Illegalized Bodies: Addressing Disabled Vulnerabilities and Adaptation to Climate Change

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Abstract: Climate change disproportionately impacts disabled people. Although people with disabilities experience multidimensional inequalities, which heighten their vulnerability to climate change, they are often absent from climate change discourses. The main argument of this article is that although climate change will likely further worsen disabled vulnerabilities, climate change and natural disasters can become a site for adaptation and resilience for disabled communities. This article will use disability justice, critical human security literature, environmental security, and migration studies literature to prove that disabled people are powerful agents of change and their full participation is critical to the success of adaptation and mitigation policies and programs as key climate stakeholders. Using the case studies of the United States during and after Hurricane Katrina and the Philippines during and after Typhoon Haiyan, this article will discuss how American and Filipino disabled people experience climate change and, more specifically, climate-induced migration. The main research questions will be what vulnerabilities do disabled people experience in the face of climate change, how those vulnerabilities differ based on their multiplied identities (such as gender, ethnicity, race, and class), and how can adaptation better include disabled migrants? This document will also function as a working paper, providing recommendations for how humanitarian organizations and governments can better include the disabled community in their work, such as including disabled people in decision-making processes and employing a twin-track approach.

Keywords: Disability, disability studies, Hurricane Katrina, Typhoon Haiyan, climate change, climate-induced migration, disabled migrants, twin-track approach, vulnerabilities, adaptation

Introduction

Approximately 15-20% of the entire world or over one billion people identify as disabled.¹

This article defines disability as “people with physical impairments, people who belong to a

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sensory minority, people with emotional disabilities, people with cognitive challenges, and those with [mental or physical] chronic/severe illness.” In fact, disabled people are the world’s largest minority group. Additionally, there are currently at least five million people who have been displaced reported to global non-governmental organizations (NGOs)- although this number is likely much higher due to underreporting; however, Oxford University’s Norman Myers predicts that there will be 200 million refugees and internally displaced people as a result of climate change by 2050.

Climate change disproportionately impacts disabled people. Disabled people are four times more likely to die during a natural disaster as they are often abandoned due to decreased mobility and are among the first to die as a result of dehydration, lack of medication or medical services and food, heat strokes, limited ability to swim, inadequate humanitarian intervention, and increased risks of violence, robbery, rape, trafficking, and abuse. Natural disaster will be defined as “catastrophic events with atmospheric, geological, and hydrological origins… e.g., droughts, earthquakes, floods, hurricanes, landslides[, typhoons]… that can cause fatalities, property damage and social environmental disruption.” Natural disasters can also be compounded by human and political actions that contribute to climate change, by carbon emissions resulting in melting ice caps and thus raising water levels. In general, disabled people are also more likely to become more disabled because the migration process and evacuation

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shelters are not accessible to their needs. Although people with disabilities experience multidimensional inequalities, which heighten their vulnerability to climate change, they are often absent from climate change discourses. However, disabled people are powerful agents of change and their full participation is critical to the success of adaptation and mitigation policies and programs as key climate stakeholders. The main argument of this article is that although climate change will likely further worsen disabled vulnerabilities, by following the recommendations at the end, climate change and natural disasters can become a site for adaptation and resilience for disabled communities. This article will discuss how disabled people (looking at all types of disabilities) experience climate change and, more specifically, climate-induced migration. Migration will refer predominantly to internal displacement as most climate-related migration will be within national borders. Internal displacement will be defined as “the forced movement of people within the country they live in.” Therefore, the main research questions will be what vulnerabilities do disabled people experience in the face of climate change, how those vulnerabilities differ based on their multiplied identities (such as gender, ethnicity, race, and class), and how can adaptation better include disabled migrants?

The article will draw upon critical human security literature, environmental security, migration studies, and disability studies. It will also examine two different case studies: the

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7 Heumann and Castres.
United States and the Philippines. 61 million American adults (approximately 26% of adults) live with a disability; however, this figure is likely underrepresented due to internalized ableism, fear of repercussion, and undercounting of mental illnesses.13 The United States is home to the origins of disability justice with significant disability advocacy, leadership, and scholarship; Hurricane Katrina will act as an example of the failure of humanitarian policy to save disabled migrant lives. The Philippines also presents a specific narrative about how Southeastern Asian Island countries are facing the loss of their land to sea levels rising, focusing on the event of Typhoon Haiyan (also referred to colloquially as Typhoon Yolanda). The rate of disability in the Philippines is also incredibly high: 12% of Filipinos 15 years and older reported severe disabilities, 47% reported moderate disabilities, and 23% reported mild disabilities (only 19% reported no disabilities).14 Therefore, migration, especially for disabled people, becomes more challenging.

This document will also function as a working paper, providing recommendations for how humanitarian organizations and governments can better include the disabled community in their work. Disability studies will be critical to this analysis as using the social model of disability reveals the structural and cultural violence of disability, migration, and climate change beyond the physical impacts. The article will draw upon primary sources like unilateral and multilateral legislation as well as blogs, United Nations (UN) and NGO reports, podcasts, performances, and YouTube videos created by disabled individuals.

**Theoretical Introduction: Human Security, Disability Studies, and Disability Justice**

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Who is human has historically been constructed as a “masculine (white, heterosexual, able-bodied) subject;” however, this is exclusionary as disabled people are seen as less human than others and are more vulnerable if they hold other marginalized identities.\textsuperscript{15} This article will pull from a critical human security perspective which “shift[s] the referent object from the (nation-)state to the individual.”\textsuperscript{16} Historically, human security has ignored how disabled people are seen as easy targets for companies to use as test subjects for toxic waste and chemicals for capitalism, demonstrating how these communities are further marginalized by climate change. However, by looking at the structural factors and sources of insecurity,\textsuperscript{17} as well as adding a disability studies lens, this article will help illuminate upon disabled vulnerabilities.

