Public Health and Human Health Implications of Climate Mobility

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PUBLIC AND HUMAN HEALTH IMPLICATIONS OF CLIMATE MOBILITY

JUNE 2024

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EXECUTIVE SUMMARY

Climate change poses significant challenges at the intersection of human and public health, mobility, and international law. Adverse climate impacts undermine the quality of human and public health, contributing to increasing global mobility, while climate-impacted migrants and displaced people can experience severe health challenges in transit and in their receiving communities. Moreover, the nexus between climate change, human and public health, and mobility exacerbates pre-existing vulnerabilities, undermining human rights and implicating State obligations. As international and regional courts, including the International Court of Justice (ICJ), clarify states’ duty to protect people from the adverse impacts of climate change, it is critical to consider the nexus of human and public health and mobility.

Health and mobility interact in the context of climate change in three major ways. First, numerous direct and indirect climate impacts negatively affect human and public health—including by increasing food insecurity, heat-related illnesses, and diseases resulting from limited access to clean water. These health challenges can contribute individually or collectively to the decision or need to flee home. Second, climate change intensifies the health-related risks that migrants and displaced people encounter in transit. Third, movement to urban centers in response to climate impacts may strain resources and subject displaced people to living conditions hazardous to their health, especially where receiving communities do not provide sufficient housing, resources, and access to medical care.

International legal frameworks are crucial in guaranteeing the health-related rights of climate migrants and displaced people. The nexus of climate change, health, and mobility implicates a range of international legal principles and norms deriving from human rights and refugee law, including the rights to health and life and non-refoulement. Emerging international standards also encourage states to reduce greenhouse gas emissions and support adaptation in order to improve the quality of life and potentially prevent the displacement of people impacted by climate change and climate-related disasters.

This paper uses a law and science perspective to examine the critical nexus of climate change, mobility and human and public health. It surveys scientific evidence linking climate change to adverse health outcomes and human mobility, considering the impacts of both sudden and slow-onset climate events. This report seeks to inform the ICJ’s consideration of States’ obligations regarding climate protection by identifying international legal standards and state obligations to protect the health and wellbeing of climate-impacted people, including those who move internally or across borders. The report also serves as a resource for advocates and
governments on the effects of climate mobility on human health and public health and defines legal interventions and policies that can protect and improve human and public health in a changing climate.

While efforts to mitigate climate change are paramount, irreversible environmental changes necessitate anticipatory measures to protect migrants and displaced people, both in transit and in destination communities. States must uphold refugee and human rights law, refrain from returning people to danger, offer safe mobility pathways, and guarantee non-discriminatory access to resources and services essential to protect human and public health.

INTRODUCTION

Climate change has had catastrophic impacts on human health and public health that contribute to global migration and displacement. Climate disruptions negatively affect all social determinants of health, including economic and food security, clean air and drinking water, access to healthcare, adequate housing, and community services.1 These adverse health impacts heighten displacement trends and affect the ability of receiving communities to welcome migrants and displaced people. The United Nations High Commissioner for Refugees (UNHCR) estimates that over the past decade alone, weather-related events triggered an average of 21.5 million new displacements annually, more than twice as many as displacements caused by conflict and violence.2 The U.N. Intergovernmental Panel on Climate Change (IPCC)’s 2023 report affirms that “climate and weather extremes are increasingly driving displacement” and that “[t]hrough displacement and involuntary migration from extreme weather and climate events, climate change has generated and perpetuated vulnerability.”3

Climate change disproportionately impacts historically marginalized communities, exacerbating health inequities on local, national, and global scales. More than 90 percent of the world’s refugees come from the countries most impacted by climate change.4 The physical risks posed by climate change and environmental

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3 U.N. Intergovernmental Panel on Climate Change (IPCC), Synthesis Report of the IPCC Sixth Assessment Report. 16 IPCC, 2023 [hereinafter IPCC 2023].

4 UNHCR, Displaced on the frontlines of the climate emergency (previously cited).
degradation are highest for those least able to adapt and who have contributed the least to global greenhouse gas emissions. The most vulnerable and marginalized populations—such as racial and ethnic minorities, rural communities, and those in less economically developed countries—bear the greatest burden of climate change impacts, with this disparity expected to worsen over time. Furthermore, communities grappling with environmental injustice due to a legacy of racial discrimination and segregation have limited resources to withstand extreme weather events and rebuild in the aftermath of climate disasters.

This paper describes the nexus between human mobility and climate change impacts on public and human health, and relevant state obligations under international law. The World Health Organization (WHO) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Scholars and practitioners have distinguished between individual or human health, which refers to the health of individuals and is often associated with clinical medicine—and population or public health, which refers to the collective health of communities. Human and public health are interrelated and the distinction is not always clear. Both are intricately linked and cannot be understood independently of the context in which people live. Human and public health are influenced by socioeconomic factors, geography, and the ways in which individuals interact with their environment and community. Recognizing this interrelatedness, this paper generally refers to health impacts broadly to encompass both individual/human health and population/public health.

While it is difficult to delineate forced versus voluntary movement in the climate context, this paper uses the term displacement to describe primarily forced movement, migration to denote primarily voluntary movement, and planned relocation to signify the organized movement of entire communities, usually within the same country. The term refugee refers to individuals entitled to protection under the United Nations 1951 Refugee Convention and its 1967 protocol, as well as domestic refugee protection laws. This paper uses the term climate mobility broadly to refer to the cross-border or internal movement of people attributable, in part or in full, to climate change impacts or related environmental factors.

6 Ibid.
7 World Health Organization, Constitution. https://www.who.int/about/accountability/governance/constitution
9 Public health scholar Onyebuchi Arah argues, “neither individual nor population health is identifiable or even definable without informative contextualization within the other” and “a person’s health cannot be seen only in isolation but must be placed in the rich contextual web such as the socioeconomic circumstances and other health determinants of where they were conceived, born, bred, and how they shaped and were shaped by their environment and communities...” Ibid. at 236.
The first section discusses the scientific evidence of human health and public health drivers of migration and displacement in a changing climate, as well as health implications of climate-related mobility. The second section highlights the legal implications of the health and public health and climate mobility nexus with a particular focus on international law.

The International Court of Justice is expected to issue an advisory opinion on States’ obligations to ensure the protection of the climate system and other parts of the environment for present and future generations under international law. This report seeks to inform that process by detailing the scientific understanding of the impacts of climate displacement and migration on health and public health. The report also serves as a resource for judges, advocates and governments on the effects of climate displacement and migration on human health and public health and defines legal interventions and policies that can protect and improve human and public health in a changing climate.

THE HUMAN AND PUBLIC HEALTH AND CLIMATE MOBILITY NEXUS

Sudden-onset and slow-onset climate change impacts that drive human mobility also have detrimental impacts on human and public health. The IPCC has recognized that the adverse impacts of climate change function both as direct triggers for migration and involuntary displacement, as well as indirect drivers of human mobility through loss of livelihoods.\(^{10}\) Sudden-onset weather events linked to climate change—such as hurricanes, storms, and flooding—are distinct and have an immediate, visible impact, and can immediately render a place uninhabitable by destroying homes, businesses, and essential infrastructure.\(^{11}\) Climate change can also lead to slow-onset impacts through gradual environmental changes that unfold over months to years. Slow-onset events include sea level rise, rising temperatures, ocean acidification, glacial retreat, salinization, land and forest degradation, loss of biodiversity, and desertification. These events degrade the quality of life for impacted communities over time. Identifying slow-onset climate change effects as drivers of migration can be challenging due to their extended timeframe and complex interactions with other factors.\(^{12}\)

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\(^{12}\) Ibid.
The IPCC has found with high confidence that “climate change has adversely affected human physical health globally and mental health...and is contributing to humanitarian crises where climate hazards interact with high vulnerability.” The IPCC confirmed that climate change impacts global health, including by contributing to increased food insecurity, malnutrition, water- and vector-borne diseases, water scarcity, extreme weather events, ecological degradation, deteriorating air quality, and humanitarian crises such as conflict. These impacts certainly drive displacement, though human movement is multicausal and it is seldom possible to attribute an individual’s decision to leave their home solely to climate change impacts, which often interact with and amplify other threats. The World Health Organization (WHO) has also recognized climate change as a "threat multiplier," exacerbating health challenges and reversing progress.

This section describes the interplay between health impacts, climate change and mobility. The first part of this section describes health impacts of climate change that drive mobility. The second part of this section describes health impacts that are caused or exacerbated by climate-related migration and displacement.

1. Human health and public health drivers of climate mobility

Climate change impacts on human and public health are driving migration and displacement. Health impacts of climate change include rising instances of food insecurity, heat-related illness; adverse pregnancy outcomes; diseases resulting from limited access to clean water; respiratory and cardiovascular ailments exacerbated by worsening air quality; shifts in patterns of vector-borne and parasitic diseases; and deteriorating mental health conditions. In addition to these direct physiological effects of climate change impacts, climate change further undermines health by threatening livelihoods, exacerbating poverty, damaging homes and infrastructure, and driving conflict and violence. These impacts, which are detrimental to human and public health, contribute individually or collectively to a person’s decision or need to flee their home. Thus, climate change, human and public health, and mobility are inextricably linked.

