/coxs-bazar-rohingya-camp-to-be-hardest-hit-by-climate-change/ (describing impoverished living conditions of the refugee camps accompanied by deforestation, depletion and contamination of water resources, hill collapse and erosion, as well as increased vulnerability to monsoons and cyclones).

70. Christopher Flavelle, *Here's How the Coronavirus Could Raise Cities' Risk for Climate Disasters*, N.Y. TIMES (Apr. 24, 2020), https://www.nytimes.com/2020/04/23/climate/coronavirus-cities-infrastructure-money.html.

71. *Surface Air Temperature for April 2020*, EUR. UNION COPERNICUS CLIMATE CHANGE SERV., https://climate.copernicus.eu/surface-air-temperature-april-2020 (last visited Nov. 16, 2022) ("Global temperatures were much above average in April 2020, making the month one of the two warmest Aprils on record. It was: 0.70°C warmer than the average April from 1981-2010; cooler than April 2016, the warmest April in this dataset, by an insignificant 0.01°C; warmer by 0.08°C than April 2019, the third warmest April."); *see also* Andrew Freeman, *Global Warming Pushes April Temperatures into Record Territory as 2020 Heads for Disquieting Milestone*, WASH. POST (May 5, 2020), https://www.washingtonpost.com/weather/2020/05/05/global-warming-pushes-april-temperatures-into-record-territory-2020-heads-disquieting-milestone/.

72. Maanvi Singh, *'A Summer Unlike Any Other': Heatwaves and Covid-19 are a Deadly Combination*, GUARDIAN (May 30, 2020), https://www.theguardian.com/us-news/2020/may/30/coronavirus-heatwaves-health-summer-us-cities ("This year is on track to be one of the hottest on record, and public health officials worry that in cities across the US, summer heatwaves

conditioned malls and libraries shut down, and cooling centers inadequate to the need, people succumb to heat stroke.[73] Excessive heat and pandemics combine to make each worse than either would have been on its own; heat makes pandemics harder to contain and pandemics make dealing with heat more difficult.[74]

In some parts of the world, heat is already reaching beyond the body's capacity to endure.[75] Climate scientist James Hansen predicts that "the tropics and the Middle East in summer are in danger of becoming practically uninhabitable by the end of the century if business-as-usual fossil fuel emissions continue."[76] Assuming current greenhouse gas emissions, heat stress is predicted to affect "areas now home to 1.2 billion people by 2100."[77] Some climate change models indicate increases in global average temperatures sufficient to render large parts of the planet uninhabitable.[78] Heat stress is already killing people in the United States and Canada,[79] and

---

will collide with the coronavirus pandemic, *with deadly consequences for poor, minority and older populations*" (emphasis added)).

73. *Id.*

74. *Morbidity and Mortality Weekly Report: Heat Related Deaths—United States, 2004-2018*, CDC (June 19, 2020), https://www.cdc.gov/mmwr/volumes/69/wr/mm6924a1.htm?s_cid=mm6924a1_e&deliveryName=USCDC_921-DM30873 (discussing inter alia updated guidance for providing public access to cooling centers during the pandemic).

75. Jeff Berardelli, *Heat Waves and Climate Change: Is There a Connection?*, YALE CLIMATE CONNECTIONS (June 25, 2019), https://www.yaleclimateconnections.org/2019/06/heat-waves-and-climate-change-is-there-a-connection/; Michael Safi, *Death Toll Climbs in Karachi Heatwave*, GUARDIAN (May 22, 2018), https://www.theguardian.com/world/2018/may/22/death-toll-climbs-in-karachi-heatwave; Simon Lewis, *Canada is a Warning: More and More of the World will Soon Be Too Hot for Humans*, GUARDIAN (June 30,2021), https://www.theguardian.com/commentisfree/2021/jun/30/canada-temperatures-limits-human-climate-emergency-earth. Simon Lewis is professor of global change science at University College London & University of Leeds. *Id.*

76. Berardelli, *supra* note 75; *see also* David Shukman, *Climate Change: Summers Could Become 'Too Hot for Humans*,*'* BBC NEWS (July 16, 2020), https://www.bbc.com/news/science-environment-53415298?et_rid=333505256&et_cid=3411717.

77. Todd Bates, *Heat Stress May Affect More than 1.2 Billion People Annually by 2100*, RUTGERS TODAY (Mar. 11, 2020), https://www.rutgers.edu/news/heat-stress-may-affect-more-12-billion-people-annually-2100.

78. Steven C. Sherwood & Matthew Huber, *An Adaptability Limit to Climate Change Due to Heat Stress*, 107 PROC. NAT'L ACAD. SCI. 9552, 9555 (2010), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2906879/pdf/pnas.0913352107.pdf ("If warmings of 10°C were really to occur in next three centuries, the area of land likely rendered uninhabitable by heat stress would dwarf that affected by rising sea level. Heat stress thus deserves more attention as a climate-change impact.").

79. Bob Henson & Jeff Masters, *Western Canada Burns and Deaths Mount After World's Most Extreme Heat Wave in Modern History*, YALE CLIMATE CONNECTIONS (July 1, 2021), https://yaleclimateconnections.org/2021/07/western-canada-burns-and-deaths-mount-after-worlds-most-extreme-heat-wave-in-modern-history/; *see also Canada Weather: Dozens Dead as Heatwave Shatters Records*, BBC (June 30, 2021), https://www.bbc.com/news/world-us-canada-57654133.

governmental inaction exacerbates the problem,[80] which hits poor and racialized communities disproportionately.[81] The massive western heat domes in 2021 are, without aggressive action now, a harbinger of far worse to come.[82] It may seem counterintuitive given all the publicity that low-lying islands present,[83] but these increasing temperatures suggest that heat stress may well be a more important driver of both migration and ill-health than sea level rise or desertification.[84] Moreover, for indigenous communities in the Arctic, such as the Inuit people, the difficulty revolves around the rapid loss of ice threatening their way of life.[85]

Migration from flood prone areas may be far more complicated than simply moving inland. Heat, pandemics, floods, desertification, and sea level rise will interlock in ways that make adaptation or migration phenomenally difficult, with each exacerbating the other in poorly understood feedback loops. For example, recent studies demonstrate that air pollution and heat exposure are linked to "adverse pregnancy outcomes, such as preterm birth, low birth weight, and still birth," not just in tropical areas but in the United

---

80. Dean Russell et al., *Deadly Heat is Killing Americans: A Decade of Inaction on Climate Puts Lives at Risk*, GUARDIAN & COLUM. JOURNALISM INVESTIGATIONS (June 16, 2020), https://www.theguardian.com/us-news/2020/jun/16/climate-deaths-heat-cdc.

81. Tik Root, *Heat and Smog Hit Low-Income Communities and People of Color Hardest, Scientists Say*, WASH. POST (May 25, 2021), https://www.washingtonpost.com/climate-environment/2021/05/25/heat-inequality-climate-change/.

82. Michael E. Mann & Susan Joy Hassol, *That Heat Dome? Yeah, It's Climate Change.*, N.Y. TIMES (June 29, 2021), https://www.nytimes.com/2021/06/29/opinion/heat-dome-climate-change.html.

> These changes matter because extreme heat is the deadliest form of extreme weather in the United States, causing more deaths on average than hurricanes and floods combined over the past 30 years. Recent research projects that heat stress will triple in the Pacific Northwest by 2100 unless aggressive action is taken to reduce heat-trapping greenhouse gas emissions.

Id. A heat dome occurs when the atmosphere traps hot ocean air like a cap. *What is a heat dome?*, NOAA, https://oceanservice.noaa.gov/facts/heat-dome.html (last visted Dec. 22, 2023).

83. Richard Schiffman, *As Sea Levels Rise, Tropical Pacific Islands Face a Perfect Storm,* YALE ENV'T 360 (July 6, 2017), https://e360.yale.edu/features/as-seas-rise-tropical-pacific-islands-face-a-perfect-storm; *see also* Michael Oppenheimer et al., *Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities, in* IPCC SPECIAL REPORT ON THE OCEAN AND CRYOSPHERE IN A CHANGING CLIMATE 321, 323 (H.-O. Pörtner et al., eds., 2019), http://www.ipcc.ch/site/assets/uploads/sites/3/2022/03/06_SROCC_Ch04_FINAL.pdf.

84. Oliver Milman, *Rising Temperatures Will Cause More Deaths Than All Infectious Diseases–Study*, GUARDIAN (Aug. 4, 2020), https://www.theguardian.com/us-news/2020/aug/04/rising-global-temperatures-death-toll-infectious-diseases-study.

85. Lindsay Bird, *'It Keeps Me Up at Night': Inuit Leader Natan Obed Presses for Climate Change Action*, CBC NEWS (May 25, 2021), https://www.cbc.ca/news/canada/newfoundland-labrador/natan-obed-itk-climate-change-1.6030706; Lindsay Bird, *As Shrubs Take Over Labrador's Tundra, the Effects of Climate Change Stretch Beyond the Ice*, CBC NEWS (Apr. 29, 2021), https://www.cbc.ca/news/canada/newfoundland-labrador/thin-ice-labrador-summer-climate-changes-1.6005130.

States.[86] People will flee one problem only to encounter others as climate change spreads difficulties worldwide.