Disability studies and disability justice emerged in the 1980s due to a perception of disabled people as inferior, especially because of widespread Social Darwinist views and policies.\textsuperscript{18} Social Darwinism calls for the survival of the fittest, often not including disabled people, and even promotes eugenics. Eugenics is defined as the scientific theory that humankind can be improved to create a largely white able-bodied population via “involuntary sterilization, segregation and social exclusion [to] rid society of individuals deemed… to be unfit”, largely people of color and disabled people.\textsuperscript{19} Despite common perceptions that Social Darwinism and eugenics have been fully debunked, forced sterilization against disabled people and genetics

\textsuperscript{16} Ibid, 20.
counseling based on these theories have continued throughout the 21st century. Therefore, human security and society at-large fail to acknowledge the perception of an able-bodied body-mind and how that structures the world, creating a dominance not just of Whiteness but also of able-bodiedness.

Disability studies challenge this dominance, centering on “the social model of disability, which defines disability not as the product of individual impairment but the result of barriers created by inaccessible social, economic, and political structures.” Under disability studies, disability is not seen as an incidental or exceptional condition of structural violence, such as migration and climate change, but as an expected result. Disability justice, the second major advocacy movement from the disability studies field, promotes ten major principles: intersectionality, leadership of those most impacted, anti-capitalism, cross-movement solidarity, recognizing the multiplicity of identities and experiences of individuals, sustainability, commitment to cross-disability solidarity, interdependence upon other community members in times of need, collective access, and collective liberation. In the face of people creating policies based on the struggles of disabled people, the motto of the disability justice movement became “nothing about us without us,” arguing for the necessary integration of disabled perspectives into the experiences they endure.

22 Condon, 6.
23 Ibid, 16.
Disability justice activists have experienced severe marginalization on environmental issues and have advocated based on their own experiences. For example, Leah Lakshmi Piepzna-Samarasinha, a member of Sins Invalid, a performance-based intersectional disability advocacy NGO, identifies the link between her community’s disablement and environmental injustice:

When the wind blew from Norton’s ceramic abrasive tile plant, you wanted to puke at my school, 500 yards away. Every year, another teacher came down with alopecia. Another teacher got breast or colon cancer. I was nineteen when my mother was diagnosed with stage four ovarian cancer ….
The first girl I ever kissed grew up in Leicester, where there was a little uranium leak in the 80s. She found out she had invasive cervical cancer at 28, in her first Pap smear in 10 uninsured years.

Lakshmi Piepzna-Samarasinha highlights how queerness and disability in her life live on the backdrop of capitalist environmental injustice and the lack of access to health resources such as insurance. Nevertheless, companies and able-bodied people perpetuate Social Darwinism because they believe that some people, specifically disabled people, are not fit to survive in general, let alone in climate catastrophe. Disability justice sees disability as a result of capitalism and environmental structural violence without devalorizing the individuals with disabilities, so it can help provide a multidimensional understanding to tackle climate change.

Next, this article will continue to draw from critical human security, disability studies, and disability justice, as well as migration studies and environmental justice literature, to discuss the existing literature and projects engaging with the vulnerabilities and adaptation of disabled individuals.

**Literature Review**

**Disabled Vulnerabilities: An Intersectional Perspective**

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Disabled people often already experience serious multidimensional vulnerabilities prior to climate change that depend on their specific disability as well as their other identities. However, climate change often worsens these vulnerabilities.

Vulnerability will be defined as “a ‘complex social and ecological situation’ that is related to and works in connection with ‘social and economic entitlements’ of a specific community or context.” As global development professor Bernadette Resurreccion and resources and development scholar Edsel Sajor state, “Vulnerability is not intrinsic to, nor does it derive from, any one factor, such as ‘being a [disabled person]’ or ‘being a migrant.’ Instead, some groups and persons are more vulnerable than others because of the processes and power relations embedded in particular societies.” Hence, this article will engage with the power relations that impact disabled people prior to and during climate crises. Additionally, critical geography scholar Farhana Sultana declares it is important to interrogate the “intersectionalities of social difference… to differentiate the ways in which the impacts of climate change are experienced and responded to.” Therefore, the following paragraphs will go into the chronic vulnerabilities of disabled people, and the ones that develop with climate change, as well as the intersectionalities of social difference that create the social and ecological situation of disabled climate migrants.

As disability studies scholar Julia Watts Belser states, “if we persist in framing disability and climate change as a problem of physical vulnerability, we miss the underlying realities of structural violence: how ableism, racism, class inequality and other forms of oppression work

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29 Resurreccion and Sajor, 61.
Disabled people experience numerous inequalities based on the combination and power of their identities, which result in varied risks from climate change. As Alyssa Gutnik and Marcie Roth of the disability non-profit Humanity and Inclusion (HI) argue, “certain drivers of vulnerability, such as gender, age, race, and ethnicity all occur independently of disability, however, other drivers such as social status, wealth, and level of education are proven to be closely linked to disability and the correlation is positive: the presence of disability often indicates lower social status, less wealth, and fewer years of education attained.” Disability often inherently means less economic capital, although this is not always true. According to forced migration scholar Maria Pisani and editor-in-chief of the Disability and the Global South journal, Shaun Grech, poor or low-income disabled people “often lack the economic capital necessary to travel, the cultural capital required to access information, and the social capital and networks required to negotiate a new space.” Therefore, class does not solely have economic impacts but social and cultural impacts as well, and all of these types of resources have the power to further hinder migration. Human geographer Emma Calgaro also found that gender has historically been a marker of vulnerability in cases of climate change as disabled women are often more likely to be stranded at home while disabled men may get better medical assistance, access to food relief, and long term monetary assistance because of the assumption women stay at home and men are more likely to provide for their families. Thus, gender can be a source of vulnerability that impacts the acquisition of aid. Vulnerabilities

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31 Watts Belser, “Disabled People Cannot be ‘Expected Losses’ in the Climate Crisis.”
32 Gaskin et al., 801.
34 Pisani and Grech, 429.
35 Calgaro, 322.
can also be intergenerational due to generations of lead or pesticide exposure, often also linked to racism and classism, which pass down to their descendants. The following quote from Watts Belser provides the example of Puerto Rico to explain how structural violence and colonialism impacted disabled people after the hurricane in 2018:

Take the case of disability communities in Puerto Rico, who faced catastrophic harm in the wake of Hurricane Maria in 2018. To call the hurricane a “natural disaster” is to obscure the way United States colonialism laid the groundwork for the devastation. U.S. economic austerity policies left the island subject to poor infrastructure, a shaky electrical grid, patchy medical systems and inadequate public services — all of which were stressed to breaking point when the hurricane hit. And when it comes to disability, eligible Puerto Ricans receive an average of $74 a month, a fraction of the disability benefits provided to U.S. citizens on the mainland. People with disabilities experience inequalities in income, employment, education, health, housing, nutrition, age, ethnicity, and community participation.

