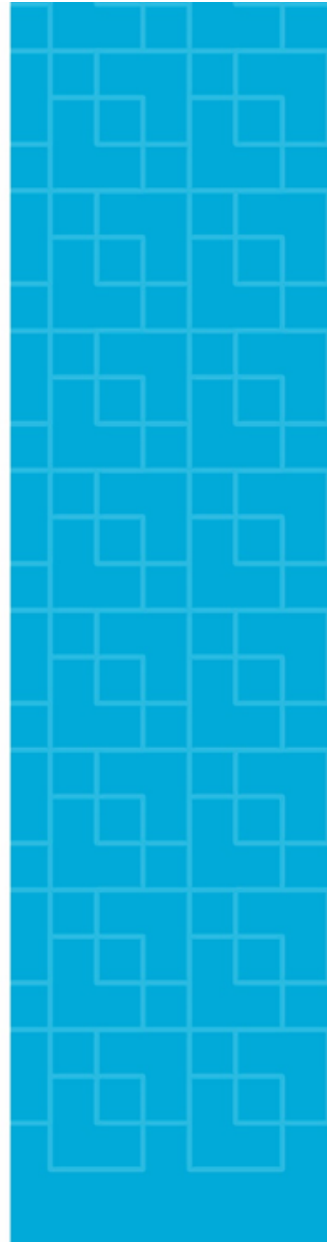**Master's Thesis 2021  30 ECTS**
LANDSAM

# The Effects of Policies and Social Factors on Climate Refugees Rights'

Samantha  Meneses

International Environmental Studies

## Acknowledgement

I wish to show my gratitude to my mom, dad, and rest of my family who supported me through this process by encouraging me to write every day, listening and supporting my topic. I would like to thank my supervisor for guiding me and to everyone else for supporting my master thesis journey.

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**Acronym Index**

**ADA-The American with Disabilities Act**

**ASTHO- Association of State and Territorial Health Officials**

**CPBRS-Coordinated Place-Based Recovery Support**

**CRCL- Civil Rights and Civil Liberties**

**IDPs-Internally Displaced People**

**IOM- International for Organization Migration**

**NDRF-National Disaster Recovery Framework**

**NIMS- The National Incident Management System**

**NMF-National Mitigation Framework**

**NRF- National Response Framework**

## Abstract

Certain social factors such as citizenship, inequality (ability for rights), socioeconomic factors and covid-19 have effects on climate refugees' rights. I will be focusing on two cases from Puerto Rico and the Florida/Caribbean as a comparative study. My analysis will encompass if there are any major differences between them regarding policies, rights, in the recovery process. I have chosen to focus on these two because of how the climate disasters were handled and shaped inequalities across contexts. The sites, through events, show how the way refugee rights are implemented differently across the contexts and the events that interact with inequality. My research strategy is qualitative research and data collection includes collecting secondary data by gathering media and journal articles, conducting semi-structured interviews, national frameworks and policies. From the interviews that have been conducted, I analyzed the interviews by identifying particular themes. My results expressed that Hurricane Maria had more inequalities within each subgroup of elderly, children/young adults, gender, etc. than hurricane Irma. The frameworks are not exclusive for these subgroups and there needs to be more inclusive policies for future generations.

**Ch.1 Introduction**

  The debate of "climate refugees" is vital for future stakeholders, policymakers, and other governing actors as it affects policy-making decisions, access to resources, and the impact it will have on future generations. "'Climate Refugees' are "migrants who move due to natural disasters and climate change" (J. Apap 2018). The term "climate change" refers to, "A change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods" (UNFCCC 2011). It is important to emphasize the relationship between climate change and "climate refugees" as future projections show there will be an increase of climate refugees. "Professor Myers argues, "there could be as many as 200 million people overtaken by disruptions of monsoon systems and other rainfall regimes, by droughts of unprecedented severity and duration, and by sea-level rise and coastal flooding" (O. Brown 2008). There are contested discourses about climate refugees. As professor Myers states that there could be over 200 million climate refugees in the near future due to climate change. While there are other discourses that see "climate refugees" as a security issue and not as important as political refugees. This is further discussed in the climate discourse concept section. This relates to the inequality of refugee rights because of not having the same resources or aid as other refugees in the recovery process of disasters which can violate human rights laws.