The Covid-19 pandemic is, "with the climate and biodiversity crises, . . . a direct consequence of human activity."[87] This is because "more than 70% of all emerging diseases affecting people hav[e] originated in wildlife and domesticated animals. Pandemics, however, are caused by activities that bring increasing numbers of people into direct contact and often conflict with the animals that carry these pathogens."[88]

> The majority of pathogens that have emerged since 1940 originated in the bodies of animals and entered human populations not because they invaded us but because we invaded their habitats. By encroaching on wetlands and cutting down forests, we've forced wild animals to crowd into ever smaller fragments of habitat, drawing them into intimate contact with human populations.[89]

A warming world not only increases the range of many infectious diseases as they follow a warming climate towards the poles and higher up mountain slopes,[90] but also increases the interaction between human and

---

86. Bruce Bekkar et al., *Association of Air Pollution and Heat Exposure with Preterm Birth, Low Birth Weight, And Stillbirth in the US: A Systematic Review*, JAMA (June 18, 2020), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2767260.

87. Josef Settele et al., *COVID-19 Stimulus Measures Must Save Lives, Protect Livelihoods, and Safeguard Nature to Reduce the Risk of Future Pandemics*, IPBES (Apr. 27, 2020), https://ipbes.net/covid19stimulus. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) provides multidisciplinary expert science and policy assessments "for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development." *About What is IPBES?*, IPBES, https://ipbes.net/about (last visited Nov. 17, 2022). It is the foremost expert body dealing with global assessment of the global environment including diseases caused by or made worse by the changing global environment. It serves a similar role to the Intergovernmental Panel on Climate Change (IPCC) by seeking to improve science and policy on biodiversity and ecosystem services.

88. Settele, *supra* note 87; *see also* Jonathan Watts, *Promiscuous Treatment of Nature Will Lead to More Pandemics–Scientists*, GUARDIAN (May 7, 2020), https://www.theguardian.com/environment/2020/may/07/promiscuous-treatment-of-nature-will-lead-to-more-pandemics-scientists ("A growing body of research confirms that bats – the origin of Covid 19 – naturally host many viruses which they are more likely transfer to humans or animals if they live in or near human-disturbed ecosystems, such as recently cleared forests or swamps drained for farmland, mining projects or residential projects.").

89. Sonia Shah, *It's Time to Tell a New Story About the Coronavirus—Our Lives Depend on It*, NATION (July 14, 2020), https://www.thenation.com/article/society/pandemic-definition-covid/3.

90. Bhadra Sharma & Kai Schultz, *As Himalayas Warm, Nepal's Climate Migrants Struggle to Survive*, N.Y. TIMES (Apr. 5, 2020), https://www.nytimes.com/2020/04/05/world/asia/nepal-himalayas-glacier-climate.html.

animal species.[91] Both processes increase the probability of future pandemics even as they contribute to human migration. For example, as the Himalayas warm, its glaciers melt causing water scarcity.[92] The people from the Mustang region of Nepal moved down to lower elevations in search of land with sufficient water for agriculture and livestock grazing, even as malaria-causing mosquitoes are appearing in the highlands.[93] Scientists say rising temperatures could spread malaria and dengue fever.[94]

People fleeing earlier pandemics such as the medieval-era Black Death are well documented.[95] Similarly, Covid-19 caused mass migration away from Peru's largest city, Lima, as the "pandemic and the ensuing shutdown of the country's economy is bringing about a radical reversal of long-standing migration patterns, and revealing the flaws in the government's response to the crisis."[96] Ironically, periods of heavy rain and drought magnified by climate change cause food insecurity in the Andes. This drives many Indigenous Peoples in Peru[97] and elsewhere[98] in the Andes out of the

---

91. *Id.* (explaining that, for example, by driving people to retreat to lower altitudes in the Himalaya mountains even as disease-bearing mosquitoes move up into those same areas, climate change increases the interaction between disease vectors). *See also*, Xiaoxu Wu et al., *Impact of Climate Change on Human Infectious Diseases: Empirical Evidence and Human Adaptation*, 86 ENV'T INT'L 14, 20 (Oct. 18 2015), https://reader.elsevier.com/reader/sd/pii/S0160412015300489?token=627677EF658C815F330E07F3BE39E6AE732385F62F05E495C7DBF3F4D4034CEA262627934AF68C6E337578D790ADFFAB&originRegion=us-east-1&originCreation=20221015103332 (reviewing the literature on the impact of climate change on infectious diseases and demonstrating different ways in which climate, humans, and disease vectors can interact).

92. *See, e.g.* ROYAL HOLLOWAY UNIV. OF LONDON, *Glaciers as a Water Resource*, ANTARCTICGLACIERS.ORG 4 (2022), https://www.antarcticglaciers.org/wp-content/plugins/antarcticglaciers-pdf/download.php?p=8977. "Essentially, as the glaciers shrink, they provide less and less meltwater from long-term storage, which impacts seasonal freshwater storage." *Id.* "In most basins fed by High Mountain Asia . . . annual glacier runoff is projected to rise until the middle of the century, followed by steadily declining glacier meltwater thereafter." *Id.* at 6.

93. Sharma & Schultz, *supra* note 90.

94. *Id.*

95. Stuart Borsch & Tarek Sabraa, *Refugees of the Black Death: Quantifying Rural Migration for Plague and Other Environmental Disasters*, 134 ANNALES DE DÉMOGRAPHIE HISTORIQUE 63, 63 (2017), https://www.cairn.info/revue-annales-de-demographie-historique-2017-2-page-63.htm#.

96. Musuk Nolte et al., *Covid-19 Is Forcing an Exodus From Peru's Cities*, NATION (May 11, 2020), https://www.thenation.com/article/world/peru-coronavirus-covid-19/.

97. Laura Berdejo, *Peru Faces a Surge of Climate Migrants*, UNESCO COURIER, Oct.–Dec. 2021, at 14, 16 , https://unesdoc.unesco.org/ark:/48223/pf0000379252_eng. "In the highlands, the effects of climate change have accelerated the historically large flows of migrants due to cold waves and freezing weather, water shortages caused by glacier retreat, and changes in rainfall patterns. In the *selva* region, farmers migrate mainly as a temporary and precautionary measure during the rainy season, to mitigate food insecurity." *Id.*

98. Nicholas Casey, *Climate Change Claims a Lake and an Identity*, N.Y. TIMES (July 7, 2016), https://www.nytimes.com/interactive/2016/07/07/world/americas/bolivia-climate-change-lake-poopo.html.

highlands and into the cities. The coronavirus pandemic now forces a desperate decision to return to a homeland abandoned because of climate change.

Similarly, in 2020, people in both Canada and the United States with sufficient resources to do so fled Covid-19.[99] The difference between North Americans fleeing cities and impoverished people leaving the cities of Central and Latin America appears to be wealth.[100] In New York City, for example, the richest were able to flee leaving those less well-off to stay and face the virus in densely-populated neighborhoods.[101]

At the same time, even in North America, people are fleeing the effects of climate change. Fleeing sea level rise, the Inupiat of Shishmaref, Alaska, and the Choctaw of Isle de Jean Charles, Louisiana, are perhaps the first documented peoples in North America displaced by climate change[102]—harbingers of a future where millions will inevitably flee both rising waters[103] as well as pandemics, heat, drought, flooding, cyclones, and tornadoes.

The threat of Covid-19, even during a lockdown, cannot deter people from fleeing greater threats—remaining locked down to escape a randomly lethal virus is not an option for those fleeing likely death.[104] As such:

> Coronavirus is also putting refugees, asylum-seekers and internally displaced people – among the most vulnerable populations in the world – at even greater risk by threatening their

---

99. The Canadian Press, *Covid-19: In Canada's North, Authorities Worry About Fleeing City-Dwellers Spreading Coronavirus*, NAT'L POST (Apr. 6, 2020), https://nationalpost.com/news/canada/covid-19-in-canadas-north-authorities-worry-about-fleeing-city-dwellers-spreading-coronavirus.

100. Social scientists will find this a rich area for research. Is there a wealth gap in people fleeing pandemics? If so, what does this mean for social inequality? How does this mirror people who fled pandemics historically?

101. Kevin Quealy, *The Richest Neighborhoods Emptied Out Most as Coronavirus Hit New York City*, N.Y. TIMES (May 15, 2020), https://www.nytimes.com/interactive/2020/05/15/upshot/who-left-new-york-coronavirus.html?utm_source=pocket-newtab.

102. The indigenous people of Shismaref, Alaska are having to flee their island home as sea level rise makes their home uninhabitable. *See* ELIZABETH KOLBERT, FIELD NOTES FROM A CATASTROPHE: MAN, NATURE, AND CLIMATE CHANGE, ch. 1, 7–34 (2007). Similarly, the Choctaw of Isle de Jean Charles in Louisiana, having escaped the Trail of Tears in the 1830s are also having to relocate because of rising sea levels. Robynne Boyd, *The People of the Isle de Jean Charles Are Louisiana's First Climate Refugees-but They Won't be the Last*, NAT. RES. DEF. COUNCIL (Sept. 23, 2019), https://www.nrdc.org/stories/people-isle-jean-charles-are-louisianas-first-climate-refugees-they-wont-be-last.

103. GOODELL, *supra* note 46, at 11.

104. Pierre-Marc René, *Death Threats Drive Refugees to Flee Coronavirus Lockdown*, U.N. HIGH COMM'R FOR REFUGEES (Apr. 28, 2020), https://www.unhcr.org/news/stories/2020/4/5ea713024/death-threats-drive-refugees-flee-coronavirus-lockdown.html (recounting the story of people fleeing death threats from gang members notwithstanding the dangers of fleeing during a pandemic).