A person with a disability experiences the same emergency situation that everyone else faces in addition to the extra challenges they face on a daily basis; the emergency is likely to exacerbate these daily challenges. In 2011, the UN High Commissioner for Refugees explained the experience of migration for those with disabilities as follows: “persons with disabilities… are at heightened risk of violence, including sexual and domestic abuse; exploitation by family members; discrimination; and exclusion from access to humanitarian assistance, education, livelihoods, health care, nationality, and other services.” According to Pisani and Grech, disabled people, especially poor and low-income disabled people, suffer from increased barriers to migration and adaptation such as problems in accessing food and water; inaccessible food distribution lines; poor sanitation and inaccessible toilets; inaccessible living quarters; limited access to assistive devices; inaccessibility to government social services or medical care such as benefits, providers, social service programs; barriers to accessing information and education such

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36 Gutnik and Roth, 28.
as lack of Braille, sign language, and interpreters in early warning systems; and “cultural mediators, translators, humanitarian actors, policymakers and others untrained in disability issues.” Alex Ghenis of the World Institute on Diplomacy notes that disabled people also “often rely on interpersonal support networks, such as groups of family, friends, or caregivers… If [disabled people] choose to move, they will have to manage the logistics of moving in coordination with their entire support network, do so with a severely reduced support group, or figure out a way to establish a new network at their destination; however, many cannot move at the same time or to the same place.” Therefore, being disabled means increased barriers in nearly all areas of life and increased risks of violence due to climate change, and climate change-related migration can even destroy networks of care. Furthermore, Pisani and Grech also nuance that many migrants of climate change are more likely to remain in these disaster settings because of the need to rebuild support, their homes may no longer be accessible, and accessible transportation and information may not be available. Hence, disabled people may experience more prolonged situations of displacement due to additional accessibility challenges.

Especially given the possibility of protracted living in unsustainable environments, climate change and migration can also result in the aggravation of existing disabilities and chronic illnesses or the creation of new conditions. For instance, Humanity and Inclusion (HI) experts Gutnik and Roth found that climate change could cause respiratory illnesses like asthma due to pollution, conditions related to heat or water or food, posttraumatic stress disorder, and other mental health conditions. Mental health conditions specifically are very common, with

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38 Pisani and Grech, 431.
39 Ghenis.
40 Pisani and Grech, 432.
41 Gutnik and Roth, 22. HI is an NGO that focuses on disabled people in humanitarian emergencies.
widespread prevalence of trauma and post-traumatic stress disorder.\textsuperscript{42} Public health researchers Emily Ying Yang Wong and Rosamund J. Southgate also discovered that migration from climate change and other natural disasters can worsen existing chronic diseases or cause new chronic diseases to arise.\textsuperscript{43} Thus, disabled people can suffer from new or worsened physical vulnerabilities, in addition to the social vulnerabilities mentioned above.

Furthermore, one of the biggest challenges with social vulnerability is that disabled people are frequently excluded from leadership and participation in disaster management prior to disasters and once disasters happen.\textsuperscript{44} Calgaro writes that there is a “lack of clear pathways and platforms for people with disabilities, their representative organizations, and disability advocacy groups to be routinely included in disaster risk reduction policy, planning, and implementation processes [because] these processes are largely top-down and rigid, lacking adequate mechanisms (such as cross-sector policies and structures) to ensure inclusion.”\textsuperscript{45} Hence, social barriers to becoming engaged with disaster management make the process extremely difficult and inaccessible to people with low capacity, mental, or psychological disabilities, preventing disabled people from ensuring their own survival.

Thus, the following section will discuss the benefits of the international framework on disabled rights, as well as how the history of disabled resilience and adaptation can prove beneficial to surviving climate change.

\textit{Resilience and Adaptation}

\textsuperscript{42} Ibid, 22.
\textsuperscript{44} Gutnik and Roth, 29.
\textsuperscript{45} Calgaro, 323.
Vulnerability is often inherently linked with resilience and adaptation because they are some of the predominant coping mechanisms to vulnerability. Geographers and development professors Wisner et al. define resilience as “the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard.” Unfortunately, there is not significant research on disabled resilience, likely because of the focus on disabled disempowerment in academia and society at-large due to the sheer number of barriers disabled people face. Disability studies professor Gregor Wolbrin defines adaptation as “refer[ring] to a process, action or outcome in a system (household, community, group, sector, region, country) in order for that system to better cope with, manage or adjust to some changing condition, stress, hazard, risk or opportunity. Adaptation can encompass [international,] national or regional strategies as well as practical steps taken at the community level or by individuals.”

Individual approaches to adaptation can be critical to survival and disability empowerment. For example, a systematic review conducted by health researchers Cadeyrn Gaskin et al. about individual strategies to climate resilience concluded that disabled people with formal education, financial and social “support from mainstream organizations, disability organizations, family, and friends” and emergency-preparedness coped better with climate change-related natural disasters. Thus, governments, social networks, and multilateral and humanitarian organizations should invest in these areas. Additionally, most published research about disabled resilience and climate change focuses on multilateral or international strategies.

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46 Wisner et al., in Marwa Daoudy, “Rethinking the Climate-Conflict Nexus: A Human-Environmental-Climate Security Approach,” Global Environmental Politics 21, no. 3 (2021): 8.
47 Gaskin et al., 801.
In the 21st century, there has been an increase in disability laws on the international level. The most notable piece of disability-rights legislation is the 2008 UN Convention on the Rights of Persons with Disabilities (UNCRPD). With respect to climate change, Article eleven of the Convention applies specifically to disabled people in situations of risk and humanitarian emergencies, stating that “parties shall take, in accordance with their obligations under international law, including international humanitarian law and international human rights law, all necessary measures to ensure the protection and safety of persons with disabilities in situations of armed conflict, humanitarian emergencies and the occurrence of natural disaster.”