  Recovery efforts for a disaster is hard enough especially for climate refugees and when global pandemic hits making the recovery efforts more difficult. In 2019, the coronavirus (Covid-19) hit Florida and Puerto Rico and presently still an issue. The coronavirus was first detected in Wuhan China in December 2019, however, it spread rapidly all over the world within months. Covid-19 is a deadly repository infection that spreads within communities at a fast rate. As, previously mentioned this can contribute to many issues, such as the preparedness of the covid-19, and making the recovery efforts harder. In the national frameworks for a disaster there are no specific section referring what to do in case there was a pandemic or an epidemic. The problem is that in the area of Puerto Rico and parts of Florida and Caribbean the efforts are slower and it is difficult to provide the basic necessities for communities as borders are closed. "Due to their undetermined status, climate refugees would be unable to access public healthcare facilities, which was already stressed during the pandemic. Since masks, sanitizers and PPE kits are in shortage due to acute demand, climate refugees would face difficulty in procuring them without the necessary documentation"

(M. Koshy Mammen 2020). The coronavirus has directly and indirectly affected the "climate refugees" and their rights from hurricane Maria and hurricane Irma.

In this paper, I will be focusing on climate refugees from hurricane Maria in Puerto Rico and hurricane Irma in the Florida/ Caribbean islands area. I picked these two hurricanes as they happened within the same year in 2017. It is relevant to analyze these storms as they continue to have lasting effects years later. I will be doing a comparative study between these two case studies of hurricanes in Puerto Rico and the Florida area. I wish to examine how certain social factors such as citizenship, inequality (ability for rights), socioeconomic factors and covid-19 have on climate refugees' rights. I will explore these two cases to analyze if there are any major differences between them regarding policies, rights, in the recovery process.  In order to address these questions, I analyze relevant policy documents such as those pertaining to refugee issues, civil rights acts, national frameworks, and interview data with informants such as Non-Governmental Organizations (NGSOs) and other organizations that may work with climate refugees. Including those impacted by hurricanes Maria and Irma and internationally. The increase of climate refugees need to be an ongoing discussion between different governing actors and policymakers as it can have a global impact for present and future generations.

## Ch.2 Background about Sites

Table 1, and the section below focuses on socio-economic features of hurricane Maria in Puerto Rico and hurricane Irma in Florida Keys/Caribbean areas. This includes what day and year the hurricane hit, the death toll and damages from the hurricanes, population numbers in each of the sites, and the income of the median household of each site/poverty level, and the main spoken language of each of the sites.

**Table 1: Background of socio-economic features of hurricane Maria and hurricane Irma**

| Hurricane Maria/ Puerto Rico | Hurricane Irma/ Florida Keys/Caribbean |
|---|---|
| Date/Year: Hurricane Maria hit Puerto Rico on September 16,  2017. Category: High 4 | Date/Year: Hurricane Irma hit the Florida Keys on September 6, 2017. Category: 5 |
| Death toll/Damages: 65 known deaths; but the exact number of deaths are unknown. Property damage, flooding and falling trees. | Death toll/Damages: 100 deaths; and the damages to infrastructure, homelessness, and food supply shortage. |
| Population: 3.194 million (2019) | Population: 21.48 million (2019) |

| | |
|---|---|
| Income: Median household income (2019): 20,539. Poverty level: 43.5% | Income: Median household income (2019): 55,660. Poverty level: 12.7% |
| Language: First- Spanish, Second- English | Language: First-English, Second- Spanish |

## Ch 2.1 Background of Hurricane Maria: Puerto Rico

Puerto Rico is located in the Caribbean, in between the Caribbean Sea and the North Atlantic. It is considered "officially an unincorporated territory of the United States" (M.Rivera 2021). The hurricane seasons for Puerto Rico is between June 1 to November 30. On September 16, 2017, Hurricane Maria happened off the coast of the Virgin Islands (Caribbean) and Puerto Rico and it was a high category 4 hurricane. There was significant agricultural damage, and property damage due to flooding and falling of trees due to high winds. "The NOAA estimate of damage in Puerto Rico and the U.S. Virgin Islands due to Maria is 90 billion dollars" (R. Pasch, et al. A. Penny, and R. Berg 2019). There were many households that had to live without power for almost a year after the hurricane hit. When the electricity came back there was only just over half of the island's electricity to come back on. "The death toll is highly uncertain, and the official number stands at 65, which includes an unknown number of indirect deaths"(R. Pasch, et al. A. Penny, and R. Berg 2019). However, there may be more deaths that have not been recorded due to indirect deaths from the hurricane and no official government review that has been collected. "At the end of 2017, nearly half of Puerto Rico's residents were still without power, and by the end of January 2018, electricity had been restored to about 65% of the island" (R. Pasch, et al. A. Penny, and R. Berg 2019). The impacts of hurricane Maria are still being felt years later after 4 years. For example, there still is infrastructure that has not been rebuilt and with the pandemic relief efforts are harder to provide as borders are closed.