> often-meagre sources of income. Additionally, the living conditions of many refugees, particularly new arrivals in their host countries . . . often make it difficult for them to take preventative measures.[105]

We tend to think the bloody Syrian civil war, with its millions of refugees "living in overcrowded informal settlements,"[106] was caused by terror and poor governance; Bashir Al-Assad's authoritarian government[107] is known for political repression, torture, killings, corruption, and inequality.[108] These were major factors. However, repression was not the sole cause of this conflict. The extreme drought made worse by climate change devastated rural Syrian farms, causing mass migration to the cities.[109] This led to unemployment, hunger, and civil unrest which contributed to the regime's brutal crackdown.[110] Thus, climate change likely contributed to

---

105. *Id.*

106. *ITB/2021/001: Provision of IPC Kits*, DALEEL MADANI (Feb. 23, 2021), https://daleel-madani.org/civil-society-directory/development-people-and-nature-association/calls/itb2021001-provision-ipc-kits; *see also Syria Refugee Crisis*, USA FOR UNHCR, https://www.unrefugees.org/emergencies/syria/ (last visited Dec. 4, 2022). The United Nations High Commissioner for Refugees estimates that in 2021:

> As the Syria crisis enters its eleventh year, the humanitarian situation is more difficult than ever. An estimated 14.6 million people need humanitarian assistance and more than half of the population remains displaced from their homes – including 5.6 million refugees living in neighboring countries and more than 6.9 million internally displaced inside Syria. Women and children comprise more than two thirds of those displaced.

Syria Refugee Crisis, *supra*.

107. Mahdi Karimi & Sayed Masoud Mousavi Shafaee, *Poor Governance and Civil War in Syria,* 5 TURKISH J. MIDDLE E. STUD. 49, 67 (2018).

108. *Syria's War Explained from the Beginning*, AL JAZEERA (Apr. 14, 2018), https://www.aljazeera.com/news/2018/4/14/syrias-war-explained-from-the-beginning; *see also*, Primoz Manfreda, *10 Factors That Led to the Syrian Uprising*, THOUGHTCO. (Jan. 14, 2020), https://www.thoughtco.com/top-10-reasons-for-the-uprising-in-syria-2353571 (stating that "In 2006, Syria began suffering through its worst drought in over nine decades. According to the United Nations, 75% of Syria's farms failed, and 86% of the livestock died between 2006–2011. Some 1.5 million impoverished farmer families were forced to move into rapidly expanding urban slums in Damascus and Homs, alongside Iraqi refugees. Water and food were almost non-existent. With little to no resources to go around, social upheaval, conflict, and uprising naturally followed."); *see generally* Kamal Eldin Osman Salih, *The Roots and Causes of the 2011 Arab Spring*, 35 ARAB STUD. Q. 184, 184 (2013) (discussing how the Arab spring in various Middle Eastern countries involved "state attempts at repression, internet censorship, crowd control, and even physical attack to the point of protestors being beaten or shot point blank. Many of the demonstrations in the Arab Spring have met violent responses from authorities, as well as from pro-government militias and counter-demonstrators.").

109. Peter H. Gleick, *Water, Drought, Climate Change, and Conflict in Syria*, 6 AM. METEOROLOGICAL SOC'Y 331, 333 (2014).

110. Manfreda, *supra* note 108.

conflict in Syria,[111] resulting in hundreds of thousands of deaths.[112] The refugee camps, and the overcrowded living conditions of others not living in the camps, are also a breeding ground for infectious diseases. In Jordan alone, nearly 120,000 Syrians live in two large camps.[113] While the United Nations High Commissioner for Refugees' Office is doing what it can to mitigate the spread of Covid-19 to refugees, including internally displaced people and those in camps,[114] the pandemic has spread,[115] raising fears of rapid spread in the densely overcrowded refugee camps.[116]

The persecution, ethnic cleansing, and potential genocide of the Rohingya from the Rahkine State in Myanmar is well documented.[117] Many Rohingya Muslims, living in predominantly Buddhist Myanmar, fled the violence into neighboring Bangladesh.[118] There they crowded into densely

---

111. "There is some evidence that the recent drought is an early indicator of the climatic changes that are expected for the region, including higher temperature, decreased basin rainfall and runoff, and increased water scarcity." Gleick, *supra* note 109, at 338.

112. *Note to Correspondents: Transcript of Press Stakeout by United Nations Special Envoy for Syria, Mr. Staffan de Mistura*, UNITED NATIONS SEC'Y-GEN. (Apr. 22, 2016), https://www.un.org/sg/en/content/sg/note-correspondents/2016-04-22/note-correspondents-transcript-press-stakeout-united.

113. Charlie Dunmore et al., *Syrian Refugees Adapt to Life Under Coronavirus Lockdown in Jordan*, UNHCR (Apr. 2, 2020), https://www.unhcr.org/news/stories/2020/4/5e84a3584/syrian-refugees-adapt-life-under-coronavirus-lockdown-jordan-camps.html.

114. *Id.*

115. Martin Chulov, *Fears Realised as First Covid-19 Case Found in Lebanon Refugee Camp,* GUARDIAN (Apr. 22, 2020), https://www.theguardian.com/world/2020/apr/22/fears-realised-as-first-covid-19-case-diagnosed-in-lebanon-refugee-camp.

116. "[I]n Lebanon, Syria, Iraq, Turkey and Jordan, where more than 12 million refugees, or internally displaced people, have little access to life-saving health care and cannot practise physical distancing." *Id.*; *see also WHO & Partners Enhance Support to Covid-19 Response in Rohingya Camps in Cox's Bazar*, WHO: SOUTH-EAST ASIA (June 30, 2020), https://www.who.int/southeastasia/news/feature-stories/detail/who-partners-enhance-support-to-covid-19-response-in-rohingya-camps-in-coxs-bazar.

117. Application of the Convention on the Prevention and Punishment of the Crime of Genocide (The Gam. v. Myan.), 2020 I.C.J. No. 178 , ¶ 55 (Jan. 23) [hereinafter The Gam. v. Myan.].

> The Court notes that the reports of the Fact-Finding Mission . . . have indicated that, since October 2016, the Rohingya in Myanmar have been subjected to acts which are capable of affecting their right of existence as a protected group under the Genocide Convention, such as mass killings, widespread rape and other forms of sexual violence, as well as beatings, the destruction of villages and homes, denial of access to food, shelter and other essentials of life.

Id. ¶ 71. As indicated in resolution 74/246 adopted by the General Assembly on 27 December 2019, this has caused almost 744,000 Rohingya to flee their homes and take refuge in neighboring Bangladesh. G.A. Res. 74/246, at 4 (Dec. 27, 2019). According to the 2019 detailed findings of the Fact-Finding Mission, approximately 600,000 Rohingya remained in Rakhine State as of September 2019. Rep. of the Hum. Rts. Council, Detailed Findings of the Independent International Fact-Finding Mission on Myanmar, U.N. Doc. A/HRC/42/CRP.5, ¶¶ 4, 57, 107, 120, 158, 212 (Sept. 16, 2019).

118. The Gam. v. Myan, 2020 I.C.J. ¶ 54.; KATE PINCOCK ET AL., THE GLOBAL GOVERNED? REFUGEES AS PROVIDERS OF PROTECTION AND ASSISTANCE 2 (2020).

packed refugee camps in the Cox's Bazar region, which borders Myanmar's Rahkine State.[119] Cox's Bazar hosts the world's largest refugee camp.[120] Climate change likely exacerbated tensions between them and the Buddhist majority, contributing to the violence.[121] Their plight also demonstrates other intersecting linkages between climate change, pandemics, refugees, and environmental destruction. The Rohingya's flight into neighboring Bangladesh brought environmental destruction, which in turn makes Cox's Bazar even more susceptible to the ravages of climate change.

> The hilly tracts of Cox's Bazar could foster an environmental crisis brought on by indiscriminate deforestation and vanishing groundwater reservoirs. In the long run, this would make the region more prone to the effects of climate change. If greenhouse gas emissions continue unabated, by 2050, Cox's Bazar will be the worst-hit district in South Asia as average temperatures rise and rainfall patterns become disruptive, a June 2018 World Bank Report found.[122]

These densely-packed refugee camps "are leaving a million Rohingya refugees at risk of contracting the new coronavirus."[123] On May 14, 2020, the first cases were detected in the camp.[124] Manish Agrawal, Bangladesh Country Director at the International Rescue Committee, points out people are "living 40,000 to 70,000 people per square kilometre. That's at least 1.6 times the population density on board the Diamond Princess cruise ship, where the disease spread four times as fast than in Wuhan at the peak of the

---

119. Vyawahare, *supra* note 69 ("Deforestation and degradation will see the Bangladesh land that hosts refugees suffer further from temperature rise."); *see also Rohingya Refugees Pushed to a Frontline of Climate Change*, TELESUR TV (Dec. 20, 2018), https://www.telesurenglish.net/news/Rohingya-Refugees-Pushed-to-a-Frontline-of-Climate-Change-20181220-0019.html.

120. Eleanor Albert & Lindsay Maizland, *The Rohingya Crisis*, COUNCIL ON FOREIGN RELS. (Jan. 23, 2020), https://www.cfr.org/backgrounder/rohingya-crisis.

121. *Climate Refugees*, UNIV. OF CAL., BERKELEY: OTHERING & BELONGING INST., https://belonging.berkeley.edu/climaterefugees/myanmar#footnote338_1rs0xq5 (last visited Nov. 20, 2022).

122. Vyawahare, *supra* note 69.

123. Mohammed Jamjoom, *Rohingya Refugees in Bangladesh at Risk of COVID-19 Infection*, AL JAZEERA (Mar. 30, 2020), https://www.aljazeera.com/videos/2020/3/30/rohingya-refugees-in-bangladesh-at-risk-of-covid-19-infection ("Activists are warning that conditions at crowded camps in southeast Bangladesh are leaving a million Rohingya refugees at risk of contracting the new coronavirus.").