Thus, there is a non-binding but customary obligation to protect disabled people in the event of climate change emergencies. Furthermore, the 2015-2030 Sendai Framework for Disaster Risk Reduction has expanded upon the UNCRPD to valorize the vulnerabilities and assets of disabled people; “the Sendai Framework recognizes that not only are women and disabled people disproportionately affected by disasters, but – crucially – that their knowledge and leadership skills are essential for building resilient, inclusive and equitable societies.” The Sendai Framework then calls for the inclusion of disabled individuals in ensuring climate resilience.

Despite the existence of all these laws, there is a disconnect between disability rights-based laws and disaster risk policies and practices, so disabled individuals continue to be erased and not included in mainstream policymaking. The next section will compare the existing literature and draw from especially primary sources to examine the cases of disabled

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49 Gutnik and Roth, 40.
50 Ibid, 322.
vulnerability and adaptation in Hurricane Katrina in the United States and Typhoon Haiyan in the Philippines.

**Case Studies on the United States and the Philippines**

**United States: Hurricane Katrina**

Hurricane Katrina was a Category 5 Hurricane that caused significant damage to New Orleans and the surrounding areas in August 2005. Hurricane Katrina demonstrated how disabled people, especially people of color, were seen as inferior because there was a complete silence on their treatment and preparedness in the case of emergencies. Thus, Hurricane Katrina resulted in the intensification of vulnerabilities for most minority communities in New Orleans. Hurricane Katrina is relevant to the context of climate change because studies have shown that the hurricane and flood damage would have been less dire if the sea level had been lower like in similar years.\(^5\) The consequences of the hurricane were worsened by political mismanagement and neglect. To understand the impact of Hurricane Katrina on the disabled community, it is necessary to have a baseline assessment and understand the previous conditions of New Orleans before the hurricane.

Historically, New Orleans has treated minorities as inferior, relying on the exploitation of minorities through persecuting indigenous and Black people in the Trail of Tears and slavery, even at the expense of the land. The dependence on the fertile land through slavery and sharecropping made the land sink, so a levee system was built in 1936 to prevent.\(^5\) The levees were rebuilt in the 1970s and 1980s, but the government considered it too expensive to make it stand up to Category 4 hurricanes, so they made it safe enough only for a Category 3 Hurricane,


\(^5\) Ibid, 152.
let alone for the Category 5 level of Hurricane Katrina.\textsuperscript{53} Hence, the government’s choice of cost over emergency preparedness contributed to the deaths and injuries of many New Orleans’ residents. Before Hurricane Katrina, New Orleans already hosted many types of marginalized groups: “67.3 percent of the population was African American, 50 percent was below the poverty line, and 23 percent had some type of disability.”\textsuperscript{54} There was a high prevalence of poverty and disabilities as well because of the government’s culpability in economic and health inequality. Racial and ethnic communities in New Orleans were historically located in hazardous areas which increased the rate of asthma and other disabilities, especially from lead poisoning.\textsuperscript{55} While the national average of adults living in rental property is 31%, 51% of pre-Katrina New Orleans residents lived in rental property as a result of redlining which was ill-equipped to deal with natural disasters.\textsuperscript{56} Thus, many historically marginalized groups already experienced worse living conditions in New Orleans because they were not considered as human as white, able-bodied, middle- and upper-class individuals through entrenched physical and economic inequality.

Therefore, the hurricane continued the legacy of marginalization by predominantly striking minority groups who had unstable housing to deal with a Category 5 hurricane. 1,464 people died during Katrina, many of them older, disabled, and Black: “while the pre-Katrina population over the age of 60 was only 16%, nearly 75% of the people who died were over 60, and Black individuals were over-represented in each age category.”\textsuperscript{57} Therefore, Hurricane

\textsuperscript{53} Ibid, 153.
\textsuperscript{56} Ibid, 21.
\textsuperscript{57} Ibid, 20-21.
Katrina often worsened inequality based on age and race, especially because Black individuals were often renters. During this period, 183,000 housing units were badly damaged or destroyed, mostly rental properties, so predominantly Black renters often experienced extensive damage to their properties and economic recovery.\(^{58}\) Furthermore, the Road Home housing recovery program was the largest in history, but because white owned property had higher appraisal values, white people received higher buyouts.\(^{59}\) Due to the lack of funds for economic recovery provided to Black people, one in three Black residents have not returned to the city.\(^{60}\) Older and disabled Black people and renters experienced serious economic and health vulnerabilities but they did not receive the tools for economic adaptation to continue to live in New Orleans.

Although 80% of people evacuated from New Orleans, many people with physical and mental chronic illnesses experienced significant migration challenges, constituting a majority of hospitalizations and receiving a majority of total medical care.\(^{61}\) Hurricane Katrina resulted in the largest interstate migration of citizens since the Dust Bowl, where 27,000 people evacuated from the Superdome in New Orleans to the Astrodome in Houston.\(^{62}\) Many people with chronic mental illnesses lacked disaster preparedness plans due to depression or lack of mental capacity, so many had no plans to evacuate to Houston.\(^{63}\) Additionally, people who were hard of sight or hearing were unable to obtain information because television stations and websites did not comply with regulations to provide accessible information, so not even one broadcast system was

\(^{58}\) Ibid, 21.
\(^{59}\) Taiwo, 156-157.
\(^{60}\) Ibid, 157.
\(^{63}\) David P. Eisenman et al, 33.
accessible. Deaf and blind people then did not know the extent of the dangers or their options for evacuating. For those who could make plans, while many chronically ill residents were physically unable to evacuate, others evacuated without their medications, which then exacerbated their illnesses. Thus, many experienced the decrease in their health during the recovery “as chronic illnesses may worsen with the lack of food and clean water, temperature extremes, and physical and mental stress.” Because often chronically ill people did not have the adaptation tools they needed to succeed with them during evacuation, the hurricane intensified their chronic illnesses. Evacuees to the Astrodome in Houston, Texas, were further disadvantaged by the lack of accessibility of evacuation transport, difficulty accessing restrooms, inability to see and hear, and other challenges. Because the Astrodome and its evacuation process compounded vulnerabilities for chronically ill people, 24.3% of the 21,673 health care visits during and following Hurricane Katrina were for chronic disease–related conditions and 28.7% of chronically ill people were hospitalized compared to 10.9% of able-bodied people. The pre-existing conditions of chronically ill people, combined with the lack of accessibility of the evacuation environment, resulted in the decline of their overall health. Evacuation was also made more difficult based on class as many disabled individuals from New Orleans did not have the money for accessible transportation, money to pay for gasoline and food, and accessible lodging for evacuation. Hurricane Katrina also hit two days before the end of the month payday and for Social Security, so many did not have the money to leave. Looking at the intersecting conditions...
axes of class and disability, many people did not have the economic or physically accessible tools which would empower them to migrate.