## Ch2.2 Background of Hurricane Irma: Florida/Caribbean

Hurricane Irma was a category 5 disaster that happened on September 6, 2017, off the coast of Florida and the Caribbean. The damage of Hurricane Irma was detrimental to the population, there was over 100 deaths, and "Florida ordered 6.5 million people to evacuate and there were 77,000 people in 450 shelters."(K. Amadeo 2020). There was close to 100% of damages of buildings and over 50% of the community in Barbuda in homelessness. Hurricane Irma created damage to food supply by "threatening 1.2 billion in Florida's produce crop" (K. Amadeo 2020). Which can lead to shortage of food supply and create more poverty. There was

damage to infrastructure on the islands and in Florida. Due to previous hurricanes, Florida's homeowners insurance doubled the national average because of the hurricane's severity. This storm is the "5th most costly storm at 50 billion USD" (K. Amadeo 2020).  The impact today of hurricane Irma, is not as severe as hurricane Maria but is still being felt today with some recovery efforts being delayed due to the pandemic. The urgency to get people vaccinated as soon as possible to start restoring infrastructure and children being able Going back to school is a top priority in this area.

## Ch. 3 Conceptual Framework

## Ch 3.1 Climate refugees

Climate change creates many types of "climate refugees" as they are not all the same. According to European parliament, 'Climate Refugees' are "migrants who move due to natural disasters and climate change (J. Apap 2018). Climate refugees are increasingly affected by this due to climate-related natural disasters. There could be climate refugees from deserts or areas that are much colder. This is important to emphasize because different disasters need different recovery plans to recover. For example, according to (National Geographic Society 2019), "In a desert, that may mean that higher than average temperatures can produce more severe and prolonged droughts and more difficult to grow crops." While in colder climates and Ice glaciers melting there is more potential for sea levels to rise leading to more flooding and erosion.

There is no specific international law that recognizes climate refugees as a "refugee" which means not having the same rights as a political refugee. This is because they do not fit the criteria for a refugee, "A "refugee" is defined as a person who has crossed an international border, owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion" (1951 Convention relating to the Status of Refugees, UNHCR). While "climate refugees" may choose to leave their homes due to numerous factors including an environmental impact and not forced to leave  in the fear of being prosecuted or harmed. "Regardless, the term "climate refugee" is not endorsed by UNHCR, and it is more accurate to refer to "persons displaced in the context of disasters and climate change" (UNHCR).  Climate refugees can be displaced within their own country, while others may seek asylum in other countries depending on the severity of the disaster. Displacement happens within a country's own borders from climate change and may have no potential threat to their well-being. The recognition of

Climate refugees is key because it determines how "climate refugees" are assisted and to what extent. In particular, access to aid for the vulnerable communities. " Many poorer countries, however, are unlikely to be able to initiate sufficient adaptation programs, and climate-induced migration might be the only option for many communities in the South" (F. Biermann and I.Boas 2010). The minority and more vulnerable "climate refugees" will need to have more sufficient plans and policies in place.

I use the term "climate refugees" loosely within my thesis because after much research it is hard to determine exactly why displace people move and could be multiple factors, including environmental impacts. However, environmental impacts are an important attribute because the impact of natural disaster can be a main reason for why they seek shelter somewhere else other than their homeland. Climate refugees that are from hurricane Maria are being deeply impacted from this natural disaster. They are having hard time getting the resources they need such as health care, funding of programs to help rebuild infrastructure, job opportunities, etc. The "climate refugees" are moving to the mainland of the United States because of the physical, social, and economic effects from the hurricane. "Meléndez projected that Maria's damage to Puerto Rico's physical, social and economic fabric could result in as many as 200,000 migrants to the U.S. mainland over the next 12 months"(D. Cusick, A. Alton 2017). In regards, to hurricane Irma "climate refugees" were present but the number is far fewer compared to hurricane Maria. A lot of these people had to leave their homes and did not know when they would return because of the power outages, and damage to infrastructure. This concept is relevant to my paper as there is comparison between the "climate refugees" of hurricane Maria and hurricane Irma will be further discussed in the analysis section.