124. *See* WHO, *supra* note 117 (stating that as of June 28, 2002, approximately 2,456 infection cases were confirmed in Cox's Bazar District and 50 refugees tested positive in the Rohingya camps).

outbreak."[125] Projections that thousands could die[126] were at first mitigated as a result of aggressive efforts of the World Health Organization.[127] That changed as Covid-19 cases spiked in the Rohingya camps, causing the Bangladesh government to lockdown all 34 camps containing some 740,000 refugees.[128] Bangladesh is approximately the size of Iowa, but with 160 million people, it is 50 times as densely populated.[129] Covid-19 hit Bangladesh hard, and the country is beginning to vaccinate its people, but it has yet to reach the Rohingya refugees.[130] It is a continuing problem that, in the densely packed communities, viruses continually mutate as a result of replication within human hosts. This creates opportunities for more highly infectious variants, some of which may be vaccine resistant, to arise and spread worldwide[131]—a matter of concern for everyone. Thus, climate change is increasing the risk and spread of infectious diseases,[132] even as climate change increases human migration. Bangladesh and the Rohingya refugee crisis demonstrate how climate change, pandemics, and human migration intersect in dystopic ways that can affect the entire world.

In a bizarre twist, the Bangladeshi government is relocating some of the Rohingya onto the low-lying, flood-prone island of Basan Char in the Bay of

---

125. *Coronavirus: Two Rohingya Test Positive in Refugee Camp*, BBC NEWS (May 14, 2020), https://www.bbc.com/news/world-asia-52669299; *see also* Michael Sullivan, *COVID-19 Has Arrived In Rohingya Refugee Camps and Aid Workers Fear the Worst*, NPR (May 15, 2020), https://www.npr.org/sections/coronavirus-live-updates/2020/05/15/856584129/covid-19-has-arrived-in-rohingya-refugee-camps-and-aid-workers-fear-the-worst.

126. BBC NEWS, *supra* note 125.

127. *See* Poonam Khetrapal Singh, *Covid-19: The Fight Is Far From Over in Cox's Bazar*, DIPLOMAT (Mar. 9, 2021), https://thediplomat.com/2021/03/covid-19-the-fight-is-far-from-over-in-coxs-bazar/.

128. *Bangladesh Puts Rohingya Camps Under Lockdown After COVID Spike*, AL JAZEERA (May 21, 2021), https://www.aljazeera.com/news/2021/5/21/bangladesh-puts-rohingya-camps-under-lockdown-after-covid-spike.

129. *Densely Populated Bangladesh Faces Immense Infection Control Challenge*, PBS NEWS HOUR (May 15, 2020), https://www.pbs.org/newshour/show/densely-populated-bangladesh-faces-immense-infection-control-challenge; Population, total - Bangladesh, WORLD BANK: DATA, https://data.worldbank.org/indicator/SP.POP.TOTL?locations=BD (last visited Dec. 4, 2022).

130. *Bangladesh Puts Rohingya Camps Under Lockdown After COVID Spike*, *supra* note 128.

131. *See* Laura Nightengale, *How COVID-19 Mutates and How it Affects Vaccines*, OSF HEALTHCARE (Apr. 23, 2021), https://www.osfhealthcare.org/blog/how-covid-19-mutates-and-how-it-affects-vaccines/.

132. Marina Romanello et. al., *Lancet Countdown on Health and Climate Change, 2022*, LANCET (OCT. 25, 2022), https://www.thelancet.com/infographics-do/climate-countdown-2022 ("Simultaneously, climate change is making environmental conditions increasingly suitable for the spread of infectious diseases in new locations, putting populations at higher risk of emerging diseases and co-epidemics."); *see also* WHO, *supra* note 40, at 104. Changes in infectious disease transmission patterns are a likely major consequence of climate change. We need to learn more about the underlying complex causal relationships, and apply this information to the prediction of future impacts, using more complete, better validated, integrated, models.

Bengal[133] and is proposing to relocate many more[134] in an attempt to "take pressure off crowded border camps."[135] Char islands are:

> [L]ow-lying, temporary sand islands that are continuously formed and destroyed through silt deposition and erosion. They're home to over six million people, who face repeated displacement from flooding and erosion—which may be getting worse because of climate change—and a range of health risks, including malnutrition, malaria, chronic diarrhea and other water-borne diseases.[136]

They are at risk for periodic cyclones and are barely habitable. "Yanghee Lee, the United Nations special rapporteur on Myanmar, . . . noted, '[t]here are a number of things that remain unknown to me even following my visit, chief among them being whether the island is truly habitable.'"[137] It is subject to being washed away in one of the region's many cyclones—weather systems that are increasingly enhanced by the increased energy from a warming climate.[138] Sea level rise will eventually render these Char islands uninhabitable.[139]

The primary cause for out-migration from Latin America to the United States has roots in the legacy of colonialism and intensive capitalism including massive, mechanized, and environmentally destructive

---

133. Arafatul Islam, *Rohingya: Relocated Refugees Say Life Was Better at Cox's Bazar*, DEUTSCHE WELLE (Feb. 26, 2021), https://www.dw.com/en/rohingya-relocated-refugees-say-life-was-better-at-coxs-bazar/a-56717730; *Concerns Raised After Rohingya Quarantined on Bangladeshi Island*, AL JAZEERA (May 5, 2020), https://www.aljazeera.com/news/2020/05/concerns-raised-rohingya-quarantined-bangladeshi-island-200505105338183.html.

134. Brad Adams, *For Rohingya, Bangladesh's Bhasan Char 'Will Be Like a Prison*,*'* HUM. RTS. WATCH (Mar. 14, 2019), https://www.hrw.org/news/2019/03/15/rohingya-bangladeshs-bhasan-char-will-be-prison.

135. *Concerns Raised After Rohingya Quarantined on Bangladeshi Island*, *supra* note 133.

136. Jennifer Chowdhury, *The Doctor Will Skype You Now: Virtual Checkups Reach Bangladesh's Isolated Islands*, NAT'L PUB. RADIO (Nov. 6, 2019), https://www.npr.org/sections/goatsandsoda/2019/11/06/775118353/the-doctor-will-skype-you-now-virtual-checkups-reach-bangladeshs-isolated-island.

137. Adams, *supra* note 134.

138. Jeff Berardelli, *How Climate Change Is Making Hurricanes More Dangerous*, YALE CLIMATE CONNECTIONS (July 8, 2019), https://www.yaleclimateconnections.org/2019/07/how-climate-change-is-making-hurricanes-more-dangerous/; *Hurricanes and Climate Change*, CTR. FOR CLIMATE & ENERGY SOLUTIONS, https://www.c2es.org/content/hurricanes-and-climate-change/ (last visited Nov. 20, 2022).

139. *See* S. Ghosh et al., *Trends of Sea Level in the Bay of Bengal Using Altimetry and Other Complimentary Techniques*, 63 J. SPATIAL SCI. 49, (2017) (estimating sea level rise from 6.26±1.45 mm/yr as a result of "changes in several components of the climate system").

agribusinesses leading to inequitable land distribution.[140] However, drought exacerbated by climate change is fast becoming a significant factor as well.[141] This has helped spread Covid-19 infections south of the U.S.–Mexico border.[142]

Similar dynamics are at play in North America. Population density and human movement, exacerbated by climate change, serve to increase disease vectors.[143] These pandemics both drive migration[144] and are spread by migration; similarly, climate change drives migration and increases environmental devastation both in the United States and abroad. Finally, both climate change and pandemics create intersecting problems for the economy, which if not dealt with, will heighten the social injustices which in turn magnify the crush of refugees, migrants, and internally displaced people.

Dr. David Nabarro, special envoy to the World Health Organization (WHO), writes of the "'awful political tradeoffs' between protecting lives and keeping economies functioning – the kind of tradeoffs that could become more frequent as climate-linked disasters from wildfires to drought worsen."[145] In this context "climate change, like coronavirus, [is] a 'force multiplier' for economic and social injustices."[146] For example, the strongest cyclone on record in the Bay of Bengal snarled efforts to deal with the Covid-19 pandemic in the world's largest refugee camp at Cox's Bazar, massively complicating efforts in one of the poorest parts of the world.[147]

---

140. Andil Gosine, *Roots of Flight: Environmental Refugees in Latin America—A Response to Analysis by Homer Dixon*, 15 REFUGEE 27, 28 (1996).

141. Alexandra Deprez, *Climate Migration in Latin America: A Future 'Flood of Refugees' to the North?*, COUNCIL ON HEMISPHERIC AFF. (Feb. 22, 2010), https://www.coha.org/climate-migration-in-latin-america-part-1/; Lustgarten *The Great Climate Migration*, *supra* note 22.

142. *See US: Covid-19 Policies Risk Asylum Seekers' Lives: Rejections at Border Increase Health Concerns*, HUM. RTS. WATCH (Apr. 2, 2020), https://www.hrw.org/news/2020/04/02/us-covid-19-policies-risk-asylum-seekers-lives; Mary Beth Sheridan*, Mexico's Coronavirus Deaths are Plummeting. The 'Biden Wall' Could Be a Factor*, WASH. POST (May 19, 2021), https://www.washingtonpost.com/world/2021/05/19/coronavirus-mexico/ (detailing how cross border movement helped spread the virus in Mexico to the point that by May 2021 perhaps 50% of the population had been infected and acquired some level of immunity).