13 IPCC 2023 (previously cited) at 50.
14 Jessica Wentz, Climate Change and Human Health: A Synthesis of Scientific Research and Legal Implications, COLUMBIA SABIN CENTER (April 2024) [hereinafter Wentz, Climate Change and Human Health]; IPCC AR6 WGII at 11; See Guéladio Cissé et al., Health, Wellbeing and the Changing Structure of Communities, Ch. 7 in IPCC AR6 WGII.
While reducing greenhouse gas emissions can help avert the most drastic scenarios, many climate change impacts are now irreversible. These include rising water levels resulting from glacier retreat as well as changes in some mountain and Arctic ecosystems caused by permafrost thaw.\textsuperscript{17} Global mean sea level rise will continue in the 21st century to a projected 20% of the global mean along two-thirds of the global coastline, areas that are typically densely developed and populated.\textsuperscript{18} Due to rising sea levels, extreme flooding events that previously occurred once a century are projected to occur annually in many vulnerable regions.\textsuperscript{19} The unavoidable consequences of sea level rise also include the loss of coastal ecosystems and ecosystem services, groundwater salinization, chronic high-tide flooding, extreme storm-related flooding, and damage to coastal infrastructure.\textsuperscript{20} In addition, climate change has already contributed to ocean acidification, regional decreases in precipitation, desertification and worsened land degradation, particularly in low-lying coastal areas, river deltas, drylands, and permafrost regions.\textsuperscript{21}

The impacts of rising sea levels and other unavoidable climate change impacts are already driving human mobility and will continue to drive migration and displacement by threatening livelihoods, settlements, health, well-being, food and water security, and cultural values.\textsuperscript{22} Approximately 3.3 to 3.6 billion individuals live in regions highly vulnerable to climate change. During the period spanning from 2010 to 2020, regions categorized as highly vulnerable experienced human mortality resulting from floods, droughts, and storms (disasters that often lead to displacement) at a rate 15 times greater than regions with low vulnerability.\textsuperscript{23} Climate change effects have also exposed millions of people to acute food insecurity and diminished water security, with the significant impacts observed in Least Developed Countries and Small Island Developing States (SIDS), as well as for small-scale food producers, low-income households, and Indigenous peoples worldwide, making these populations more vulnerable to displacement.\textsuperscript{24}

### 1.1 Eroding Livelihoods, Food Security and Drinking Water Access

Rising temperatures and changing weather patterns are impacting food systems by decimating crops, killing livestock, and changing ocean ecosystems. Food security and malnutrition are particularly affected, with

\begin{itemize}
\item \textsuperscript{17} Armstrong McKay et al., *Exceeding 1.5°C global warming could trigger multiple climate tipping points*. Science 377, 1171 (2022). https://www.science.org/doi/10.1126/science.abn7950
\item \textsuperscript{19} Ibid.
\item \textsuperscript{20} Ibid. at 45.
\item \textsuperscript{21} Ibid. at 15.
\item \textsuperscript{22} Ibid.
\item \textsuperscript{23} Ibid. at 17.
\item \textsuperscript{24} Ibid. at 15.
\end{itemize}
climate change exacerbating existing challenges and disproportionately impacting low- and middle-income countries, coastal communities, and vulnerable groups such as children, women, and Indigenous Peoples.\textsuperscript{25} The IPCC has found, with high confidence, that climate change has “reduced food security and affected water security due to warming, changing precipitation patterns, reduction and loss of cryospheric elements, and greater frequency and intensity of climatic extremes.”\textsuperscript{26} In addition, climate change adversely affects both the quality and availability of water resources. Rising sea levels can lead to the salinization of freshwater sources, droughts can diminish access to water supplies, and flooding can compromise water quality.\textsuperscript{27}

Climate change exacerbates drought and water insecurity through various factors like altered precipitation patterns, increased heat, and ecosystem degradation. This leads to a rise in drought severity and frequency, especially in already arid regions. Floods and storm surges further contaminate water sources, while sea level rise contributes to freshwater salination.\textsuperscript{28} Projections suggest a significant rise in water-related risks with each degree of warming, potentially affecting billions of people.\textsuperscript{29} Vulnerable populations and regions with existing water scarcity face disproportionate impacts, including the Middle East, North Africa, SIDS, and coastal areas.\textsuperscript{30} The IPCC estimates, with medium confidence, that “[r]oughly half of the world’s population currently experiences severe water scarcity for at least some part of the year due to a combination of climatic and non-climatic drivers.”\textsuperscript{31} Climate change is anticipated to exacerbate existing challenges related to accessing clean water and basic sanitation. Projections suggest that it could potentially double the global population lacking access to an adequate water supply.\textsuperscript{32}

\textsuperscript{25} Ibid.
\textsuperscript{26} IPCC 2023 (previously cited) at 50.
\textsuperscript{28} Wentz, \textit{Climate Change and Human Health} (previously cited) (citing IPCC AR6 WGII at See also T. R. Matthews et al., \textit{The 2014 Drought in the Horn of Africa: Attribution of Meteorological Drivers}, S83 in Explaining Extreme Events of 2014 from a Climate Perspective, 96 BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY S1(2015) [hereinafter BAMS 2014]. See also Eduardo S. P. R. Martins et al., \textit{A Multimethod Attribution Analysis of the Prolonged Northeast Brazil Hydrometeorological Drought (2012–16)}, in BAMS 2016, at S65; Xing Yuan et al., \textit{Anthropogenic Intensification of Southern African Flash Droughts as Exemplified by the 2015/16 Season}, in BAMS 2016, at S86; Chris Funk et al., \textit{Anthropogenic Enhancement of Moderate-to-Strong El Niño Events Likely Contributed to Drought and Poor Harvests in Southern Africa During 2016}, in BAMS 2016 at S91.)
\textsuperscript{29} Ibid.
Slow-onset events like increasing temperatures can also cause economic damage and increase accompanying public health risks. Intense heat, for example, poses risks to the health and safety of workers, hindering their ability to earn a livelihood. In the United States, heat-related injuries killed 815 workers and seriously injured more than 70,000 workers between 1992 and 2017, according to the Occupational Safety and Health Administration. Because the human body has a limited tolerance to temperature extremes, elevated temperatures can prompt the brain to signal to the muscles to slow down, resulting in fatigue, while nerve cells may misfire, causing symptoms like headaches and nausea. If core temperature surpasses 104 to 105°F (40-41°C), organ failure and cellular deterioration occur, leading to conditions such as kidney failure, blood poisoning, and ultimately, death. Additionally, when heat combines with humidity, which is anticipated to rise due to climate change in many regions, the risk of overheating becomes even more pronounced.

Individuals and communities who rely on agriculture are particularly susceptible to disruption of livelihoods due to climate change impacts, and “agriculture tends to be a particularly important economic sector in low-income countries, where livelihoods of a large segment of the population depend on agricultural output.” In the Americas, for instance, the agricultural sector faces heightened vulnerability to climate change impacts, as extreme weather events like heavy rainfall and drought already disrupt food supplies, leading to both wage instability and escalating food prices. In Latin America and the Caribbean, seven out of ten adults living in extreme poverty are employed in agriculture, making them especially vulnerable. Severe droughts linked to climate change have impacted millions in the Amazon region, where some rivers have reached their lowest levels in more than a hundred years. A 2024 study found that “[h]ighly vulnerable populations” including “[s]mall-holder farmers, indigenous-, rural- and river communities... were among the most vulnerable due to high poverty rates and their high dependency on agricultural food production, availability of freshwater, and

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37 Roman Hoffmann et. al., “A meta-analysis of country-level studies on environmental change and migration”, 2020, Nature Climate Change 10, 909, https://www.nature.com/articles/s41558-020-0898-6
39 See ibid.
import of goods via rivers."\textsuperscript{40} The Amazon River Basin drought has resulted in shortages of drinking water, crop failures, and power outages, particularly impacting hydroelectric plants as they struggle with diminished water resources.\textsuperscript{41} Additionally, the drought has exacerbated wildfires and raised water temperatures, contributing to a significant loss of river biodiversity. Climate change impacts in South America will have global repercussions for food systems. A representative of the United Kingdom Energy and Climate Intelligence Unit told the Guardian, “[a]bout half of our food imports come from climate impact hotspots, including Peru, Colombia and Brazil...[s]o climate change’s devastating effects on South America’s farmers last year may well translate into gaps on our supermarket shelves and higher prices for our food.”\textsuperscript{42} The World Bank estimates that climate change will lead to a 300 percent increase in extreme poverty in Latin America by 2030.\textsuperscript{43}

Rising temperatures are damaging food systems and livelihoods elsewhere across the world, contributing to adverse human and public health outcomes and driving migration and displacement. An unprecedentedly hot winter in 2023 to 2024 has decimated crops in southeast Asia. In Indonesia, the price of rice rose 16 percent from 2023 to 2024, largely because below-normal rainfall delayed planting and reduced output, prompting food inflation pressure that has required government intervention.\textsuperscript{44} Rising temperatures and lower-than-average precipitation has also severely limited crop yields in Vietnam, Thailand, and Malaysia, primarily affecting low-income farmers.\textsuperscript{45} In Mongolia, temperatures have risen significantly more rapidly than the global average, changing weather patterns and creating more frequent and intense environmental disasters, threatening food supplies for the nomadic herders and farmers who depend on natural resources for survival.\textsuperscript{46} In 2023 to 2024, a dry summer followed by an unusually cold and snowy winter caused the deaths of more than 5.9 million livestock.\textsuperscript{47} More than 2,000 herder families lost more than 70% of their livestock. Winter weather conditions in 2023 to 2024—the harshest in 50 years—have caused more than 7,000 families to face food insecurity. More than 1,000 herders’ homes were buried by heavy snowfall, and thousands more

\textsuperscript{40} Ben Clarke et. al., \textit{Climate change, not El Niño, main driver of exceptional drought in highly vulnerable Amazon River Basin}, GRAHAM INSTITUTE FOR CLIMATE CHANGE (Jan. 24, 2024). https://spiral.imperial.ac.uk/handle/10044/1/108761
\textsuperscript{42} \textit{Ibid.}
\textsuperscript{43} \textit{Ibid.}
\textsuperscript{46} https://undp-climate.exposure.co/fighting-climate-change-on-all-fronts
lack access to basic health services and other necessities. In Zambia, the most severe drought the country has seen in 20 years impacted close to eight million people and left more than six million people at risk of food insecurity, prompting the country’s president to declare a state of emergency. The drought endangers the country’s energy system, which is heavily reliant on hydroelectric power. Lower-than-average rainfall destroyed more than half the country’s maize crops, amounting to the loss of hundreds of thousands of hectares. One farmer told VOA, “All my crops are gone and now I cannot afford any meals...I don’t know how I am going to feed the children as it is.”