## Ch 3.2 Human Rights Theory/Citizenship

There is an International Human Rights Law that entitles human to have protected rights; regardless of sex, race, etc. The Civil Right law states "Federal laws prohibit discrimination in programs and activities receiving federal aid to ensure that actions, both intentional and unintentional, do not exclude anyone based on race, color, national origin (including limited English proficiency), disability, sex, religion, economic status, or familial status in the preparation, response, or recovery phases of emergency and disaster management" (DHS 2021). The United State justice department put out a document called the" _Guidance to State and Local Governments and Other Federally Assisted Recipients Engaged in Emergency Preparedness, Response, Mitigation, and Recovery Activities on Compliance with Title VI of the Civil Rights Act of 1964"._ This document is important because these guidelines were implemented after responses from previous disasters and natural disasters are continuously occurring, it is important to have equality during the preparation, response,

and the recovery phase of disaster management. In the case of the two hurricanes, the National Response Framework and the National Disaster Response Framework are essential to exhibit the equality of rights. "Both Frameworks highlight the importance of complying with the nondiscrimination requirements of civil rights statutes, addressing the needs of the whole community, and ensuring equal opportunity to access recovery efforts" (U.S. Department Of Justice). These guiding principles are in place to ensure the compliance with civil rights obligations. The principles include Reaffirm Commitment to Nondiscrimination Protections, Engage with and Include Diverse Racial, Ethnic, and Limited English Proficient Populations, Provide Meaningful Access to LEP Individuals, Include Immigrant Communities in Preparedness, Response, Mitigation, and Recovery Efforts, and collect and Analyze Data (U.S. D.O.J). As recovery efforts take place after a disaster it is vital to have these guiding principles to follow through as they are basic civil rights for any human-being. However, there is some evidence showing inequality in protecting climate refugees' rights.

## Ch 3.3 Inequality

There are many ways of people being unequal to each other, either socially or economically. In this context, I will be looking at socially, economically, politically, and geographically inequality. "Inequality —the state of not being equal, especially in status, rights, and opportunities" (H. Afonso, M. LaFleur and D. Alarcón, 2015). This is referring to the idea about communities that are not as financially stable and the concerns of how they are treated when it comes to distributing aid. While socially not having the same opportunities to get an education, health services, or job opportunities. The office of Civil Rights and Civil Liberties (CRCL)'s Andiscrimination group, tries to "ensure fair and equitable treatment of individual and guard against any discrimination" (DHS 2021).

The CRCL is important when it comes to environmental disasters as their goal is to try "ensure that civil rights and liberties are respected during development of emergency-related federal policies and procedures" (DHS2021). In the case of Puerto Rico, the inequality of receiving aid especially after Hurricane Maria was insufficient. "Not only has the pace of recovery been slow, but many of the most vulnerable households are now equally if not more exposed than before and many communities have been left out of recovery efforts" (A.Thomas 2018). In this case, there are some tendencies of inequality that are represented and that the most vulnerable communities have not been adequately assisted even though they have the right to be. "We found evidence that the public and civil society organizations are being left out of the Puerto Rican government's recovery plans, creating a risk that private and political interests will hold sway" (A.Thomas 2018). Even though Puerto Rico is known for being a US Territory there are still issues of inequality that are portrayed.

Another example, is the Jones Act (1917), which was created for the people of "Puerto Rico to collectively naturalize as U.S. citizens" (C. Venator-Santiago 2018). However, this is contradicting because Puerto Rico cannot vote in the presidential election even though they are considered to be "citizens of the United States, being a US citizen, there is a right to vote. "Puerto Ricans cannot vote for the U.S. president when they live in the territory, but they can when they reside in one of the 50 U.S. states or the District of Columbia. (C. Venator-Santiago 2018). This is an important concept because when it comes to the crisis in Puerto Rico there is inequality among their rights.