143. Magori & Drake, *supra* note 57, at 4.

144. Sheridan, *supra* note 142

145. Laurie Goering, *Health Experts Call Virus Pandemic a Window into Future Climate Threats*, REUTERS (Mar. 31, 2020), https://www.reuters.com/article/us-health-coronavirus-climate-change-trf/health-experts-call-virus-pandemic-a-window-into-future-climate-threats-idUSKBN21I3IC.

146. *Id.*

147. Mayyu Ali, *The World's Largest Refugee Settlement is in the Crosshairs of a Cyclone and a Pandemic*, WASH. POST (May 21, 2020), https://www.washingtonpost.com/opinions/2020/05/21/worlds-largest-refugee-settlement-is-crosshairs-cyclone-pandemic/.

V. CONCEPTUAL CHALLENGES

Alexander Betts proposes creating a new category of survival migrants to fill the gaps left by, and in addition to, the Refugee Convention.[148] This would include people who flee conditions that directly affect survival regardless of cause. He argues that causation is not a helpful distinction when one is fleeing for survival.[149] Persons fleeing natural disasters, such as earthquakes or climate-driven rising seas, are all suffering humanitarian disaster and deserve assistance.

Disentangling the effects of environmental disaster from poor or corrupt governance and economic mismanagement presents a challenge. To what extent was the refugee crisis arising out of Syria the effect of the recent droughts and heat wave? Was climate change a driving factor? Inept and corrupt governance also played a role. Just what part did each factor play? Moreover, what degree of proof is needed to establish causal factors? It remains too easy for receiving nations to claim, regardless of the facts, that people fleeing complex, multi-factor disasters are not fleeing for their survival, but are rather economic migrants—people simply seeking a better life.[150] Moreover, a nation's policies can shift, transforming virtuous asylum seekers into undeserving economic migrants.[151] Recent scholarship has focused on the way in which nation-states use borders to separate the deserving "us" from the undeserving "other" on ideological, racial, ethnic, homophobic, and misogynistic urgings.[152] Any proposal for change is constrained by the intuition that only people fleeing persecution merit protection. It is a short, nativist leap to a virtually irrebuttable presumption against the worthiness of all other migrants. As Marfleet argues:

> Western states make the assumption that most applicants for refugee status are inauthentic – that they do not move under compulsion, seeking security, but are opportunists whose aim is to

148. *See, e.g.*, BETTS, *supra* note 19, at 22–23.

149. *Id.* at 19–22.

150. PHILLIP MARFLEET, REFUGEES IN A GLOBAL ERA 233 (2006).

151. As Marfleet points out,

> When US policy towards Cuba was modified attitudes changed radically; the 'refugees' of an earlier period were declared unwelcome and characterised by the federal government as illegitimate – people bent solely upon economic advance whom the United States could not be expected to accommodate, and who must be rejected because of their irregular status.

Id. at 167.

152. *See, e.g.*, CATHERINE DAUVERGNE, THE NEW POLITICS OF IMMIGRATION AND THE END OF SETTLER SOCIETIES 8 (2016); *see generally* HARSHA WALIA, BORDER & RULE: GLOBAL MIGRATION AND THE RISE OF RACIST NATIONALISM (2021); MARFLEET, *supra* note 150, at 232–33.

> exploit potential host societies. Increasingly they also view refugees as 'illegals' – people who evade migration controls and who, placing themselves outside the law, abandon their rights to asylum.[153]

To the extent that nation-states care to deal with survival migrants, one must first be able to say who they are and provide reasonably bounded criteria to identify those who qualify. No receiving nation will allow unlimited sanctuary. An island state overrun with sea level rise may seem the obvious case where all fleeing environmental disaster would unquestionably be survival migrants under Betts's proposal. However, most islands will become functionally uninhabitable from the loss of access to freshwater well before submerging beneath the sea.[154] The United Nations Human Rights Committee has addressed this issue,[155] suggesting that "Pacific Island states do not need to be under water before triggering human rights obligations to protect the right to life."[156] Notwithstanding the views of the UNHRC, the point at which loss of potable water makes a place uninhabitable is far from obvious, so even with low-lying island states it is not evident when or how people fleeing environmental destruction will qualify for asylum or protection.[157]

If Kiribati or the Maldives are easier cases, what about Bangladesh, where at least for the foreseeable future there will be some remnant of the country to which internally displaced people may flee? Must the entire nation

---

153. MARFLEET, *supra* note 150, at 164.

154. Geologist Chip Fletcher points out:

> People worry that these islands will drown with sea level rise, but their freshwater capacity will be challenged — and is already being challenged — much sooner than the islands would be drowned. Freshwater is the fundamental element that allows life on an island. It is already being affected in many places. It is possible in atoll communities that rely on thin freshwater aquifers — if it breaks out onto the land surface, that water flows out into the ocean and you lose it. The freshwater lens becomes thinner and thinner.

Quoted in Schiffman, *supra* note 83.

155. The United Nations Human Rights Committee:

> is of the view that without robust national and international efforts, the effects of climate change in receiving states may expose individuals to a violation of their rights under articles 6 or 7 of the Covenant, thereby triggering the *non-refoulement* obligations of sending states. Furthermore, given that the risk of an entire country becoming submerged under water is such an extreme risk, the conditions of life in such a country may become incompatible with the right to life with dignity before the risk is realized.

U.N. Human Rights Committee, *supra* note 20, at ¶ 9.11.

156. *UN Landmark Case for People Displaced by Climate Change*, AMNESTY INT'L (Jan. 20, 2020), https://www.amnesty.org/en/latest/news/2020/01/un-landmark-case-for-people-displaced-by-climate-change/ (quoting Kate Schuetze, Pacific researcher).

157. *See infra* Part VI.

submerge before its people are worthy of assistance? In other cases, such as those fleeing drought-stricken areas, this will prove an even more difficult assessment.[158]

While heat, drought, floods, salt intrusion, hurricanes, and tornadoes may be the immediate challenge, over a longer time frame, sea level rise and acidification[159] will also prove intractable problems. The extent of sea level rise, estimated currently at 3.2 ± 0.4 millimeters a year and accelerating,[160] is a fat-tailed phenomenon with an uncertain distribution. Under a low-carbon-emissions scenario, average sea levels could rise as little as .28 to .55 meters, while under a high-emissions scenario, the world could see a catastrophic rise of two meters by 2100 and five meters by 2150.[161] Whichever projection occurs, the rising sea will almost certainly inundate the low-lying coastal areas of the world. This includes all of the vast river deltas of south and eastern Asia. Perhaps the most problematic of these is Bangladesh, a country of about 160 million people in a dangerous, nuclear-armed neighborhood.[162] Hundreds of millions of people face displacement in this area alone.[163] Predominantly Muslim Bangladesh is surrounded by the Indian Ocean, India, and Myanmar. Predominantly Hindu India, which has had its own religious strife in recent years, and which is nuclear armed, is unlikely to welcome millions of Muslim Bangladeshis. As Harsha Walia points out, "[t]oday, the India-Bangladesh border has the shameful honor of being the border with the

---

158. *See, e.g.*, GOODELL, *supra* note 46, at 201, 209; Alex Duval Smith, *'The Best Solution? Move the Mauritanian Capital': Water on the Rise in Nouakchott*, GUARDIAN (July 25, 2016), https://www.theguardian.com/global-development/2016/jul/25/the-best-solution-move-the-mauritanian-capital-water-on-the-rise-in-nouakchott; *see* Nyani Quarmyne, *The Ghanaian Villages Destroyed by Climate Change – in Pictures*, GUARDIAN (Oct. 7, 2016), https://www.theguardian.com/global-development-professionals-network/gallery/2016/oct/07/ghana-villages-destroyed-climate-change-in-pictures.

159. *See Ocean Acidification*, NOAA (Apr. 1, 2020), https://www.noaa.gov/education/resource-collections/ocean-coasts/ocean-acidification.

160. *How Much Is Sea Level Rising?*, SKEPTICAL SCI., https://skepticalscience.com/sea-level-rise-intermediate.htm (last visited Oct. 16, 2022). As the IPCC Summary for Policymakers in Climate Change 2021 explains:

Global mean sea level increased by 0.20 [0.15 to 0.25] m between 1901 and 2018. The average rate of sea level rise was 1.3 [0.6 to 2.1] mm yr–1 between 1901 and 1971, increasing to 1.9 [0.8 to 2.9] mm yr–1. between 1971 and 2006, and further increasing to 3.7 [3.2 to 4.2] mm yr–1 between 2006 and 2018 (*high confidence*). Human influence was *very likely* the main driver of these increases since at least 1971.

IPCC, *supra* note 4, § A.1.7.

161. IPCC, *supra* note 4, § B.5.3 ("Global mean sea level rise above the *likely* range – approaching 2 m by 2100 and 5 m by 2150 under a very high GHG emissions scenario (SSP5-8.5) (*low confidence*) – cannot be ruled out due to deep uncertainty in ice-sheet processes").

162. Countries having successfully detonated a nuclear weapon in Asia include, India, Pakistan, China, Russia, and North Korea.

163. WALIA, *supra* note 152, at ch. 4 (stating that Bangladesh "is projected to be one of the world's biggest climate displacements. Weather disasters and riverbank erosion have already displaced 6.5 million people and destroyed hundreds of thousands of hectares of crops.").

highest number of deaths at the hands of an enforcement agency . . . . Between 2000 and 2018, as many as 1,144 Bangladeshis were killed, 1,078 injured, 1,367 abducted, and fifteen raped by the . . . [Indian Border Security Force]."[164]

Sea level rise will not be uniform—changes in local gravity due to loss of mass in Greenland and Antarctica, disruption of ocean currents, including the potential slowing of the Atlantic Meridional Overturning Circulation,[165] and variations in thermal expansion and local ground subsidence will cause large variations in sea level rise. Coastal storms and saltwater intrusion into aquifers will affect some areas more than others. Prediction about future migration patterns caused by sea level rise will be exceptionally difficult.