Elsewhere in 2024, unprecedented heat waves and other climate-related disasters have also threatened livelihoods, food supplies, and other social determinants of health. In the Philippines, record-breaking heat in spring 2024 caused the suspension of in-person classes in nearly 4,000 schools. Temperatures reached more than 107 degrees Fahrenheit (42C) in some areas, “a dangerous level that the weather bureau warned could cause heat cramps and exhaustion.” Teachers in the region, where class sizes can exceed 60 students in rooms lacking adequate ventilation, have reported “experiencing dizziness and headaches, and said students were unable to focus and, at worst, had suffered health problems, including nose bleeds.”

The climate-related destruction of livelihoods and disruptions to food supplies are creating severe human and public health crises and contributing to migration and displacement. The International Organization for Migration (IOM) predicts that the decline in agricultural yields caused by climate change is expected to expose an additional 8 to 80 million people to food insecurity by 2050, predominantly in Africa and Asia. Three-quarters of countries grappling with food insecurity also have internally displaced populations. Severe food insecurity exacerbates the vulnerabilities of these displaced communities, posing significant health risks, especially for children and pregnant or lactating women. For people experiencing poverty who lack safety

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50 Ibid.
52 Ibid.
55 Ibid.
nets, moving may become necessary to recover from climate shocks to livelihoods and food systems, particularly when governments falter in delivering sufficient assistance.\textsuperscript{56}

### 1.2 Loss of Housing and Public Services

Climate change impacts cause economic hardship, which contributes to worsening human and public health outcomes and displacement. Climate-related disasters including storms, wildfires, and flooding cause economic harm by destroying homes, businesses, and means of livelihood.\textsuperscript{57} These disruptions can impact the functioning of communities by damaging essential infrastructure including schools, hospitals, and public services, disproportionately impacting poor households.\textsuperscript{58} Consequently, when climate disasters destroy homes, disrupt income streams, and shutter businesses, some affected individuals may have no recourse but to relocate.\textsuperscript{59}

Adequate housing is connected to health outcomes,\textsuperscript{60} and climate disasters can be particularly disruptive to marginalized individuals and communities who often lack the resources to recover.\textsuperscript{61} Low-income households in particular navigate precarious financial situations even in the best of environmental circumstances, relying on sporadic employment without a steady income. A low-income household’s assets, typically predominately physical, are particularly vulnerable to destruction during climate-related disasters and are often uninsured.\textsuperscript{62} Even if certain households emerge physically unscathed during a disaster, underserved populations can still face economic ruin due to the disruption of vital services such as power outages, water supply interruptions, and the closure of educational and healthcare facilities.\textsuperscript{63} Disasters also lead to increased housing costs,

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\textsuperscript{58} \textit{Ibid.}


\textsuperscript{62} See Wellenstein et al., \textit{Climate Change and Poverty: The Perfect Storm} (previously cited).

\textsuperscript{63} \textit{Ibid.}
particularly for renters,\textsuperscript{64} as well as the loss of jobs and income.\textsuperscript{65} Simultaneously, individuals experiencing poverty allocate significant portions of their income to food expenses, heightening their vulnerability to increases in food costs in the wake of disasters.\textsuperscript{66}

Sudden-onset disasters that drive displacement also have detrimental impacts on public and human health. For instance, severe storms and flooding pose the risk of direct injury and death from flood waters, landslides, and high winds. Floods and storms can also cause the release of hazardous chemicals, the spread of waterborne and vector-borne pathogens, contamination of water resources, and damage to critical health infrastructure, as well as the loss of shelter, income, and crops for affected individuals and communities.\textsuperscript{57} In Bangladesh, for instance, devastating floods submerged large parts of the country in 2022, displacing nearly 4 million people.\textsuperscript{68} In 2023, deadly wildfires on the Hawaiian island of Maui destroyed the homes of more than 10,000 people, and out migration was significant.\textsuperscript{69} In these scenarios, displacement is clearly attributable to environmental disasters that destroyed homes and other physical structures, while bringing about devastating public and human health impacts.

1.3 Exacerbating Violence and Conflict

Rising temperatures and more frequent environmental disasters worsen conflicts by restricting resource availability in affected areas and increasing the vulnerability of affected communities,\textsuperscript{70} including their risk of displacement. Although establishing a direct correlation between climate change and increased conflict can be challenging,\textsuperscript{71} scholars have consistently noted that the repercussions of climate change play a role in escalating armed conflict, especially when they intersect with preexisting vulnerabilities like socio-economic

\textsuperscript{64} See Kelsea Best, Qian He, Allison Reilly, Nhi Tran, and Deb Niemeir, \textit{Rent affordability after hurricanes: Longitudinal evidence from US coastal states}, \textit{Risk Analysis} (2023), \url{https://onlinelibrary.wiley.com/doi/epdf/10.1111/risa.14224}.

\textsuperscript{65} See Wellenstein et al., \textit{Climate Change and Poverty: The Perfect Storm} (previously cited).

\textsuperscript{66} Ibid.

\textsuperscript{67} WHO, \textit{Quantitative Risk Assessment of the Effects of Climate Change on Selected Causes of Death}, 2030s and 2050s (Simon Hales et al. eds., 2014), \url{https://iris.who.int/handle/10665/134014}


\textsuperscript{71} See Clionadh Raleigh & Henrik Urdal, \textit{Climate change, environmental degradation and armed conflict}, \textit{26 Political Geography} 674 (2007).
disparities, political instability, and poor governance.\textsuperscript{72} For States already grappling with elevated levels of violence and conflict, the effects of climate change may exacerbate these challenges. Climate-displaced people may be fleeing places where inadequate governance by the state creates pockets of instability, allowing organized criminal entities to assert control.\textsuperscript{73} As climate-related disasters and escalating temperatures devastate livelihoods and diminish the availability of land, food, and resources, criminal organizations find opportunities to exploit affected communities.\textsuperscript{74}

In numerous regions of Central America and Mexico, for example, criminal gangs and cartels employ violence and extortion tactics to exert significant influence over communities, often receiving support from local law enforcement and other government officials.\textsuperscript{75} In some areas where climate-related disasters have resulted in crop destruction and the weakening of local economies, organized criminal groups have monopolized access to vital resources. In Mexico, where unprecedented droughts in 2023 have depleted rivers, devastated crops, and pushed tens of thousands of farmers into dire poverty, the Sinaloa cartel has taken control of water distribution.\textsuperscript{76} The cartel redirects fresh water from lakes and natural sources, using it to irrigate their cannabis and poppy fields, and profits from selling water to local communities.\textsuperscript{77} Diminishing seasonal rains and rising temperatures linked to climate change have created a “new black market” for water across the country.\textsuperscript{78} A cartel leader told Saga, “[w]ater is now a valuable asset for us, and as it becomes more scarce, the more we will fight to make sure we have enough.”

Confronted with dwindling resources due to the diminishing availability of land related to climate change, governments and private corporations have a prolonged history of exploiting the land and natural resources of Indigenous Peoples and other vulnerable communities for development ventures, including energy

\textsuperscript{74} See Raleigh & Urdal, \textit{Climate change, environmental degradation and armed conflict} (previously cited).
infrastructure and monoculture plantations. These projects often result in the destruction of natural resources and the displacement of individuals and communities. Major development projects have forcibly displaced well over 250 million people worldwide in the span of 30 years. Criminal organizations have also targeted the land of vulnerable communities amidst dwindling resources. In Mexico, the pressure exerted by climate-related changes on land availability has resulted in displacement, as organized criminal groups have forcibly displaced people from their homes and agricultural lands. For instance, some cartels have seized private properties and natural resources to capitalize on Mexico’s lucrative avocado industry. University of Maryland researchers reported that “cartels are heading out into the forests of Michoacán with axes, chainsaws, and machine guns to establish their own growing fields... for avocados.” By appropriating land and cultivating their own avocado plantations, these cartels enhance their ability to control and exploit Mexico’s avocado market.

Climate change-related land and natural resource dispossession is a significant driver of displacement. Environmental change caused by climate change results in the depletion of land and natural resources, creating scarcity. This scarcity can become an incentive for entities such as government officials, private developers, and organized criminal groups to exploit the lands and resources of Indigenous peoples and other marginalized communities. Communities and individuals who resist encroachments on land and natural resources often face violent repression and persecution. Out of the 1,733 land and environmental defenders killed between 2012 and 2022, more than two-thirds were in Latin America, with Indigenous peoples accounting for thirty-nine percent of the victims. Mexico, Honduras, and Guatemala were ranked among the

83 Ibid.
84 See Nett & Rüttinger, supra, n.XX.
top 10 deadliest countries for environmental activists between 2012 and 2021. Conflict and violence arising from climate change impacts has serious implications for human and public health. Besides the obvious threats to the lives and physical safety of impacted individuals and communities, threats of violence create severe mental health challenges for those impacted. Conflict can create instability that threatens governments and institutions, eroding access to healthcare and other essential services. Violence is a major driver of cross-border and internal displacement globally.

2. Climate mobility impacts on human health and public health

As climate impacts drive migration and displacement, the movement of people within countries and across borders in turn implicates additional human health impacts. Climate change exacerbates weather-related threats to people on the move, while movement to urban centers in response to climate impacts may strain resources and subject displaced people to living conditions hazardous to their health in situations where receiving communities fail to provide sufficient housing, resources, and access to medical care.

2.1 Climate-Related Health Impacts for People in Transit

As forced displacement on a global scale reaches unprecedented levels, some governments have responded by closing off safe and regular migration pathways, which pushes migrants and displaced people into remote territories made more dangerous by the effects of climate change. The U.S. southwest borderlands, for instance, are witnessing a surge in heat-related fatalities and injuries, exacerbated by rising temperatures that make border crossings increasingly perilous. Heat exposure was the most common cause of death for people crossing the U.S.-Mexico border in recent years, followed by drownings. In September 2023, the International Organization for Migration (IOM) declared the U.S.-Mexico border “the deadliest land route for

migrants worldwide on record” after temperatures soared to unprecedented levels in the U.S. borderlands. During the summer of 2023, certain border regions experienced an unprecedented heat dome, a direct consequence of climate change that led to record-breaking temperatures exceeding triple digits for over a week. In June 2023, one researcher noted, “In South Texas, wet bulb temperatures in the low 90s and heat indices near 120 are perilously close to levels considered fatal after several hours of exposure, as they overwhelm the human body’s ability to keep cool.”