Disabled people also suffered dehumanizing treatment and insufficient resources when finding shelter. Many general shelters were inaccessible, and many also “refused to admit people with disabilities, in part because the American Red Cross had decided to reject disabled people, on the basis that they did not have enough supplies to care for them along with everyone else… even though general shelters were legally required to shelter people with disabilities.”71 Therefore, because of the ableist policies making them unable to enter general shelters, many disabled people received insufficient care and became separated from their families. This separation put them in more dangerous situations, especially “since people with disabilities have a higher probability of experiencing sexual violence than those without disabilities.”72 Thus, many people were forced to stay in special needs shelters where they were in isolation without accessible medical care, restrooms, and food.73 The toll of these shelter conditions likely amplified their psychological and physical vulnerabilities because they were completely neglected and at risk of violence.

Although the local and national government implemented some adaptation strategies to ensure accessibility for disabled people, these policies were largely insufficient. For example, in terms of mobility, there were some donations of wheelchairs, walkers, and crutches, which increased within the first few days.74 However, “despite instruction from trained staff, eager volunteers did not always comply with proper transfer techniques for the disabled.”75 While it

71 Walsh-Warder, 12.
72 Ibid, 12.
73 Ibid, 12.
74 DM Bloodworth et al., 771.
75 Ibid, 771.
was beneficial to provide disabled people with accessible mobility equipment, equipment without training does not result in disability empowerment and likely contributed to disabled vulnerability.

Despite the national policies of adaptation, disabled people have struggled to adapt with their pre-existing and new vulnerabilities following Hurricane Katrina due to the lack of accessible housing, support networks, and policymaking. During the recovery stage, disabled people were often unable to find accessible housing because “[Federal Emergency Management Agency] (FEMA) guidelines required that reconstructed houses should be raised three feet. These houses typically only had steps to reach the elevated house, not ramps, which made them inaccessible to many people with mobility impairments.”

Hence, the FEMA policies explicitly only built houses that many mobility-impaired disabled people could not live in. Furthermore, many disabled people struggled during the reconstruction process because they “lost caregivers, assistive devices, service animals, and government aid.”

Social, physical, and financial support systems are critical tools that create disability equity through interdependence. Without these, many people struggle to navigate a society created for able-bodied people. Since Hurricane Katrina, disabled people still have not been included in emergency planning or policymaking, and there are fewer marginalized people able to remain in the city. Only 30% of New Orleans residents returned, with many of them being able-bodied, white, higher income, etc., and their return has opened the way for gentrification.

Because able-bodied people have maintained the silence on disabled needs and leadership following the disaster, people do not have the coping strategies to change the situation, or even live in New Orleans.

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76 Walsh-Warder, 13.
77 Ibid, 13.
78 Ghenis.
The Philippines experiences similarly high rates of disability but little inclusion of disabled people in decision-making. In the case of Typhoon Haiyan, vulnerabilities became apparent such as that disabled people were often left to die, but there were also more measures of adaptation and resilience compared to the United States Hurricane Katrina case. The Typhoon Haiyan case will be analyzed below.

**The Philippines: Typhoon Haiyan**

**Vulnerabilities during Typhoon Haiyan**

The Philippines is the second highest country worldwide at risk of natural disasters, experiencing on average twenty tropical typhoons annually, with the rate and severity of typhoons increasing due to climate change.\(^79\) Therefore, Typhoon Haiyan was one of the strongest tropical cyclones ever recorded, striking the Philippines on November 8, 2013, with strong winds of over 300 km/h.\(^80\) Typhoon Haiyan also resulted in the escalating of vulnerabilities for disabled people in the Philippines; however, because of additional national coping strategies, surviving disabled people were able to gain some resilience after the typhoon.

Typhoon Haiyan led to the amplification of health and housing vulnerabilities across the Philippines, as 16 million people experienced the typhoon, in which 4 million people became displaced, 6,293 people died, 28,689 people were injured, and 1,061 people are still missing and possibly dead to this day.\(^81\) Additionally, due to the collectively traumatizing event, in a survey conducted by psychiatrists who served the population, after Typhoon Haiyan, 50% of the test subjects reported post-traumatic stress disorder.\(^82\) Thus, many people lost family members,

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\(^{80}\) Ibid, 1.

\(^{81}\) Ibid, 1.

homes, and also became physically or mentally disabled or experienced increased disability. The added challenges of being displaced and away from home environments where people had their resources for their individualized needs also reinforced feelings of helplessness. Reports differ widely on how many of those affected were disabled, as some reports state that 40% of those affected had a severe disability whereas others state that they believe it was closer to 11.9%.\textsuperscript{83}

Prior to the typhoon, disabled people in the Philippines already reported ableist treatment and silence around their needs through a lack of general resources and widespread discrimination.\textsuperscript{84} Disabled children also often experienced educational segregation through special needs classes, so while mainstream classes taught students about dealing with natural disasters, disabled students were often infantilized and not provided with the same quality of education.\textsuperscript{85} Disabled people often were then unaware of their rights as well.\textsuperscript{86} Disabled Filipinos were also unable to get medical diagnoses at times because the Filipino medical infrastructure remained unable to deal with all of the medical needs of able-bodied people, let alone disabled people. Most of the health services were in the capital Manila, and in the region most hit by the typhoon, there were only four psychiatrists and seven doctors who could address mental illnesses and psychological disabilities.\textsuperscript{87} Hence, disabled people could not even be empowered by knowledge or treatment for their conditions due to medical overcrowding and educational discrimination.