This complexity is exacerbated by the fact that internal migration will make assisting foreign, non-citizen survival refugees increasingly difficult. Countries will encounter economic and logistical difficulties in assisting their own displaced citizens, increasing political and social resistance to accepting international refugees.

The foregoing examples provide compelling evidence of an interrelationship between pandemics, climate change, and human displacements interacting in complex, poorly understood, dangerous, reinforcing feedback loops.[166]

VI. TOWARD A SOLUTION TO THE HUMAN RIGHTS DILEMMA

If we are to avoid violence, civil strife, and war, then global, regional, and national institutions must find peaceful ways of managing human migrations, regardless of cause. Thus, the urgency of the question: how ought international human rights law respond to the inevitable displacement of

---

164. *Id.* at ch. 10.

165. Frank White, *"All Hell Will Break Loose" — Bleak Vision of Planet's Future Predicted by Climate Scientist James Hansen*, CITIZEN ACTION MONITOR (Mar. 24, 2016), https://citizenactionmonitor.wordpress.com/2016/03/24/all-hell-will-break-loose-bleak-vision-of-planets-future-predicted-by-climate-scientist-james-hansen/. The IPCC states:

> The Atlantic Meridional Overturning Circulation is *very likely* to weaken over the 21st century for all emission scenarios. While there is *high confidence* in the 21st century decline, there is only *low confidence* in the magnitude of the trend. There is *medium confidence* that there will not be an abrupt collapse before 2100. If such a collapse were to occur, it would *very likely* cause abrupt shifts in regional weather patterns and water cycle, such as a southward shift in the tropical rain belt, weakening of the African and Asian monsoons and strengthening of Southern Hemisphere monsoons, and drying in Europe.

IPCC, *supra* note 4, § C.3.4.

166. *See* Ben Abbott, *Introduction to the Permafrost Climate Feedback*, YOUTUBE (Feb. 6, 2020), https://www.youtube.com/watch?v=G6y9e5CVOfE (explaining one of these poorly understood feedback loops—that of permafrost).

people? Further, how can international law influence national laws and policies in dealing with this unfolding crisis?

If nations continue to close borders, turning back desperate people, violence seems inevitable. Indeed, arms manufacturers such as Halliburton and Raytheon are planning for just such a future.[167] Greater and more intrusive methods of state surveillance, crowd control, and asymmetrical warfare suggest that one response to these problems revolves around greater militarization and greater authoritarianism.[168] The opposite response, which is by no means probable but surely preferable, would be to strengthen international human rights law and international criminal law, as well as international institutions, to reduce mass human suffering triggered by climate change. Political and legal activism will be necessary to move forward.

New Zealand lawyer and activist Michael J. Kidd's advocacy before the Human Rights Committee in the *Teitiota* case shows activism can fall short of its immediate objective and yet have a positive impact by moving soft law (and potentially hard, blackletter law) forward.[169] Ioane Teitiota traveled with his family from Kiribati to New Zealand, fleeing life-threatening hardship and looming disaster.[170] In evidence found credible (and undisputed) by authorities in New Zealand,[171]

> Sea level rise in Kiribati has resulted in: the scarcity of habitable space causing life endangering violent land disputes; severe environmental degradation resulting in contamination of water supply, and the destruction of food crops; yet the author's family relied largely on subsistence agriculture and fishing. Since removal to Kiribati, the author and his family have been unable to grow crops. Furthermore, the land in Tarawa (the home village of the author and his family) has reportedly gotten significantly flooded; with land being submerged up-to knee deep in king tides. Moreover, beyond stories of children getting diarrhoea and dying because of the poor quality of drinking water, the author and his family, on return to Kiribati, have had bad health issues – with one

167. Jeremy Schulman, *How 19 Big-Name Corporations Plan to Make Money Off the Climate Cri*sis, MOTHER JONES (Dec. 22, 2015), https://www.motherjones.com/environment/2015/12/climate-change-business-opportunities/.

168. *See* MILLER, *supra* note 52 (giving a detailed account of the problem of militarizing borders).

169. U.N. Human Rights Committee, *supra* note 20, ¶ 9.11.

170. U.N. Human Rights Committee, *supra* note 20, ¶ 2.5; *see also id.* annex 1, ¶ 1 (presenting the dissenting individual opinion of Committee Member Vasilka Sancin on the failure of the State party to present evidence on the access of drinking water issue).

171. U.N. Human Rights Committee, *supra* note 20, annex 2, ¶ 2.

> of his children suffering from a serious case of blood poisoning, causing boils all over the body.[172]

Moreover, the evidence demonstrated that Kiribati "is losing land mass and can be expected to survive as a country for 10 to 15 more years."[173] Their lawyer innovatively framed their legal claim as involving "climate refugees."[174] This broadened the case beyond the narrow confines of the Refugee Convention to alternatively include New Zealand's obligations "on the basis of complimentary protection under various other human rights treaties,"[175] including the International Covenant on Civil and Political Rights (ICCPR).

The Human Rights Committee (HRC), in its nonbinding legal opinion, advanced legal considerations by a novel holding that "[t]he obligation not to extradite, deport or otherwise transfer . . . may be broader than the scope of the principle of *non-refoulement* under international refugee law, since it may also require the protection of aliens not entitled to refugee status."[176] This placed the case squarely within the broader ambit of the ICCPR, escaped the narrow persecutory limitations of the Refugee Convention, and provided a potential avenue for relief for environmentally displaced persons.

However, what the HRC gave by broadening rights under international law it took away from the Teitiota family by setting a remarkably high imminence threshold, stating, "that the risk must be personal, that it cannot derive merely from the general conditions in the receiving State, except in the most extreme cases, and that there is a high threshold for providing substantial grounds to establish that a real risk of irreparable harm exists."[177] Not surprisingly, Teitiota and family failed to meet this test, and New Zealand's decision to return them to Kiribati was upheld. It is likely that the HRC, whose opinions are nonbinding and applicable only to those nations ratifying the optional protocol, felt it had to tread lightly. Nonetheless, this is a disappointing result.

Others have pointed out that "[i]f Teitiota's circumstances do not qualify for asylum under the ICCPR, apart from death, it is hard to fathom what

---

172. *Id.* annex 2, ¶ 2; *see also id*. annex 1, ¶ 1.

173. *Id.* ¶ 7.2.

174. Simon Behrman & Avidan Kent, *The Teitiota Case and the Limitations of the Human Rights Framework*, QUESTIONS OF INT'L L.,. 25, 26 (Nov. 30, 2020) http://www.qil-qdi.org/the-teitiota-case-and-the-limitations-of-the-human-rights-framework/.

175. *Id.* at 26–27.

176. U.N. Human Rights Committee, *supra* note 20, ¶ 9.3.

177. *Id.*

circumstances will."[178] Dissenting committee member Muhumuza surgically dissected the flaw in the majority's reasoning, observing, "New Zealand's action is more like forcing a drowning person back into a sinking vessel, with the 'justification' that after all there are other voyagers on board."[179] One can hardly improve on this trenchant response; nonetheless, two further comments are perhaps pertinent. First, by viewing each element of the case individually and (for the most part) in isolation, the majority's analysis tracks what defendants often do when trying to duck responsibility in factually complex cases where multiple causality is in issue. The HRC scrutinized each element of Teitiota's claim in isolation as if unconnected to the broader factual pattern—finding insufficient cause in any single factual predicate to find imminent danger to life. The route to finding that Teitiota had not made out a sufficient case was a short one. Viewing each factual assertion as insufficient on its own allows (but does not compel) the conclusion that the threat to their lives was not sufficiently imminent to justify relief under the ICCPR. Had the HRC given greater attention to the totality of Teitiota's circumstances from rising seas, lack of potable water, rising crime, loss of crops and land, and disease, the threats to life would have loomed far larger and pressingly imminent. The threats to Teitiota's family interlocked in ways that the majority seemingly missed. Second, while this case sets a very high bar to obtaining relief, one should not despair. As with many advances in the law, this shift may be incomplete. Legal concepts undergo evolution, refinement, and revision such that human rights advances often need to expand as they develop.[180] Michael Kidd's remarkable advocacy points to an approach that, if evidentiary constraints are relaxed, may yet prove useful.

---

178. Malcolm Wu, *The Historic Case of Teitiota: Climate-Induced Asylum and Its Future*, OPINIOJURIS (Dec. 10, 2020), http://opiniojuris.org/2020/10/12/the-historic-case-of-teitiota-climate-induced-asylum-and-its-future/; *see also* Behrman & Kent, *supra* note 174, at 39.

> [T]he reality for Teitiota and many others in a similar situation to him and his family, is that they must spend many more years living in unsafe and deteriorating conditions. The various iterations of this case in New Zealand and at the HRC can be seen as a series of promises of protection in the future – maybe the effects of climate change *could* give rise to a refugee claim, perhaps at some point in the future conditions in Kiribati and elsewhere will get sufficiently worse that non-refoulement will be engaged. At some point, maybe, these promises will be redeemed, but in the meantime, large and increasing numbers of people like the Teitiota family are legally trapped with the already dire, and worsening, consequences of climate change.

179. U.N. Human Rights Committee, *supra* note 20, annex 2, ¶ 6 (providing the dissenting opinion of Duncan Laki Muhumuza).