Heat-related deaths and injuries in the borderlands dramatically increased in the wake of U.S. policies obstructing asylum and border access. As temperatures have risen, so have reported U.S. Border Patrol rescues involving people suffering from weather-related injuries. In fiscal year 2021, the U.S. Border Patrol documented 3,760 rescues of individuals afflicted by heat-related injuries at the Southwest border, marking a threefold increase compared to the preceding fiscal year (1,209) and more than quintuple the number recorded in 2017 (725). Border Patrol data also reveals a dramatic rise in rescues of individuals injured due to exposure to cold environmental conditions, reaching 961 rescues in Fiscal Year 2021—a nearly sevenfold increase from the previous year’s count of 139. The rising temperatures have resulted in a growing death toll, with over 853 recorded deaths of people attempting to enter the United States at the southwest border in 2022, marking the deadliest year on record since IOM began tracking migrant deaths in 2014. This count is likely an underestimate, as many of those who disappear in the desert are never recovered. Some advocates say the actions of U.S. immigration enforcement officers have further exacerbated heat-related

97 See Montoya-Galvez, 853 migrants (previously cited).
99 Ibid.
challenges for border crossers, including refusing to provide medical aid to injured people and destroying water and other supplies left by nonprofit organizations for migrants in need.\textsuperscript{102}

Elevating temperatures are also making journeys across waterways increasingly hazardous by reshaping weather patterns. At the U.S.-Mexico border, for example, more migrants and displaced people died attempting to cross the treacherous Rio Grande in 2022 than ever before\textsuperscript{103} especially during periods of heavy rainfall when water levels surge and currents intensify.\textsuperscript{104} Additionally, fatalities have occurred as migrants and asylum seekers tried to swim around the border wall separating the United States and Mexico at Playas de Tijuana.\textsuperscript{105} As rising temperatures change weather patterns, making rivers, oceans, and other waterways more treacherous, restrictive state policies leave migrants and displaced people more exposed to environmental hazards to their health.

Policies that restrict freedom of movement force individuals to embark on more dangerous journeys in other countries as well. For example, due in part to newly implemented visa restrictions in Mexico an unprecedented number of migrants and displaced people — unable to fly to Mexico directly — have passed through the Darien Gap, a stretch of jungle connecting Colombia and Panama, where harsh environmental conditions and activity by organized criminal groups create deadly hazards.\textsuperscript{106} The journey through the Darién Gap presents a myriad of hazards, including landslides, extreme heat and humidity, rugged mountains, and swift rivers, resulting in injuries and fatalities among migrants and asylum seekers attempting to cross.\textsuperscript{107} IOM reported that at least thirty-six people died crossing the Darién in 2022, but this is a significant undercount, as most deaths in the jungle are not reported and bodies are never recovered.\textsuperscript{108} As climate change impacts

\textsuperscript{102} Reec Jones, Nobody is Protected (2022) 183- 86.


\textsuperscript{104} Joel Rose & Marisa Peñaloza, Migrant Deaths at the U.S.-Mexico Border Hit a Record High, in Part Due to Drownings, NPR (Sept. 29, 2022, 5:00 AM), https://www.npr.org/2022/09/29/1125638107/migrant-deaths-us-mexico-border-record-drownings.


\textsuperscript{108} Number of Migrants Who Embarked on the Dangerous Darien Gap Route Nearly Doubled in 2022, (previously cited).
weather patterns, the Darién Gap has been battered by heavy rains, which pose further challenges. One reporter observed, as he followed migrants and asylum seekers through the passage, that “[o]ne of the things that makes Darien Gap so dangerous for migrants, aside from the untamed wilderness, is the rain. This is one of the wettest places in the world and when it closes in, it basically stops everyone down in the camp for awhile.”

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110 Ibid.
Restrictive policies have also trapped migrants and displaced people in precarious situations where they lack access to sufficient health services and sanitation and are exposed to the adverse impacts of climate change. For instance, U.S. policies restricting border access have left migrants and asylum seekers to wait indefinitely in Mexico, where many have languished in makeshift tent encampments and other precarious conditions that expose them to extreme heat and other adverse effects of climate change.\(^\text{111}\) Since Mexico began requiring humanitarian visas for onward travel, including in public buses, migrants and asylum seekers have been forced to wait for weeks or months in southern Mexico, where many have lacked access to safe shelter, adequate medical care, and other resources for survival.\(^\text{112}\)

Similar impacts can be observed from increasingly restrictive migration policies in Europe, as climate change, conflict, and political instability has driven rising numbers of people to journey across the Mediterranean Sea from Africa and the Middle East. At least 29,000 people have gone missing after endeavoring to cross the Mediterranean Sea since 2014, according to the IOM.\(^\text{113}\) Policies restricting border access have trapped thousands in precarious refugee camps, which are often overcrowded and lack proper health services and hygiene and expose residents to the adverse impacts of climate change. For example, in 2020, the Moria camp on Lesvos, Greece burned down, leaving around 12,000 people without shelter. Many were moved to an emergency site, which later flooded.\(^\text{114}\)

Policies restricting migration and border access exacerbate the vulnerability of people who move across international borders—not only by forcing them to take more dangerous journeys, but also by obstructing their access to less climate-vulnerable regions.\(^\text{115}\) Migrants generally move to areas that are less susceptible to the impacts of climate change,\(^\text{116}\) thus, hardening borders can increase the number of people exposed to

\(^{111}\) See e.g., Rebecca Gendelman et al., Failure to Protect: Biden Administration Continues Illegal Trump Policy to Block and Expel Asylum Seekers to Danger 28 (Eleanor Acer et al. eds. 2021) (“In Tijuana, approximately 1,500 people are living in a makeshift tent encampment outside the San Ysidro port of entry, many of whom have been stranded in Mexico for over a year unable to request U.S. asylum protection due to the Title 42 expulsion policy. There is no security in the encampment, and sanitation and medical assistance are very limited. In March 2021, the camp flooded, further exacerbating the dire conditions for migrants living there”).

\(^{112}\) Neusner & Kizuka, Fatally Flawed, (previously cited), at 14; see Kuhner & Arvey, (previously cited); see Carranza, (previously cited).

\(^{113}\) International Organization on Migration, Missing Migrants Project (last accessed Apr. 15, 2024) https://missingmigrants.iom.int/region/mediterranean.


adverse climate change impacts by “trapping them in areas where they are more exposed and vulnerable than where they would end up if they had the possibility to move more freely.”\textsuperscript{117}

### 2.2 Insufficient Resources and Services in Receiving Communities

People who move internally or across borders in response to climate change impacts often lack access to sufficient resources and services to ensure their health. Climate-impacted migrants and displaced people often have unique physical and mental health needs due to their exposure to environmental factors. IOM reports that they frequently encounter significant obstacles in accessing vital health and social protection services or receiving information in a language they comprehend, and that these challenges stem from “migration conditions, discrimination, exploitation, linguistic and cultural barriers, lack of documentation, and various other circumstances.”\textsuperscript{118}

Environmental degradation can contribute to urbanization and internal displacement, which in turn can increase pressure on labor markets and further drive human mobility.\textsuperscript{119} The movement of internally displaced persons toward urban areas presents a significant challenge, for instance, for cities with weak institutions unable to provide essential services to their growing populations. Disaster displacement to urban centers often results in unmet needs in receiving communities, including lack of sufficient health services. Displaced people often settle in marginalized areas where housing fails to comply with regulations, leading to overcrowding and increased vulnerability to risks.\textsuperscript{120} Urban service deficiencies, infrastructure gaps, and inefficient land registration systems contribute to ad hoc development and give rise to informal settlements housing vulnerable communities, especially in developing countries. These settlements often lack safety, adequate health services, and sanitation, increasing disease risks. Displaced people in these settlements may also face eviction and abuse from landlords, risking secondary displacement and deepening poverty.\textsuperscript{121} Displacement exacerbates human rights abuses, gender-based violence, and discrimination, particularly affecting vulnerable groups. These impacts often persist long after the disaster event.\textsuperscript{122}

In situations of climate-related cross-border mobility, receiving communities can fail to meet the needs of migrants and displaced people. In the United States, for instance, studies have shown that Hispanic

\begin{footnotesize}
\textsuperscript{117} Benveniste et al., \textit{(previously cited)}, at 26695.

\textsuperscript{118} IOM, \textit{Climate Change Impacts on Health Affecting Development and Human Mobility} (Dec. 2023) (previously cited) at 2.

\textsuperscript{119} Roman Hoffmann et. al., “A meta-analysis of country-level studies on environmental change and migration”, 2020, Nature Climate Change 10, 910, \url{https://www.nature.com/articles/s41558-020-0898-6}


\textsuperscript{121} \textit{Ibid.} at 9.

\textsuperscript{122} \textit{Ibid.} at 9-10.
\end{footnotesize}
immigrants face worse health outcomes and barriers to access to healthcare and treatment. These findings align with the broader implications of social determinants of health, suggesting that challenges climate migrants and displaced people commonly face—including limited access to healthcare resources, heightened risks throughout life, and stress—can perpetuate health disparities.
LEGAL IMPLICATIONS OF THE INTERSECTION OF HUMAN AND PUBLIC HEALTH & CLIMATE MOBILITY

International law provides critical guidance on the protection of the rights of individuals and communities at risk of displacement and on the move in a changing climate. The International Court of Justice (ICJ) has been called upon to clarify the general obligations of States under international law “to ensure the protection of the climate system and other parts of the environment from anthropogenic emissions of greenhouse gases for States and for present and future generations.” As the ICJ considers this request, addressing the legal obligations at the intersection of health and mobility is critical to ensure adequate protection of vulnerable communities and individuals from the adverse impacts of climate change.