\textsuperscript{84} Morchen et al., 537.
\textsuperscript{85} Ha Nguyen et al., “Review of Gender Responsiveness and Disability-Inclusion in Disaster Risk Reduction in Asia and the Pacific,” \textit{UN Women} (2020): 43.
\textsuperscript{87} Budosan et al., 113.
During the disaster, like Hurricane Katrina, many of the most marginalized, especially poor disabled people, were the ones who suffered or even perished. According to the Filipino medical team Mylene Rose Benigno et al., The Philippines Development Plan 2011-16 states that disabled people are the poorest in the country with very low rates of education. A high number of disabled people struggling with class vulnerabilities already lived in the Philippines prior to the typhoon. During the typhoon, many poor disabled families helped their female family members and children evacuate to storm shelters while men stayed with their homes and belongings. Hence, most of the men of low-income families that included disabled family members died while women were left on their own, at risk of sexual and physical violence and trafficking and often lacking formal employment. However, approximately 64% of the people who died during the typhoon and immediately after were women because of high rates of sexual and physical violence, trafficking, and starvation. Additionally, even for those who did evacuate, many hard of hearing people struggled with the emergency response because interpreters were unable to communicate with them due to the dozens of signed languages in the Philippines as interpreters did not know sign language or only knew the standard sign language. Similar to New Orleans, disabled Filipinos already experienced high levels of poverty and mistreatment prior to the natural disaster due to structural violence. The patriarchal

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88 Cobley, 691.
90 Ibid, 218.
targeting of single women in disasters, as well as neglect of hard of hearing people, resulting in the death of many women and ableist treatment of many hard of hearing people.

The recovery and aftermath of Typhoon Haiyan also has exacerbated disabled vulnerabilities by destroying homes and health infrastructure. Even years after the cyclone, many disabled people are still living in an emergency shelter because their homes have not been rebuilt.\(^\text{93}\) Hence, many are unable to reestablish safe accessible homes where they can best cope and develop permanent social and economic lifestyles. Typhoon Haiyan further weakened the Filipino medical system, resulting in the deaths of many health workers, and many hospitals, physical therapy locations, and shops that sold assistive devices were completely destroyed.\(^\text{94}\) Some limited services restarted a few weeks after the typhoon, although by this time, many disabled people who needed care for their chronic conditions during the typhoon already had experienced the exacerbation of their health.\(^\text{95}\) Additionally, until the typhoon, there were no standard policies on funding for disability inclusion and mainstreaming.\(^\text{96}\) However, prior to then and since, numerous laws have been passed around disaster management and disability rights to contribute to disabled adaptation and resilience.

**Adaptation and Resilience**

The Filipino government and Filipino disabled people have collaborated through local and national strategies of adaptation and interdependence to survive before and since Typhoon Haiyan. However, there is still little to no enforcement of policies, and many policies worsen problems of dependence instead of reinforcing agency.

\(^\text{93}\) Morchen et al., 537.
\(^\text{95}\) Ibid, 54.
\(^\text{96}\) Nguyen et al., 41.
The Philippines has issued approximately six different laws prior to and since the typhoon to improve disabled survival. The most important Filipino disability law is the 1992 Magna Carta for Disabled Persons which regulates accessibility in the public and private sectors, mandates informal education, and offers discounts on medical products.\(^97\) While the Magna Carta does provide more parameters around accessibility, there is little to no enforcement, and it does not specifically mention disaster management.\(^98\) Additionally, the Magna Carta definition only looks at the medical factors of disability, neglecting the social vulnerabilities of disability represented in the social model.\(^99\) Hence, the Filipino government has not yet comprehensively recognized the societal challenges Filipino disabled people experience or included them in disaster response.

However, many Filipino civilians, both disabled and able-bodied, and the government collaborated to ensure mutual survival during Typhoon Haiyan. For example, “in many cases,... it was the practical support of relatives and neighbors that enabled participants to survive a storm.”\(^100\) Therefore, disabled people’s social support networks maintained their interdependence and allowed them to adapt to the typhoon. Additionally, Haiyan ultimately helped build up the infrastructure for disabled communities. During the typhoon, the Filipino government coordinated 150 foreign medical teams who implemented “20,000 consultations and more than 5000 surgeries, delivered over 500 tons of medical equipment and supplies, and trained [approximately 1500] health care workers in key areas” such as mental health.\(^101\) Thus, many disabled people were able to get the services they needed during the typhoon, yet because there

\(^{97}\) Cobley, 691.
\(^{98}\) Nguyen et al., 41.
\(^{99}\) Cobley, 691.
\(^{100}\) Ibid, 694.
\(^{101}\) McPherson et al., 1.
were approximately 300,000 poor disabled people in the typhoon zone,\textsuperscript{102} it was likely still insufficient.

Even after the typhoon, the local and national government executed several accommodations for the health sector and future disasters. The Filipino Federal Department of Rehabilitation published “\textit{A Directory of Health, Rehabilitation and Disability Services}” with multi-stakeholder recommendations for how to advocate for disabled people in the health field and ensure they are being accommodated.\textsuperscript{103} Health staff also received training on how to improve disabled resilience. Although it is inspiring that the government wanted health workers to better respect and accommodate, there have been no studies of its impact, and it is unclear whether the directory and training were developed and implemented by disabled individuals or organizations. Furthermore, “five months post-Haiyan, the Filipino government created a Department of Rehabilitation Medicine that increased the coverage of rehabilitation services to include not only physical therapy but also psychiatric consultations, occupational therapy sessions, and provision of prostheses and orthoses…. The number of patients receiving rehabilitation in the regional hospital grew from 533 patients per year before Haiyan to 1547 in 2014…. Expansion of services in the region [also] helped decentralize specialized disability services that were previously only available in Manila and Cebu.”\textsuperscript{104} Thus, after the complete destruction of health infrastructure, rehabilitation services nearly tripled, became more varied, and spread out beyond the capital, giving disabled people outside of urban areas more coping strategies to deal with their disabilities on a regular basis. The city of Tacloban which was hit heavily by the typhoon also developed an accessible early warning system with flags and audio

\textsuperscript{102} Benigno et al., 4.
\textsuperscript{103} Benigno et al., 56-57.
\textsuperscript{104} Ibid., 56-58.
announcements for visually and hearing-impaired Filipinos, “new sign-language gestures for words like typhoon, storm surge, and signal numbers in communities where these terms do not already exist,... [as well as] adding closed captioning to television broadcasts… to minimize the potential harm of a weather-related disaster for the deaf.”\textsuperscript{105} Hence, the national infrastructure following Typhoon Haiyan expanded the amount of health adaptation strategies through additional resources, and local strategies were implemented to prevent the neglect of hard of sight and hard of hearing people in future disasters.