180. *See, e.g*, WHITT & CLARKE, *supra* note 10, at 6; Alan W. Clarke, *The Ku Klux Klan Act and the Civil Rights Revolution*: *How Civil Rights Litigation Came to Regulate Police and Correctional Officer Misconduct*, 7 SCHOLAR 151, 153–56 (2005); Alan W. Clarke, *Habeas Corpus: The Historical Debate*, 14 N.Y. L. SCH. J. HUM. RTS. 375, 377–79 (1998).

International law provides five discrete avenues for dealing with these issues.[181] All are problematic, and some are unlikely in the current political climate. They are:

> 1. Amending the present Refugee Convention or the 1967 Protocol to cover environmental or survival migrants.
>
> 2. Developing a new treaty (or protocol) to address the issue.
>
> 3. Illuminating existing human rights law to develop the contours of soft law to gradually address human migration with a view towards developing international customary law and perhaps positively influencing international treaty law.
>
> 4. Working regionally or bilaterally to create networks of protection piecemeal.
>
> 5. Developing and systematizing advocacy before international bodies such as the United Nations Human Rights Committee, regional human rights courts such as the European Court of Human Rights, and national courts to encourage judicial law development.

The first approach, revolving around amending the existing 1951 Refugee Convention to address survival refugees, while conceptually simple, seems quixotic under the present globally divided world. Amending an existing treaty "turns on the contentious and risky process of securing agreement among states which remain . . . protective of their own self-interests and sovereignty."[182] There are 146 state parties to the Convention, and the idea that one could get all of them to agree to amending the treaty seems exceedingly unlikely.

The Refugee Convention was expanded by the 1967 Protocol, and expanding it further by another Protocol is a possibility, as is the possibility of negotiating a new treaty explicitly dealing with environmental migration. Either of these possibilities circumvents the problem of getting all 146 nations to agree on modifying the present treaty. However, these start-all-over approaches would be at present unlikely to attract more than a handful of nations. The world's wealthy states appear bent upon making

---

181. See WHITT & CLARKE, *supra* note 10, ch. 7, especially pages 164–67, for a detailed account of how this might work in the genocide context.

182. *Id.* at 165.

asylum increasingly difficult,[183] focusing on containing migrants within their home countries or regions,[184] and keeping migrants far away from Europe or North America. There appears to be little appetite at present for amending international law by any treaty mechanism to make it easier for people fleeing for their survival to immigrate to those wealthy countries. Moreover, as we have seen, there are definitional problems with crafting a legally precise definition of who might qualify as an environmental refugee. As Elizabeth Ferris argues:

> On the conceptual level, it has so far proven impossible to determine the extent to which climate change is a driver of migration – and hence to prove the degree of compulsion. The challenge for these proposals [to negotiate a new global treaty] is how to prove – or at least make a convincing case – that people are forced to leave their countries because of the effects of climate change and not, say, because of poverty.[185]

While these definitional problems are not insurmountable, they must be addressed. Until we have a legally tight understanding of when and how someone might qualify as an environmental refugee it is unlikely that nation-states will agree on any sort of treaty or protocol addressing the issue.

There is a glimmer of hope, however. The Stop Ecocide Foundation[186] has proposed "practical and effective definition of the crime of 'ecocide'"[187] and is inviting states to consider it for adoption. If adopted, prosecution of the crime of ecocide would be within the jurisdiction of the International Criminal Court. While this proposal does not directly address human migration, given the resistance thus far in addressing severe environmental destruction as a matter of international law, this proposal is a rare exception. There are indications that we may be near a tipping point on environmental issues.[188] The possibility that we may be approaching a tipping point on

183. DAUVERGNE, *supra* note 152, at 43.

184. MARFLEET, *supra* note 150, at 200–04.

185. Elizabeth Ferris, *Governance and Climate Change-induced Imobility*, *in* CLIMATE CHANGE & HUM. RTS.: LAW & POL'Y PERSPS 11, 16 (Dimitra Manou, et al. eds., 1st ed. 2018).

186. *See generally Independent Expert Panel for the Legal Definition of Ecocide: Commentary and Core Text*, STOP ECOCIDE FOUND. 5 (June 2021), https://static1.squarespace.com/static/5ca2608ab914493c64ef1f6d/t/60d7479cf8e7e5461534dd07/1624721314430/SE+Foundation+Commentary+and+core+text+revised+%281%29.pdf.

187. Ecocide is defined as "unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts." *Id.*

188. A Netherlands court has ordered Royal Dutch Shell to "ditch its strategy to cut carbon intensity" and "nearly halve the emissions for which it is responsible by 2030." *Opinion: Change is Coming, Whether the Oil Industry Likes it or Not*, WASH. POST (May 29, 2021),

climate change[189] suggests that the approach revolving around evolutionary soft law may also be reaching a point where it could prove effective. Litigation against the big fossil fuel companies is becoming increasingly viable,[190] and this may in turn inform progress changing legal norms with respect to climate change and climate migration. This suggests the urgency with which we must approach and attempt to resolve the definitional conundrums revolving around the status of those who flee their homeland in part because of environmental stressors. Moreover, the disastrous summer of 2021, with massive floods, unprecedented heatwaves, and fires may be "a moment of truth for climate action."[191]

---

https://www.washingtonpost.com/opinions/a-message-to-oil-companies-change-or-have-change-forced-upon-you/2021/05/28/22eb5340-bf16-11eb-9c90-731aff7d9a0d_story.html. At the same time, Exxon Mobil fought a bitter and losing battle to keep "at least two green-minded directors" off of the company's board. *Id.* Chevron also faced a backlash from shareholders.

> Chevron investors also flexed their muscle Wednesday, casting 61 percent of shares in favor of a proposal asking the oil major to cut its total greenhouse gas emissions, including customers' emissions, a category known as Scope 3, in addition to its own operations and supply chains, according to a preliminary count announced by Chevron at its annual general meeting.

Steven Mufson, *A Bad Day for Big Oil*, WASH. POST (May 26, 2021), https://www.washingtonpost.com/climate-environment/2021/05/26/exxonmobil-rebel-shareholders-win-board-seats/. A Yale Climate Connections reports that,

> Americans who think global warming is happening outnumber those who think it is not happening by a ratio of more than 4 to 1 (70% versus 15%). Those who are 'very' or 'extremely' sure global warming is happening outnumber those who are 'very' or 'extremely' sure it is not by more than 5 to 1 (50% versus 9%).

ANTHONY LEISEROWITZ ET AL., CLIMATE CHANGE IN THE AMERICAN MIND 3 (Mar. 2021), https://climatecommunication.yale.edu/wp-content/uploads/2021/06/climate-change-american-mind-march-2021.pdf.

189. There are contrary views holding "that the climate change movement appears to be failing despite its ability to mobilize an impressive array of social movement organizations, coalitions, and protest actions." Beth Schaefer Caniglia et al., *Civil Society, Social Movements, and Climate Change*, *in* CLIMATE CHANGE AND SOCIETY: SOCIOLOGICAL PERSPECTIVES 235, 239 (Riley Dunlap & Robert J. Brulle eds., 2015).

190. Chris McGreal, *Big Oil and Gas Kept a Dirty Secret for Decades. Now They May Pay the Price*, GUARDIAN (June 30, 2021), https://www.theguardian.com/environment/2021/jun/30/climate-crimes-oil-and-gas-environment?utm_term=699d49b3df3a024e4eda5f03a3404bb0&utm_campaign=GuardianTodayUS&utm_source=esp&utm_medium=Email&CMP=GTUS_email; *see also* Mary Annette Pember, *'Rights of Nature' Lawsuits Hit a Sweet Spot,* INDIAN CNTY TODAY (Aug. 15, 2021), https://indiancountrytoday.com/news/rights-of-nature-lawsuits-hit-a-sweet-spot?fbclid=IwAR01AUEzFveYCESMMadmTMGZebZhDS-ni4Jqru171Z6uvHabzF-DhEcw6K4 (detailing White Earth Nation's strategy of suing in tribal court to establish a "rights of nature" principle in law for Manoomin (wild rice) in order to set precedent for use in federal court litigation).

191. Sarah Kaplan & Brady Dennis, *Amid Summer of Fire and Floods, a Moment of Truth for Climate Action*, WASH. POST (July 24, 2021), https://www.washingtonpost.com/climate-environment/2021/07/24/amid-summer-fire-floods-moment-truth-climate-action/.

The third approach turns on attempting to influence the slow evolutionary direction of soft law, for example, through U.N. General Assembly resolutions and international NGOs' scholarly writings.[192] Soft law approaches have the advantage of not having to go through politically charged and difficult treaty negotiations. Where successful, soft law approaches can change international customary law and, given enough time and international spread, these can ripen into binding *jus cogens* principles (peremptory norms). The problem with soft law approaches is that they usually take a very long time and their progress in the interim is uncertain. Michael Scharf argues persuasively that during periods "of great change in world history" there can be "transformative development[s] in which new rules and doctrines of customary international law emerge with unusual rapidity and acceptance."[193] Calling this a Grotian moment, he argues that "[t]he concept reflects the reality that in periods of fundamental change . . . rapidly developing customary international law may be necessary to keep up with the pace of developments."[194]

It remains to be seen whether climate change and the pressures it induces will result in a Grotian moment for international customary law such that the problem of irregular or survival migration may be effectively and humanely dealt with. A soft law approach usually focuses on clarifying existing norms. Some scholars, however, talk about normative interpretation, which presumably would move in the direction of influencing existing norms. So, while this purports to focus on merely clarifying existing norms, in practice this approach would presumably push in the direction of liberalizing those norms. A move in the opposite direction, while unfortunate, would be possible. While it may be that the "arc of the moral universe . . . bends towards justice,"[195] such is not inevitable and, in any case, it may not bend quickly enough to remedy this problem. Nonetheless, a soft law approach to dealing with human migration holds promise.