The ICJ settles legal disputes between States and provides advisory opinions on international law. It recognizes obligations between States and those owed to the international community at large. The Court also considers human rights law in evaluating state obligations, noting that breaching individual rights can constitute a violation of international obligations. Essentially, the ICJ has jurisdiction to address matters involving individual and collective rights if they impact a state’s obligations to other States or the global community. Certain international human rights treaties allow disputes to be brought before the ICJ. Numerous sources of international law establish standards to which States must adhere to protect rights in the context of climate change and human mobility.

Article 38(1) of the Statute of the Court outlines the sources of international law that the ICJ is obligated to adhere to when deciding disputes. It requires the Court to apply international conventions, whether general or specific, that establish rules expressly recognized by the parties involved. Additionally, the Court must consider international custom, serving as evidence of a widely accepted general practice. The ICJ is required to incorporate general principles of law recognized by civilized nations into its decisions. Furthermore, judicial decisions and the opinions of eminent legal scholars from various countries serve as supplementary means for

determining legal rules, contingent upon the provisions of Article 59. These sources collectively guide the ICJ in its role of interpreting and applying international law in resolving disputes brought before it.  

This section describes international law standards relevant to the nexus of human and public health, climate change, a Mobility. The first section explains international law standards relevant to human and public health in the context of climate change. The second section describes legal standards relevant to climate mobility and health impacts.

1. International law and human and public health

This section summarizes international law relevant to human and public health implications of climate change. To prevent displacement and promote the agency of climate-impacted communities and individuals to make their own decisions about adaptation or relocation, it is essential for States to uphold their obligations under international law to protect citizens from the adverse impacts of climate change on public and human health. For a broader discussion on the intersection of international law and human and public health, see this paper’s companion report by Jessica Wentz, Climate Change and Human Health: A Synthesis of Scientific Research and Legal Implications. (Columbia Sabin Center, April 2024).

1.1 Human Rights Law and Climate-Related Threats to Health

State obligations concerning climate change and health are influenced by various human rights instruments: the Charter of the United Nations (UN Charter), the International Covenant on Civil and Political Rights (ICCPR), the International Covenant on Economic, Social and Cultural Rights (ICESCR), and the Convention on the Rights of the Child (CRC), among others. The ICJ has established that these treaties have extraterritorial force and are relevant in interpreting State obligations under international law.  

The right to health, encompassing socio-economic factors and a healthy environment, obliges States to ensure the highest attainable level of health for all individuals. States must provide health systems that cover disease prevention, treatment, access to essential medicines, reproductive health, and community participation in decision-making. Additionally, the realization of the right to health is interconnected with other human rights, such as

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the right to food, water, sanitation, adequate housing, and a clean environment. Climate change poses a significant threat to these rights, exacerbating health hazards and inequalities, particularly affecting vulnerable groups. Human rights bodies emphasize States' obligations to mitigate climate change, adapt to its impacts, and cooperate internationally. Failure to address foreseeable harm from climate change may constitute a violation of human rights obligations. States must take affirmative measures to prevent and remedy climate change-related human rights harms and provide effective remedies, including compensation for past harm.

Climate change impacts that endanger public and human health particularly implicate the right to life, which is protected by numerous human rights instruments including the Universal Declaration of Human Rights (article 3), ICCPR (article 6), and CRC (article 6). The UN Human Rights Committee (HRC) has affirmed that climate change, along with environmental degradation and unsustainable development, represents one of the "most urgent and significant threats to the capacity of current and future generations to uphold the right to life," as articulated in Article 6 of the ICCPR. Under the ICCPR, States are required to ensure the right to an adequate food supply and to prevent hunger, even in times of disaster. Upholding this right requires that States guarantee all people within their jurisdiction with basic survival necessities. In addition, the right to water is inherently linked to the right to a decent standard of living and the right to the highest achievable standard of health, serving as a fundamental prerequisite for the fulfillment of other human rights.

The ICESCR also protects the rights of people who move internally and across borders, as well as those who relocate through planned community relocation processes. They include the rights to “an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous

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130 For a more detailed discussion of human rights law and the protection of health in the context of climate change, see Jessica Wentz, Climate Change and Human Health: A Synthesis of Scientific Research and Legal Implications, Columbia Sabin Center (April 2024).
132 Committee on the Elimination of Discrimination Against Women, Committee on Economic, Social, and Cultural Rights, Committee on the Protection of the Rights of All Migrant Workers and Members of their Families, Committee on the Rights of the Child, Committee on the Rights of Persons with Disabilities, Joint Statement on “Human Rights and Climate Change” (Sept. 16, 2019).
133 OHCHR (2016) ¶ 54.
136 CESC, ‘General Comment No. 12’ (n 65) paras 8, 11, 14-15.
improvement of living conditions” (article 11), “the enjoyment of the highest attainable standard of physical and mental health” (article 12), and education (article 13).\footnote{International Covenant on Economic, Social and Cultural Rights, arts. 11, 12, 13.}

In accordance with international law, States must ensure the protection of human rights by promptly implementing preventive actions to address environmental harm resulting from actions perpetrated by both state and non-state actors, such as corporations, within their territory. States also must address the consequences of climate change, as five United Nations human rights treaty bodies affirmed in a joint statement, affirming that “[f]ailure to take measures to prevent foreseeable human rights harm caused by climate change, or to regulate activities contributing to such harm, could constitute a violation of States’ human rights obligations.”\footnote{UN High Commissioner for Human Rights, \textit{Five UN human rights treaty bodies issue a joint statement on human rights and climate change}, (16 September 2019) https://www.ohchr.org/en/statements/2019/09/five-un-human-rights-treaty-bodies-issue-joint-statement-human-rights-and.}

In 2019, the HRC affirmed that States must take affirmative action to protect climate-impacted people and prevent their displacement. Torres Islanders filed a complaint with the UNHRC, alleging that the government of Australia had violated their fundamental rights under Art. 6 and 27 of the ICCPR by failing to take adequate climate action.\footnote{Communication, U.N. H.R. Comm., No. 3624/2019 (2019).} The Torres Islanders, traditional owners of the Great Barrier Reef, claimed that impacts such as sea level rise were already interfering with their lives, livelihoods, and culture, and would eventually force them to move to mainland Australia, resulting in severe human rights impacts, including cultural losses.\footnote{Special Rapporteur on the Field of Cultural Rights, \textit{International Legal Frameworks Related to Climate Change, Culture and Cultural Rights}, ¶ 30, U.N. Doc. A/75/298 Annex (Oct. 10, 2020); Center for International Environmental Law, \textit{Human Rights Obligations of States in the Context of Climate Change} (2020), available at https://www.ciel.org/wp-content/uploads/2020/03/CCPR.pdf.} In 2022, the HRC determined that Australia’s failure to adequately protect Torres Islanders against climate change’s adverse impacts resulted in violations of their rights to enjoy their culture and be free from arbitrary interferences with their private life, family, and home, under Articles 27 and 17 of the ICCPR.\footnote{Views Adopted by the Committee Under Article 5(4) of the Optional Protocol, Concerning Communication No. 3624/2019, U.N. H.R. Comm., U.N. Doc. CCPR/C/135/D/3624/2019 (Sept. 22, 2022).} In response to the Torres Islanders’ contention that their home will become uninhabitable in 10 to 15 years, the Committee affirmed that Australia should take affirmative measures to protect and, if needed, relocate climate-impacted Torres Islanders.\footnote{\textit{Id.} at ¶ 8.7.}

Regional human rights courts have also recognized the obligations of States to prevent transboundary environmental harm that can have public and human health impacts. The Inter-American Court of Human
Rights, which interprets and applies the American Convention on Human Rights, has recognized a state's duty to prevent transboundary harm affecting the rights of individuals beyond its borders, including environmental harm contributing to climate change. In Advisory Opinion OC-23/17, the Court established an autonomous right to a healthy environment under the American Convention and affirmed jurisdiction over persons impacted by environmental harm caused by a state's activities, regardless of their citizenship. This opinion broadens the scope for transboundary climate change litigation in the Americas and underscores the obligation to prevent environmental harm that undermines human rights, potentially encompassing climate-related impacts. The court is currently considering the human rights obligations implicated by the climate emergency, including those related to displacement.

### 1.2 Customary International Law and International Treaties

The interpretation of State obligations regarding climate change and its health impacts involves several principles of customary international law, as outlined in a recent report on international legal principles relevant to the ICJ's advisory opinion on climate change. Relevant principles include the "no harm" rule, which requires States to prevent harm to other States' territories and citizens caused by activities within their jurisdiction or control. The precautionary principle advises States to take proactive measures to minimize environmental and health risks, even in the face of scientific uncertainty. Other relevant principles include the duty to cooperate in addressing international problems, and the principle of solidarity, which compels States to assist other States in addressing shared problems, without the expectation of reciprocity. The principle of equity compels adjudicators to account for considerations of justice in the application of the law, while intergenerational equity underscores the fair distribution of development benefits and burdens among different generations. Finally, the polluter pays principle holds accountable those responsible for pollution,

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146 Request for an advisory opinion on the Climate Emergency and Human Rights submitted to the Inter-American Court of Human Rights by the Republic of Colombia and the Republic of Chile (Jan. 9, 2023), [https://www.corteidh.or.cr/docs/opiniones/soc_1_2023_en.pdf](https://www.corteidh.or.cr/docs/opiniones/soc_1_2023_en.pdf).


148 Wentz, *Climate Change and Human Health* (previously cited).
requiring them to cover associated costs. These principles collectively shape State obligations in addressing climate change and its health implications.\textsuperscript{149}

The United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement further strengthen the legal framework and guiding principles for State action on climate change.\textsuperscript{150} State parties to these agreements commit to safeguarding the climate system for present and future generations, aiming to limit global warming to well below 2°C or 1.5°C above pre-industrial levels.\textsuperscript{151} They further commit to mitigate greenhouse gas emissions, adapt to climate impacts, share information, and cooperate internationally, particularly in supporting developing countries. Both treaties incorporate principles of customary international law, such as the "no harm" rule, precautionary principle, duty of cooperation, equity, intergenerational equity, and common but differentiated responsibilities.\textsuperscript{152} The Paris Agreement provides additional guidance for States, including relating to setting emission reduction targets, submitting nationally determined contributions (NDCs) reflecting goals and progress, and supporting developing countries financially and technologically.\textsuperscript{153} The agreements recognize the interconnections between climate change, environmental degradation, and public and human health.\textsuperscript{154} These agreements encourage States to mitigate climate change and promote adaptation, which is critical to protect public and human health and prevent displacement.