Much of this national infrastructure was built because of the advocacy and resilience of the Philippines’ extremely active local civil society organizations.\textsuperscript{106} One such organization, Simon of Cyrene, is a local civil society organization made up of and led by disabled Filipinos that has been active in the Bicol region of the Philippines since 1982. Simon of Cyrene also “successfully advocated for the representation of people with disabilities in municipal [disaster risk reduction and management] DRRM councils, leading to disability-inclusive DRR activities and evacuation procedures.”\textsuperscript{107} Simon of Cyrene is a great example of the benefits of disability inclusion as they have built up disabled capacity and leadership in disaster management nationwide.

In contrast, the activities of international organizations such as HI have occurred with mixed results. HI instated a cash transfer program in the impacted region in the Philippines with 900 recipients, of whom approximately 100 were disabled or the family member of a disabled person receiving money on their behalf.\textsuperscript{108} This program accommodated disabled people by giving them contextually appropriate, meaningful jobs based on their abilities and strengths,

\textsuperscript{105} Strother.
\textsuperscript{106} Eadie et al., 224.
\textsuperscript{107} Nguyen et al., 42.
\textsuperscript{108} Cobley, 695.
which created a sense of economic capital and dignity among disabled workers.\textsuperscript{109} While HI’s program localized their responses and focused on building the already existing assets of disabled people, other programs often did not examine the economic situations of the region and created situations of dependence. For example, the results of most programs disrupted the economic competition in the post-disaster period as they would give free cash or limited jobs, creating a dependency mentality because the money would end once the organizations left.\textsuperscript{110} Hence, people would no longer have the same economic opportunities, and these projects proved unstable to continue without foreign funding. To improve gender-inclusion, a few cash aid projects also provided money to disabled women; however, much of the money went to women who had never run businesses before, so this led to an increase in competition that put others out of business.\textsuperscript{111} Therefore, to improve strategies for resilience and adaptation, international organizations need to follow HI’s model by contextualizing projects to the geographical and economic market needs of an area as well as the individual strengths and weaknesses of disabled people, while also ensuring the projects are sustainable and do not reproduce dependency.

While the situation of the Philippines after Typhoon Haiyan was better than New Orleans post-Hurricane Katrina, there is still a lot of room to improve to create disabled adaptation and resilience so disabled people receive the equity they need to receive equitable treatment to other groups. The section below will begin with generalized recommendations for disabled empowerment in climate change from existing literature and then contextualize within based on the two case studies.

\textbf{Recommendations}

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\textsuperscript{109} Ibid, 698.
\textsuperscript{110} Eadie et al., 221.
\textsuperscript{111} Ibid, 222-223.
These recommendations will build from the general recommendations suggested across the existing literature, with specific references of how to tailor to the United States and the Philippines.

Looking at an individual level, it is necessary that disabled people worldwide, including in the United States and the Philippines, work with their medical and social support teams to write a plan in the event of an emergency.\footnote{DM Bloodworth et al., 772.} Disabled people should have a physical preparedness kit with a brief medical history and the written names and dosages of their medications, with early refills when disasters can be predicted, special supplies such as any required dressings and ostomy or catheter site supplies, and a list of any equipment to grab if possible, such as a wheelchair, crutches, insulin, etc.\footnote{Ibid., 772.} Because disabled people have the most awareness of their own needs, they can work with their support networks to ensure they have all necessary resources to maximize their resilience in climate-related disasters.

On a more collective level, the most important recommendation is including disabled people in decision-making processes surrounding climate change, natural disasters, and consequent migration.\footnote{Cobley, 689.} As Calgaro contends, “Disabled people are the experts on their own lives, so they are best placed to inform and shape disaster risk reduction and response plans that are inclusionary and in compliance with UNCRPD and the Sendai Framework.”\footnote{Calgaro, 323.} Given disabled people’s histories of and skills at adapting to their own realities and crises, aid responses should include disabled people and put them in leadership positions. For example, the United States could work with disabled individuals and the disabled NGO Sins Invalid whereas the Philippines could work with individuals and the NGO Simon of Cyrene. Because disability

\footnote{DM Bloodworth et al., 772.}
\footnote{Ibid., 772.}
\footnote{Cobley, 689.}
\footnote{Calgaro, 323.}
survival relies upon interdependence with their social networks, decision-making should also encourage coordination with family, friend, and caregiver networks.\textsuperscript{116} HI also suggests the “‘twin-track approach’” to disability participation which “promotes both ‘specialist disability initiatives’ designed to include and empower disabled people and the ‘mainstreaming’ of disability inclusion into all policies, strategies, and activities.”\textsuperscript{117} Therefore, this recommendation could apply in the Philippines and the United States to work within existing institutional processes and structures and create new landscapes of power collectively.

Following the twin-track model, many scholars and practitioners suggest ‘specialist disability initiatives.’ For example, Gutnik and Roth suggest national disability laws for national disasters and climate change as well as more local projects to mitigate climate change including people with disabilities.\textsuperscript{118} In the Philippines, there had been no comprehensive local DRRM plans before Typhoon Haiyan, especially that included disabled people.\textsuperscript{119} However, after the typhoon, the national government, the city of Tacloban, and the municipality of Tanauan implemented recovery roadmaps or plans for future disasters.\textsuperscript{120} Furthermore, disability inclusion can also adapt from the work done to improve gender equity and participation in climate change decision-making. For example, the UN Framework Convention on Climate Change has created the position of “‘gender focal points’, people who assist in gender-related decisions about the climate.”\textsuperscript{121} Disability focal points could be a specialist disability initiative in the United States, Philippines, and other countries which encourage disabled expertise. Similarly, the Philippines

\textsuperscript{116} Ghenis.
\textsuperscript{117} Lewis and Ballard, 7.
\textsuperscript{118} Gutnik and Roth, 51.
\textsuperscript{119} Eadie et al., 221.
\textsuperscript{120} Ibid, 221.
has a wide range of gender specialist initiatives that they could remodel to focus on disabilities, such as the Philippines Commission on Women which is a primary policymaking body on gender equality that also participated in the National Disaster Risk Reduction and Management Council. Thus, a similar Philippines Commission on Women could be created to also participate in the council and pioneer disability equality.