There have been efforts in this direction. The United Nations provides guidance for nations in protecting and assisting internally displaced persons in the form of Guiding Principles on Internal Displacement.[196] They do not constitute hard treaty law and thus are not binding but are "compiled from

---

192. *See* Alexander Betts, *Soft Law and the Protection of Vulnerable Migrants*, 24 GEO. IMMIGR. L.J. 533, 540–46; *see also* Michèle Oliver, *The Relevance of 'Soft Law' as a Source of International Human Rights*, 35 COMPAR. & INT'L L.J. S. AFR. 289, 296–98 (2002).

193. MICHAEL P. SCHARF, CUSTOMARY INTERNATIONAL LAW IN TIMES OF FUNDAMENTAL CHANGE: RECOGNIZING GROTIAN MOMENTS 5 (2013).

194. *Id.* at 8.

195. Martin Luther King, Jr., *Our God is Marching On*, STANFORD UNIV.: THE MARTIN LUTHER KING, JR. RSCH. & EDUC. INST. (Mar. 25, 1965),https://kinginstitute.stanford.edu/our-god-marching.

196. Comm'n on Hum. Rts., *supra* note 21.

existing international human rights and humanitarian law and, by analogy, refugee law."[197] Similarly, the Peninsula Principles on Climate Displacement Within States (2013) provides guidance on best practices for climate-induced migration within states.[198] These are useful efforts and should be extended to cover people who have been forced to cross borders and become, in every practical, nonlegal sense of the term, refugees.

However, while one may assert that existing norms suffice, that case is weak. Presumably, such an effort would take international norms at a high level of generalization and then "find" existing rights for irregular or environmental refugees. We should be honest in what we are about here—eliminating gaps in existing treaty law by normative interpretation of both treaty and customary law to better fit the case of irregular refugees. Absent a Grotian moment, this is not something that will happen quickly or efficiently. Calls to treat climate change as a transformative moment do seem to be increasing in number and volume.[199]

The fourth possibility would be to attempt to negotiate regional or bilateral treaties dealing with the problem of climate change migration on a piece-by-piece, regional approach.[200] One clear advantage of a regional approach is that it can have the effect of also spurring soft law development and can hasten changes in international customary law and even the ripening of such law into *jus cogens* principles. Examples of regional approaches, to date, remain limited.

The 1969 Organization of African Unity (OAU) Convention Governing Specific Aspects of Refugee Problems in Africa[201] and the 1984 Cartagena Declaration on Refugees[202] both define refugees more broadly than the

---

197. Ferris, *supra* note 185, at 17.

198. *Id.* at 18–19; *see also* KHALID HASSINE, HANDLING CLIMATE DISPLACEMENT, ch. 4 (2019).

199. *See, e.g.*, Greta Thunberg, *'Our House is on Fire': Greta Thunberg, 16, Urges Leaders to Act on Climate*, GUARDIAN (Jan. 25, 2019), https://www.theguardian.com/environment/2019/jan/25/our-house-is-on-fire-greta-thunberg16-urges-leaders-to-act-on-climate.

> Our house is on fire. . . . According to the IPCC, we are less than 12 years away from not being able to undo our mistakes. . . . Adults keep saying: "We owe it to the young people to give them hope." But I don't want your hope. I don't want you to be hopeful. I want you to panic. I want you to feel the fear I feel every day. And then I want you to act. I want you to act as you would in a crisis. I want you to act as if our house is on fire. Because it is.

200. Elizabeth Ferris, *Climate Change, Migration, Law, and Global Governance*, N. C. J. INT'T L. 425, 435–36 (2019).

201. *OAU Convention Governing the Specific Aspects of Refugee Problems in Africa*, art. 1, § 2 (Sept. 10, 1969), https://www.unhcr.org/about-us/background/45dc1a682/oau-convention-governing-specific-aspects-refugee-problems-africa-adopted.html.

202. *Cartagena Declaration on Refugees, Colloquium on the International Protection of Refugees in Central America, Mexico and Panama*, art. 3, § 3 (Nov. 22, 1984), https://www.oas.org/dil/1984_cartagena_declaration_on_refugees.pdf.

1951 Refugee Convention. Among other things, they include people who flee because of situations that seriously disturb public order.[203] Neither has been applied to people fleeing their home country as a result of climate change, but it is easy to see how such a case might be made.[204] These regional treaties provide some basis for expanding the Refugee Convention, but, tellingly, no such treaties affect "the regions most likely to experience massive displacement because of . . . climate change – Asia and the Pacific."[205]

The OAU has addressed the problem of internally displaced persons (IDPs) in its Convention on the Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention). The Kampala Convention is a detailed agreement that is broadly written and arguably protects and assists people who have been displaced as a result of natural or human-made disasters, which could include climate change.[206] Among other things:

> The Kampala Convention builds upon the 1998 UN Guiding Principles on Internal Displacement, the internationally recognized framework on internal displacement, which restates the principles of international human rights, humanitarian and refugee law applicable to IDPs. The Kampala Convention gives these non-binding principles the force of law in Africa.[207]

Whether and how this treaty will apply to those fleeing changing climatic conditions remains to be seen. Given that this treaty has the force of law in Africa, it will be up to the courts to apply it. In addition to a construction covering migration caused in part by climate change, this treaty would need to be replicated broadly in order for it to begin to effect change in international customary law respecting internally displaced peoples. As a result, regional treaties remain at present too limited to have far-reaching

---

203. Article I, Section 2 of the OAS Convention states in pertinent part that the term "refugee" applies to persons fleeing their home country as a result of "events seriously disturbing public order." *OAU*, *supra* note 201, at art. 1, § 2. Similarly, the Cartagena Declaration Article 3, Section 3, encompasses people who have fled "circumstances which have seriously disturbed public order." *Cartagena Declaration*, *supra* note 202, at art. 3, § 3.

204. *See* Ferris, *supra* note 185, at 16–17, for an excellent discussion of international and regional treaties affecting climate-induced mobility.

205. *Id.* at 17.

206. *African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention)*, art. 5 (Oct. 23, 2009), https://www.unhcr.org/about-us/background/4ae9bede9/african-union-convention-protection-assistance-internally-displaced-persons.html.

207. *2009 Kampala Convention on IDPs Fact Sheet*, U.N. HIGH COMM'R FOR REFUGEES (May 2019), https://www.unhcr.org/5cd569877.pdf.

global effect, but they have great potential both to protect vulnerable people and to spur law development in this area.

The obvious attraction for using regional treaties to address environmental migration is that one can imagine that nations in a given region may agree piecemeal to bind themselves to such. Moreover, it could be coupled with the soft law approach and could be seen to slowly shift norms worldwide. But a spotty, regional approach leaves many of the worst problems unaddressed, and, like the soft law approach, may be too slow and incremental to properly address the rapidity with which climate change threatens the world. Nonetheless, such efforts should be applauded and extended wherever politically possible as they have greater likelihood of achieving success than any of the other strategies in the short-to-medium term.

Lastly, with respect to advocacy before international and domestic bodies, we have already seen how Michael Kidd's advocacy moved legal avenues for climate refugees forward. Many other examples exist.[208]

No easy or obviously good approaches appear likely to succeed. Given the present political and public climate of denial, any proposal to address changes in international human rights law must also address ways in which to change attitudes such that policy changes can gain political and social acceptance.

Because neither soft law nor negotiating treaties or protocols provide an adequate avenue for dealing with these pressing issues, some commentators suggest focusing on changing the various nations' domestic law to deal with these issues.[209] Efforts to change the domestic law of nations, particularly the laws of the wealthy, industrialized nations, are clearly important. There are efforts in all of the wealthy nations to promulgate climate change legislation, and scholars are actively trying to move the courts into a more progressive stance regarding human migration.[210] But changing the various laws of the world's 195 nations can never take the place of international and regional action.

Given the scope of the problem, and given the difficulties associated with changing the law in any arena—global, regional, domestic, blackletter treaty law, or soft law—it is apparent that we must pursue an "all of the above" strategy. Rather than despair, we must advocate for change in all

---

208. *Cf.* MORITZ BAUMGÄRTEL, DEMANDING RIGHTS: EUROPE'S SUPRANATIONAL COURTS AND THE DILEMMA OF MIGRANT VULNERABILITY 11 (2019).

209. *See, e.g.*, Ezekiel Simperingham, *State Responsibility to Prevent Climate Displacement*, *in* CLIMATE CHANGE, MIGRATION AND HUMAN RIGHTS: LAW AND POLICY PERSPECTIVES 86, 93 (Dimitra Manou et al. eds., 2017).

210. See BAUMGÄRTEL, *supra* note 208, at 101, for a good example of recent scholarship plainly attempting to influence courts to a more progressive stance towards human migration.

areas, with a view that movement in one area may well spur additional movement in others. Finally, we need to advocate for greater responsibility sharing such that the wealthy nations play a greater role in assisting front line nation-states in caring for forcibly displaced people, including people fleeing environmental disaster.[211]

211. The subject of responsibility-sharing is a large one that is beyond the scope of this article. See Katerina Linos & Elena Cachko, *Refugee Responsibility Sharing or Responsibility Dumping*, 110 CAL. L. REV. 897 (2022) *and* E. Tendayi Achiume, *Empire, Borders, and Refugee Responsibility Sharing*, 110 CAL. L. REV. 1011, 1013, nn.6–7 (2022), for further discussion on the topic.