2. International law and climate mobility

This section discusses international legal standards to protect migrants and displaced people impacted by climate change, both internally and across international borders, as well as communities and individuals at risk of displacement. Though people impacted by climate change primarily move internally, climate impacts often intersect with other drivers of displacement that may force people to seek protection across international

\textsuperscript{149} For a comprehensive discussion of customary international law principles and their sources in international authority and caselaw, see Jessica Wentz, \textit{Climate Change and Human Health: A Synthesis of Scientific Research and Legal Implications}, COLUMBIA SABIN CENTER (April 2024).

\textsuperscript{150} \textit{Ibid.} ("The UNFCCC entered into force on March 21, 1994 and has been ratified or acceded to by 198 parties (197 States and the European Union); the Paris Agreement entered into force on November 4, 2016 and has been ratified or acceded to by 195 Parties (194 States and the European Union)").


\textsuperscript{152} Wentz, \textit{Climate Change and Human Health} (previously cited).

\textsuperscript{153} Paris Agreement Art. 4(1)-(3).

\textsuperscript{154} For a more comprehensive discussion of the implications of international treaties for the health impacts of climate change, see Wentz, \textit{Climate Change and Human Health} (previously cited).
As the United Nations Special Rapporteur on human rights in the context of climate change affirmed, a “large number of people are being displaced across international borders due to climate change and . . . there is an international legal responsibility to properly protect them.”

2.1 Legal Protection for Internally Displaced Persons

When climate mobility takes place within a country’s borders, States are required to uphold the rights of internally displaced persons under international human rights law. This includes proactively and reactively protecting displaced individuals from threats to life and other rights arising from the impacts of environmental disasters and processes. The 1998 U.N. Guiding Principles on Internal Displacement encourages States to protect internally displaced persons and provide them with humanitarian assistance, including those displaced by climate-related events. The International Law Commission (ILC) has also provided guidance on the protection of rights in the wake of disasters. The ILC’s Draft Articles on the Protection of Persons in the Event of Disasters (ILC Draft Articles) include mass displacement in the definition of disaster, and affirms that states should protect the human rights of disaster-impacted people and comply with humanitarian principles.

In 2018, the International Law Association Committee on International Law and Sea Level Rise adopted the Sydney Declaration of Principles on the Protection of Persons Displaced in the Context of Sea Level Rise (Sydney Principles). Similar to the ILC Draft Articles, the Sydney Principles acknowledge the significance of human rights in this sphere, and they go a step further by urging States to enable cross-border migration "in anticipation of, or in response to, irreversible environmental degradation or sudden-onset disasters associated

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155 See Julia Neusner et al., U.S. Comm. for Refugees & Immigrants et al., Climate of Coercion: Environmental and Other Drivers of Cross-Border Displacement in Central America and Mexico 3 (2023) [hereinafter Neusner et al., Climate of Coercion].
with sea level rise.” Referencing the UNFCCC principle of common but differentiated responsibilities, the ILA suggests that States amend their domestic laws to facilitate such cross-border movement. Nonetheless, neither the ILC Draft Articles nor the Sydney Principles outline legal recourse for migrants and displaced individuals to compel States to admit them.

International law also protects the individual and collective rights of indigenous communities who often find their ancestral lands under threat from climate change impacts and illegal encroachments related to climate change impacts. The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) protects the rights of indigenous people to self-determination (article 3) and freedom from discrimination (article 2), as well as the collective right “to live in freedom, peace and security as distinct peoples” (article 7). Planned community relocation processes involving indigenous communities should prioritize these individual and collective rights.

In addition, despite the lack of binding multilateral agreements specifically governing human mobility in the context of climate change, a normative framework is emerging within the realm of global legislation. This framework primarily derives from international human rights law and humanitarian principles and incorporates domestic immigration laws in protecting the rights of climate-impacted people. Most cases related to climate mobility rely on human rights principles.

### 2.1 International Refugee Law

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162 Ibid. at 38. (“In order to make migration a realistic and manageable option, States of destination should review or amend their domestic laws to facilitate such migration, building on existing good practices in the spirit of the principle of common but differentiated responsibilities.”)


International refugee protection law may provide protection to climate-displaced people, including those who have experienced persecution tied to government action or omissions based on protected grounds. The 1951 Refugee Convention defines a refugee as a person with a “well-founded fear of persecution for reasons of race, religion, nationality, membership in a particular social group or political opinion.” At least 145 States are parties to the 1951 convention and its 1967 Protocol (removing a time limit from the refugee definition). Most have codified this refugee definition into domestic laws, and some have adopted standards providing more expansive protection into domestic legal frameworks.

While climate change impacts alone do not generally qualify a displaced person for refugee protection, climate change and climate-related disasters can intersect with and exacerbate targeted violence, conflict, and other threats that constitute persecution under international law. The Global Compact on Refugees, adopted by the UN General Assembly in 2018, recognizes that “climate, environmental degradation and natural disasters increasingly interact with the drivers of refugee movements.” The 2018 Global Compact for Safe, Orderly and Regular Migration also acknowledges the impacts of “climate change and disasters” as drivers of migration. In 2020, the United Nations High Commissioner for Refugees (UNHCR) released a report summarizing how existing refugee law under the 1951 Convention may allow for valid climate-related claims. UNHCR specifies several types of refugee protection claims that may present a climate-persecution nexus, clarifying:

The adverse effects of climate change and disasters are often exacerbated by other factors such as poor governance, undermining public order; scarce natural resources, fragile ecosystems, demographic changes, socio-economic inequality, xenophobia, and political and religious tensions, in some cases leading to violence. As a result of these negative impacts of climate change and disasters, combined

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167 Id.
169 UN High Commissioner for Refugees (UNHCR), Legal considerations regarding claims for international protection made in the context of the adverse effects of climate change and disasters, (Oct. 1 2020), https://www.refworld.org/docid/5f75f2734.html; Neusner et. al., Climate of Coercion (previously cited).
with social vulnerabilities, people may be compelled to leave their country and seek international protection.  

A significant challenge in applying international refugee law to climate displacement arises from the lack of a clearly identifiable persecutor. Unlike in the conventional refugee scenario, governments in the countries of origin may be taking action to shield their populations from the adverse effects of climate change, while those in receiving countries (like the United States and European countries) may fail to sufficiently address their greenhouse gas emissions, resulting in detrimental impacts in other parts of the world. The guidance document addresses this issue by highlighting situations where governments might withhold benefits from certain populations, potentially leading members of these groups to harbor a genuine fear of persecution.

Some countries have adopted more expansive refugee definitions through regional agreements. The Cartagena Declaration, which many Latin American countries have adapted into domestic legal frameworks, defines a refugee as including “persons who have fled their country because their lives, safety or freedom have been threatened by generalized violence, foreign aggression, internal conflicts, massive violation of human rights or other circumstances which have seriously disturbed public order.” Similarly, the Organisation of African Unity (OAU) Convention includes in its refugee definition an individual who “owing to...events seriously disturbing public order in either part or the whole of his country of origin or nationality[,]...is compelled to leave his place of habitual residence in order to seek refuge in another place...” This broader refugee definition holds greater potential to protect people displaced by climate change impacts. The Cartagena Declaration has been applied to people fleeing environmental disasters, including Haitians displaced by earthquakes who sought protection in Mexico. Though an earthquake is not a climate-related disaster, the Cartagena Declaration’s application in the context of environmental events suggests that expansive regional frameworks can extend protection to people displaced by climate change impacts.

2.2 Non-Refoulement and Human Rights Law

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173 See ibid.
176 Cartagena Declaration on Refugees, Nov. 22, 1984.
The principle of non-refoulement, established by the 1951 Refugee Convention, forbids countries from returning refugees to areas where their life or freedom is threatened.\textsuperscript{179} Over time, this principle has broadened within customary international law to encompass not only recognized refugees (people fleeing persecution on account of their race, religion, ethnicity, political opinion, or particular social group) but all people in transit facing potential irreversible harm, such as torture or violations of their right to life upon deportation.\textsuperscript{180} The non-refoulement obligation applies to all individuals within a state's borders, regardless of their immigration status or method of entry.\textsuperscript{181} As temperatures rise, the question of whether non-refoulement extends to threats posed by climate-related environmental conditions to health and safety grows increasingly pertinent.

International human rights law also protects other rights endangered by climate change and environmental disasters. Numerous international and foreign judicial bodies have determined that worsening environmental circumstances resulting from climate change might jeopardize rights protected by the International Covenant on Civil and Political Rights (ICCPR) and other treaties in the context of forced return to climate-impacted places.\textsuperscript{182} International refugee protection and human rights laws impose duties on States to protect displaced people within their territory. The ICCPR protects rights implicated by cross-border movement, including the right to life (Article 6) and the right to life with dignity (Article 10).\textsuperscript{183}

In the 2020 case of Teriota v. New Zealand, the HRC concluded that significant climate-related harm could infringe upon an individual's right to life as articulated in Article 6 of the ICCPR, observing that “environmental


\textsuperscript{182} Hum. Rts. Comm., Views Adopted by the Commitee under Art. 5(4) of the Optional Protocol, Concerning Communication No. 2728/2016, U.N. Doc. CCPR/C/127/D/2728/2016 (Oct. 24, 2019) [hereinafter Teitiota v. New Zealand]; Verwaltungsgerichtshof of Baden-Württemberg [VGH] [Higher Administrative Court of Baden-Württemberg] Nov. 29, 2019, A 11 S 2040/20 (Ger.) (ruling in 2020 that the state of the environment plays a role in deciding whether deporting a non-citizen would breach Article 3 of the European Convention on Human Rights, which prohibits the expulsion of a non-citizen facing inhumane or degrading treatment or punishment in their home country.); Cass., sez. Il, 12 novembre 2020, n. 5022, Giur. it. 2021 (It.) (ruling that in deportation cases, adjudicators should consider environmental degradation, climate change, and unsustainable development in the individual’s country of origin, as these factors could impede their ability to fully enjoy the right to life and the right to a life with dignity.).