Another disability specialist initiative that could be implemented in any country would be creating a registry of disabled people for responders to seek out these individuals, especially those with multiple marginalizations, such as low-income, rural, incarcerated, Black, queer, etc. During disasters, these individuals should receive additional care, especially those who need daily medical care, or they risk death, such as those who need insulin or go under dialysis, because they may die if they do not receive chronic treatment, even and especially in disasters. However, it is important that any registry created would not be used for nefarious purposes or for surveillance of marginalized populations.

Concerning disability ‘mainstreaming’ initiatives, all climate funds should include disabled people in emergency and development programs in areas affected by changing climate, and disabled people and their families should be participants and leaders in water, sanitation, and hygiene (WASH), food production, energy programs, etc. There must be an intersectional approach to mainstreaming as “Agencies which address the needs of all other intersecting vulnerable populations must also address their constituents with disabilities.” Hence, disabled people will also be addressed in ways that recognize their other forms of identity. Given the

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122 Nguyen et al., 41.
124 Lewis and Ballard, 8.
125 Saxton and Ghenis, 22.
general lack of knowledge about disability inclusion, mainstreaming disability inclusion into climate change policymaking requires “educat[ing] funders about disability inclusion as a fundamental element of all of their projects, but under the guidance of disability inclusion experts” because often disability inclusion education is conducted by able-bodied people who already work in organizations which prevents disability partnerships and economic empowerment. By educating people about disabled people in an empowering way, funders will hopefully include more disabled people and be able to develop projects that echo the resilience of disabled people. Scholars Gutnik and Roth also claim that “vulnerability and capacity assessments must include information about people with disabilities…. In order to accomplish this, disability must be included in any baseline assessments in addition to disaggregating the data.” By collecting more knowledge about the disabled community and including them in analyses, there will be more knowledge about their needs. However, it is also important that the baseline data about disabled people is not used by any powerful actors to target or hurt them.

Another principal recommendation is enhancing individual and community resilience by reinforcing physical, political, and economic structures to ensure disability empowerment. Lewis and Ballard advocate that “existing emergency infrastructure should be assessed for accessibility while reconstruction of public buildings, housing, as well as water and sanitation points should address universal accessibility standards.” Improved infrastructure would improve resilience because disabled people would be able to move around all buildings which would help them not

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127 Gutnik and Roth, 47.
128 Lewis and Ballard, 8.
stay in disaster settings for prolonged periods. Furthermore, infrastructure should include, but not be limited to, “fully accessible housing, public transit, or public spaces (including businesses),... medical support systems - [such as] functioning hospitals, medication provisions,... financial support such as Social Security, health insurance from Medicaid-type programs, disability-focused employment support, and personal attendant agencies (i.e. In-Home Supportive Services).”  

Hence, by creating a whole-of-society approach to disability accessibility, resilience can address the multidimensional political, economic, physical, and social inequalities disabled individuals face.

Additionally, the response to disabled individuals within the climate change movements needs to be intersectional and relies upon challenging the oppressive forces of capitalism, poverty, and racism that worsen the social barriers to disabled people. In the case of New Orleans, it is necessary that activist groups and governments challenge gentrification, recognize the legacy of slavery and colonialism, create affordable housing, heavily strengthening the levees, and more. Philosophy and African studies professor Olúfẹ́mi O Táíwò examines climate change generally and in New Orleans from a race and indigenous lens, arguing that “Climate change will compound and lock in the distributional injustices we’ve inherited from history or even reverse gains towards justice, ushering in ‘climate apartheid.”

Conclusion

Climate change has demonstrated that governments have increased the vulnerability of disabled people in the event of natural disasters, specifically Hurricane Katrina in the United States and Typhoon Haiyan in the Philippines. Thus far, disabled people have not yet been treated as equal humans to able-bodied people in natural disasters, and the American and Filipino

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129 Ghenis.
130 Táíwò, 162.
governments have been silent and neglected their needs. However, recommendations such as creating specialist disability initiatives and mainstreaming disability and recognizing the intersections of racial violence can possibly help to make climate change an opportunity for adaptation, resilience, and increased racial and disabled equity.

Furthermore, there is little to no research on the intersection between climate change, migration, and disability, especially recognizing the other nuances of identity, such as class and gender, that can cause additional vulnerability or resilience. The research that has been created often focuses on disabled vulnerability, so more research on disabled resilience and adaptation can create a more empowering portrayal of disabled people. Most governments also don’t have comprehensive records about the numbers and conditions of disabled people in their countries or may have poor archives and recordkeeping due to histories of conflict or inefficient bureaucracies, so additional research is necessary to create a disability baseline and assess how many people need support and what kinds of support. More research about the impacts of climate change and climate change-focused migration by disabled people can also contribute to changing the balance of power from predominantly able-bodied people writing about this topic to mostly disabled people, who also live through the disasters. Additionally, articles by more disabled people can help to provide more specification on certain disabilities as most of the literature focuses on disabilities at-large without narrowing to more specific conditions, so more specification can help to best provide individualized resources. There are also few local, regional, and national case studies about the intersection between climate change and disabled people in localized contexts, so more case studies that recognize the cultural and geographical nuances can help work towards better emergency preparedness and disability understanding. The author attempted to develop additional case studies on Morocco and Syria. However, the
research on disability and climate change-migration in these two cases was insufficient, with
more research either looking at the fate of disabled people in general in these countries or
conflict-related migration and disabled people, as seen in the case of Syria. As climate change
continues to intensify, this kind of research and the recommendations above will become
increasingly necessary to ensure disabled survival and resilience.