\textsuperscript{183} G.A. Res. 2200A (XXI), The International Covenant on Civil and Political Rights, arts. 6, 10 (Dec. 16, 1966).
degradation, climate change and unsustainable development constitute some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life.”\textsuperscript{184} In its \textit{General comment no. 36, Article 6 (Right to Life)}, the HRC clarified that “[t]he duty to respect and ensure the right to life requires States parties to refrain from deporting, extraditing or otherwise transferring individuals to countries in which there are substantial grounds for believing that a real risk exists that their right to life under article 6 of the Covenant would be violated.”\textsuperscript{185} The HRC further specified that the right to life includes “the right of individuals to enjoy a life with dignity and to be free from acts or omissions that would cause their unnatural or premature death.”\textsuperscript{186}

Furthermore, the HRC elucidated that the obligation not to extradite, deport, or transfer under Article 6 of the ICCPR could offer broader protection than the principle of non-refoulement.\textsuperscript{187} The decision states that “without robust national and international efforts, the effects of climate change in receiving States may expose individuals to violations of their rights under articles 6 [right to life] or 7 [prohibition of torture or other cruel, inhuman or degrading treatment or punishment] of the Covenant [ICCPR], thereby triggering the non-refoulement obligations of sending States.”\textsuperscript{188} Though the HRC affirmed the New Zealand court’s decision to deport Ioane Teitiota, a Kiribati national displaced due to climate-related factors,\textsuperscript{189} the decision opens the door for broader protection for climate-displaced people under the ICCPR.

Several European countries have also incorporated interpretations of human rights responsibilities that acknowledge the importance of safeguarding individuals from being sent back to areas where their rights could be endangered by climate-related and environmental circumstances, as well as threats to their health arising from such circumstances. For instance, the Italian Court of Cassation, citing the Teitiota decision, determined that environmental degradation caused by oil exploitation in the Niger Delta the rights to life and existence with dignity of a Nigerien national seeking humanitarian protection.\textsuperscript{190} The Court of Cassation highlighted that, in addition to armed conflicts, social and environmental factors could jeopardize human life and infringe upon the right to life and principles of freedom and self-determination. It established that the “ineliminable core constituting the base of personal dignity” sets the minimum standard below which the right

\textsuperscript{184} Teitiota v. New Zealand (previously cited) at para. 9.3-9.4.
\textsuperscript{185} U.N. Hum. Rts. Comm, General Comment No. 36, ¶ 30, CCPR/C/GC/35 (Sept. 3, 2019); see e.g., Teitiota v. New Zealand (previously cited), ¶ 9.6; see e.g., N.A. v. United Kingdom, App. No. 25904/07, ¶ 115 (July 17, 2008).
\textsuperscript{186} Teitiota v. New Zealand (previously cited) at para. 9.4.
\textsuperscript{187} Id.
\textsuperscript{188} Id. at para.9.11
\textsuperscript{189} Id. at para. 9.14-10.
to life and decent living conditions are not guaranteed. This standard must be upheld not only in cases of armed conflict but also in situations involving social, environmental, or climate degradation where human survival is threatened, and fundamental rights are compromised.191

International human rights law also protects people in transit. Restrictions on movement and access to humanitarian protection have exacerbated climate-related threats to the rights to life, life with dignity, and other rights protected under the ICCPR. The Special Rapporteur on human rights in the context of climate change has confirmed, “[t]he process of moving across international borders is fraught with rights violations. Large numbers of people displaced across borders die or go missing every year at both land and sea borders.”192 With regard to rights violations in third countries,193 the U.N. Special Rapporteur on the human rights of migrants has clarified that “the transnational nature of some State actions in the context of governing international borders does not exempt States from fulfilling positive human rights obligations, nor from accountability; rather, the responsibility of multiple States may be implicated in certain cases, for instance on the high seas, and elsewhere when States act extraterritorially.”194 This suggests that the States bear responsibility for human rights violations that occur in third countries as a consequence of policies that limit freedom of movement.

STATE OBLIGATIONS TO PROTECT HUMAN AND PUBLIC HEALTH FOR CLIMATE MIGRANTS & DISPLACED PEOPLE

The international legal standards detailed above impose obligations on States to take positive steps to protect the rights of individuals and communities impacted by climate change who face threats to their health and wellbeing. The first part of this section describes State obligations to prevent displacement by supporting climate mitigation and adaptation efforts. The second part of this section details State obligations to protect the rights of people on the move, internally or across borders, due in part or in whole to climate change impacts.

191 ibid.
192 Jane McAdam, Building International Approaches to Climate Change, Disasters, and Displacement, 33 WINDSOR Y.B. ACCESS JUST. 1, 5 (2016) at ¶¶ 16-17.
193 The term “third country” refers to countries that are not directly involved in a particular situation or agreement at issue. For example, in the context of asylum, a third country might be one that is neither the asylum seeker’s home country nor the country where the applicant is seeking asylum.
1. Prevent forced displacement and promote agency

Addressing and mitigating the human and public health impacts of climate change is essential to prevent displacement and promote the agency of impacted individuals and communities to decide where to live. Mounting scientific evidence indicates that climate change is significantly impacting human health and its determinants, with ongoing adverse effects expected. Consequently, States hold legal obligations towards both other States and the international community to mitigate their role in these health-related repercussions of climate change. These obligations, stemming from customary international law, treaty law, and human rights law, impose specific obligations on States, including to aggressively reduce greenhouse gas emissions to limit global warming, implement adaptation measures to mitigate health risks posed by climate change, collaborate with other States and international bodies to support climate change mitigation and adaptation efforts, provide compensation for damage caused by disproportionate contributions to climate change, and regularly assess and disclose climate change-related impacts and risks while updating policies accordingly.¹⁹⁵

Objective 2 of the Global Compact for Safe, Orderly and Regular Migration (GCM) aims to "reduce the adverse drivers and structural factors leading to migration from one's country of origin." States that have signed the GCM and committed to this objective should support climate change mitigation and adaptation efforts. Implementing adaptation and resilience strategies to address climate-related disasters fosters sustainable development and promotes safer mobility. This entails establishing climate-resilient health systems, guaranteeing access to health services, and enhancing the overall physical, mental, and social well-being of all communities.¹⁹⁶ The GCM advises States to:

“[d]evelop adaptation and resilience strategies to sudden-onset and slow-onset natural disasters, the adverse effects of climate change, and environmental degradation, such as desertification, land degradation, drought and sea level rise, taking into account the potential implications for migration, while recognizing that adaptation in the country of origin is a priority.”¹⁹⁷

In addition, States should provide sufficient aid, warnings, and infrastructure in anticipation of sudden- and slow-onset climate disasters. The predictability of the impacts of slow-onset disasters in particular provides opportunities for governments to plan for aid. In developing adaptation and resilience policies, it is essential

¹⁹⁵ For a detailed examination of state obligations to address the health implications of climate change, see Jessica Wentz, Climate Change and Human Health: A Synthesis of Scientific Research and Legal Implications, COLUMBIA SABIN CENTER (April 2024).
for States to promote sustainable agricultural practices and other strategies to cultivate more resilient food systems and livelihoods capable of enduring the impacts of climate change.\textsuperscript{198} States should prioritize identifying and supporting livelihoods resilient to disasters and climate change, guided by scientific evidence indicating the extreme vulnerability of certain food systems and livelihoods.\textsuperscript{199} Accordingly, States should also provide the necessary technical and material support and protection to safeguard the livelihoods and ecosystems crucial for communities particularly exposed to climate change effects.\textsuperscript{200}

The loss and damage agenda can also help prevent climate change impacts that harm public and human health and drive displacement and facilitate accountability for States that contribute most to greenhouse gas emissions. Under Article 8 of the 2015 Paris Agreement, States agreed to avert, minimize and address loss and damage associated with the adverse effects of climate change.\textsuperscript{201} Under the Loss and Damage framework under the UNFCCC, the international community has commenced discussions on displacement as a form of loss and damage. While there is not a universally agreed-upon definition of loss and damage within the UNFCCC, it typically encompasses both economic and non-economic losses attributable to the adverse effects of climate change, spanning sudden-onset disasters, extreme weather events, and gradual phenomena such as temperature rise, drought, sea-level rise, desertification, land and forest degradation, salinization, and biodiversity loss; including losses such as the destruction of homes, loss of livelihoods, and displacement.\textsuperscript{202}

Indeed, scholars and advocates have viewed displacement itself as a manifestation of loss and damage, which can exacerbate other consequences of climate change.\textsuperscript{203} Through concerted advocacy led by nations from the Global South, the 2023 Conference of the Parties (COP28) to the UNFCCC established a Fund for Loss and Damage.\textsuperscript{204} This fund is designed to offer support for recovery and compensation to communities grappling

\textsuperscript{198} UN Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, A/74/161, para. 86(e) (July 15, 2019).
\textsuperscript{199} CEDAW, General recommendation No. 37, para. 46(c); Intergovernmental Panel on Climate Change (IPCC) (2022), Climate Change 2022: Impacts, Adaptation and Vulnerability Working Group II - Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change
\textsuperscript{200} ibid.
\textsuperscript{204} UNFCCC, \textit{Operationazlization of the new funding arrangements, including a fund for responding to loss and damage} (2023), https://unfccc.int/sites/default/files/resource/cma5_auv_10g_LnDfunding.pdf
with irreversible losses due to climate change. Adequate funding, however, is lacking and sufficient funding is crucial to address the pressing and extensive needs of affected communities. Supporting climate-affected communities in adapting in place, as well as aiding individuals displaced by climate change through the newly established Loss and Damage Fund, will necessitate substantial financial commitments from Global North and other countries with significant historical carbon emissions. States should commit to adequately contributing to the fund, as well as to track and document the role of climate change in driving displacement to ensure assistance for vulnerable communities.

2. Protect people who move within and across borders

While it is critical for States to take action to promote adaptation and mitigate climate change impacts, even if greenhouse gas emissions were to be significantly reduced, the earth has already exceeded certain tipping points, locking in environmental changes that will have significant impacts on public and human health and make continuing migration and displacement inevitable. Thus, in addition to actions to mitigate climate change, States should take action to protect migrants and displaced people who already and are expected soon to be on the move, including by adhering to existing obligations, creating legal pathways and ensuring proper resources for the health and safety of displaced people in destination locations.

2.1 Uphold Humanitarian Obligations

States must uphold their obligations under international refugee and human rights law. This includes refraining from returning people to places where disasters or environmental deterioration have hindered the protection of human rights. As observed by the Nansen Initiative, many States abstain from returning individuals to countries adversely affected by climate-related disasters. Suspending repatriations serves as a protective measure when the rights of individuals and communities are jeopardized and signifies support for affected countries, whose institutions may be overwhelmed in their response to the disaster. In addition, states must ensure sufficient access to resources and services in receiving communities. To uphold the rights of migrants, relocated, and displaced people, States must provide access, without discrimination, to decent standard of living, housing, food, water, health, and education. This encompasses the duty to refrain from

205 Ibid.
implementing regressive actions that reduce the safeguarding of these rights, such as cutting off access to hospitals, schools, electricity, and other essential public services.  

States should also strengthen and expand refugee protection laws to ensure access to safety for climate-displaced people who experience persecution that makes them eligible for refugee protection. States must uphold existing refugee protection laws and should be encouraged to adopt broader standards, like the Cartagena Declaration refugee definition, which has the potential to cover climate-displaced people. In addition, private sponsorship arrangements can leverage the private resources and volunteer potential of non-governmental organizations and communities to offer financial and logistical aid for resettling climate-displaced individuals via refugee protection programs. These arrangements can generate additional resettlement slots for refugees, providing opportunities to expand protection for climate-impacted refugees through private sponsorship. In addition, States should ensure that officers adjudicating refugee protection claims receive comprehensive training in better recognizing valid climate-related claims. These materials should illustrate where climate-related experiences may, when combined with other eligibility factors, qualify people for protection under current refugee law and clarify that individuals displaced by the complex interaction of climate change and discrimination, political persecution, social marginalization, and/or violence may qualify for humanitarian protection.

Furthermore, States should end policies restricting border and asylum access, including policies that externalize migration enforcement to third countries, to reduce climate-related threats to people in transit. Restrictive immigration policies have resulted in higher rates of climate-related injuries and deaths in transit, which implicate the right to life, the right to life with dignity, and other rights guaranteed by the International Covenant on Civil and Political Rights. Acknowledging the connection between restrictive immigration policies and deadly crossings, in August 2023, UNHCR and IOM called upon the United States to create more safe and regular migration pathways. In addition, States should be held accountable for policies and practices that externalize migration controls and violate human rights. Externalization of migration controls involves state actions beyond their own borders to prevent migrants and asylum seekers from entering the legal jurisdictions or territories of destination countries and may render individuals legally inadmissible without considering the merits of their protection claims. This could involve legal challenges brought before domestic courts, as well as

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208 Erica Bower, “The Sea is Eating the Land Below our Homes” (previously cited) (citing UN Office of the High Commissioner of Human Rights, “Special Rapporteur on the Right to Food;” CESC General Comment No. 3, The nature of states parties obligations (Art. 2, par.1), 14/12/90.Para 9; CESC, General Comment No. 13, para. 45.).


international and regional human rights bodies whenever these externalization policies contravene international or national law.\textsuperscript{211}

In addition to upholding international obligations, States can also leverage humanitarian provisions of domestic immigration laws in the climate context. Many countries have laws that incorporate provisions for safeguarding individuals whose situations raise humanitarian concerns but do not neatly fit into standard migration channels or refugee statutes. Often, immigration laws offer scant or vague guidance on the scope of humanitarian considerations, yet they do not expressly exclude their application in the realm of climate change and environmental crises.\textsuperscript{212} Some countries' legislation explicitly addresses environmental or climate-related events. For instance, Mexico's immigration law explicitly covers individuals whose lives or wellbeing are in danger due to environmental disasters.\textsuperscript{213} Similarly, Guatemala's immigration law includes the presence of an environmental disaster in neighboring nations as a humanitarian reason for legal entry and residence.\textsuperscript{214} While these provisions vary by country, they uniformly offer initial protection against deportation and are applied on a case-by-case basis, considering individual circumstances. However, the practical application of these frameworks to people on the move in a changing climate has been limited, necessitating advocacy efforts to broaden and fortify their utilization.

\subsection*{2.2 Ensure Safe Mobility Pathways}

Existing pathways for people fleeing climate-related disasters are insufficient to address the expected scale of climate change impacts on human mobility.\textsuperscript{215} Furthermore, while mitigation efforts to enable people to remain in their homes should be pursued globally, anticipatory measures that allow people to adapt by moving are critical. Anticipatory measures play a vital role in managing mobility in a manner that respects the agency of impacted individuals and communities to make decisions about their own futures.\textsuperscript{216} Thus, in addition to ensuring humanitarian protection, States should offer complementary protection specifically for climate-impacted individuals. These complementary protection pathways should provide access to

\textsuperscript{211} Bill Frelick, et. al, \textit{The Impact of Externalization of Migration Controls on the Rights of Asylum Seekers and Other Migrants}, 4 J. Migration Hum. Sec. 190-193, 210 (2016).
\textsuperscript{213} \textit{Ibid.} at 39.
\textsuperscript{214} Congreso de la República de Guatemala, \textit{Decreto número 44-2016}, Diario de Centro América (Oct. 18, 2016).
\textsuperscript{215} Julia Neusner et. al., \textit{Climate of Coercion} (previously cited).
\textsuperscript{216} Ama Francis, \textit{Climate Mobility in the Courts} (forthcoming).
resettlement assistance, family reunification, and path to citizenship for people displaced in the context of climate change and should not amend or replace existing humanitarian protection programs.\textsuperscript{217}

Recent international normative frameworks also affirm that safe and regular pathways that facilitate mobility with dignity are essential to protect people on the move from the intensifying effects of climate change. The Global Compact on Safe, Orderly, and Regular Migration, signed by over 160 countries, advises national governments to adopt anticipatory measures to address climate displacement, including work permits.\textsuperscript{218} By doing so, the Global Compact seeks to ensure that migration is characterized by dignity rather than desperation. The Nansen Initiative (now the Platform on Disaster Displacement) also presents policy measures that facilitate movement in advance of harm.\textsuperscript{219}

Planned community relocations also play a vital role in addressing internal displacement caused by climate change impacts on whole communities. States must incorporate a human rights-centered approach to planned community relocations, resettlement, and planned migration efforts, prioritizing the well-being and needs of those affected. This approach should align with the Guiding Principles on Internal Displacement and other pertinent guidance.\textsuperscript{220}

A number of existing legal frameworks can facilitate safe and durable avenues for climate-related cross-border mobility. For example, States should expand free movement agreements, which can protect people from climate-related risks by enabling them to move across borders within specific regions. In the Eastern Caribbean, the Eastern Caribbean Economic Union (ECEU), established in 2010 under the Revised Treaty of Basseterre, enables free movement of people, goods, services, capital, and enterprises among seven member States. Eastern Caribbean citizens can live and work in any Protocol Member State without needing a work permit, especially beneficial during disasters. Similarly, the Caribbean Community (CARICOM) Single Market (CSM) permits free movement among member States, with plans to enhance this by 2024. MERCOSUR, formed in 1991, fosters free trade and movement among South American countries, including a "free residence area" established in 2002, allowing citizens to reside and work across participating nations without

\textsuperscript{217} Ibid.
\textsuperscript{218} G.A. Res. 73/195, Global Compact for Safe, Orderly, and Regular Migration ¶ 21 (Dec. 19, 2018).
\textsuperscript{220} See Erica Bower, “The Sea is Eating the Land Below our Homes,” Human Rights Watch (July 31, 2023).
visas. Free movement agreements are especially helpful where climate-related movement is multicausal because they do not require beneficiaries to prove their reason for moving.

To protect people on the move, States must end policies limiting access to freedom of movement that force people seeking safety into dangerous routes made more treacherous by the impacts of climate change. Instead, States should promote safe and regular migration pathways and take steps to protect people in transit from the human health impacts of extreme heat and other effects of climate change, such as providing access to sufficient food, water, health care, and shelter. States should adopt and strengthen protection pathways for climate-impacted people, including temporary protection arrangements, free movement agreements, and climate-specific visas. In addition, non-humanitarian visas like labor, family and student visas, offer vital additional pathways for climate-affected and displaced individuals. However, States must take positive steps to protect against labor exploitation and corruption in recruitment processes and should not prioritize labor pathways at the expense of specialized climate pathways and access to humanitarian protection.

CONCLUSION

The intertwined relationship between climate change, human and public health, and human mobility underscores the urgent need for effective state responses. As the ICJ considers States' obligations to protect the environment and citizens from the adverse impacts of climate change, it is crucial to consider the nexus of human and public health and human mobility. Climate impacts have far-reaching consequences on public and human health, exacerbating existing vulnerabilities and inequities and driving global mobility. Marginalized communities that have contributed least to the climate crisis are most vulnerable to these impacts. International law imposes obligations on States to support adaptation, mitigate climate risks, and protect displaced people in transit and in destination communities. These include aggressive emission reductions, robust adaptation strategies, and equitable support for affected communities and individuals. Ensuring safe and regular migration pathways, alongside adequate resources for health and safety, is crucial in safeguarding the rights and wellbeing of climate-impacted people on the move.

221 International Refugee Assistance Project et. al., Legal Action Agenda (April 2024) (previously cited) at 18.
222 Ibid. at 24.