Even though hurricane Irma did not have the same inequality rates as hurricane Maria did, there was still some inequality that was present and both shared some other inequality aspects besides economically and socially. For example, the process of policy making are in the hands of political and governmental actors who may have not had the concept of what is really happening in that area, and it is more difficult to adjust to those type policies if they are not relevant. The concept of geographically inequality are areas that are more exposed compared to other areas in Florida. To elaborate, homes or buildings that are closer to the water or have poor infrastructure will be hit harder by the hurricane compared to houses that are farther away or able to afford infrastructure that can withstand the impacts of the storm. "Hurricanes are 'natural' in one sense, but human actions are inseparable from nature. Whether or not a hurricane becomes a disaster, and of what magnitude, depends on how prepared people and places are, and that in turn depends on access to resources" (L. Sealey-Huggins 2017).The access to resources, rebuilding of infrastructure, and the time it takes to recover from the storm depends on how prepared people are and where they are expressing the inequalities of geography. While in Florida, Hurricane Irma, inequality is not as prevalent. "Our results show that the federal government responded on a larger scale and much more quickly across measures of federal money and staffing to Hurricanes Harvey and Irma in Texas and Florida, compared with Hurricane Maria in Puerto Rico" (Willison, C.E., Singer, P.M., Creary, M.S. and Greer, S.L., 2019). There are more vulnerable people in Puerto Rico than in Florida, and the inequalities of politically, socially, economically, and geographically contribute to that.

## Ch 3.4 COVID-19 alters the rights of vulnerable groups

"Vulnerability in this context can be defined as the diminished capacity of an individual or group to anticipate, cope with, resist and recover from the impact of a natural or man-made hazard" (IFRC). Covid-19 alters the rights of vulnerable groups because these groups include the poorer communities, refugees, elderly etc. that face challenges such as being more exposed to covid-19, not having the same

access to health services, and facing adversity of racism, or intolerance. Since covid-19 prolongs to provide services and aid to these communities because of inequalities and the restrictions of borders it creates challenges. The challenge for the elderly community is the access to health services. "Older persons have a higher probability of severe symptoms, complications and death, especially those aged 80 or over" (WHO and United Nations 2020). Since the elderly community is more at risk of contracting the disease it is important to protect their rights and give them access to healthcare services. While "Migrants, refugees and IDPs are particularly vulnerable to stigma, xenophobia, hate speech and related intolerance" (United Nations 2020). These challenges hinder their rights to receive aid because of the fear of the unknown.

## Ch 3.5 Climate Refugee Discourse

The reality of the discourses on climate refugees is based on the different perspectives of how people see climate change. To explain, if political actors do not believe in the evidence of climate change, then "climate refugees" are not even considered within the decision-making process and adversely affect future generations. Most of the discourses on "climate refugees" are negative narratives. Since climate refugees do not have an official definition, political actors can argue that it is difficult to prove people are moving due to climate change. For example, "climate refugees" pose a 'security threat' to national and international borders. "The year 2007 witnessed growing concern about the threats posed by 'climate refugees' and 'climate conflict' to international security"( B. Hartmann 2010). This explains there is already a preconceived idea that "climate refugees" are a problem without any evidence. Although, a security threat can come from within the local communities of that state or country.

Another example is "climate refugees" are choosing to move instead of forcefully being moved from their homes and possibly belittling the definitions of refugees. This is giving climate refugees a bad name in terms of policies and helping them receive aid. "The label 'climate refugee,' like 'environmental refugee' before it, could further undermine the rights and protections of traditional refugees as defined by the 1951 U.N. Refugee Convention (UNHCR, 1951/1967)." The argument that "climate refugees" may undermine the rights and protection of refugees because of not being forcefully removed from their homeland and instead having the option to move. This term may hinder the importance of someone who is considered a "Climate refugee" as political actors do not have to provide any asylum or aid because the term is loosely defined and acknowledged. "Kibreab argues that the term was invented in part to 'depoliticize the causes of displacement' so that states would not have the obligation to provide asylum" (Kibreab, 1997, p. 21, cited in Saunders, 2000, p. 240).

Even though the narratives of climate discourses are mainly negative, the narrative/perspective of people who went through hurricane Irma and Maria consider themselves to be "climate refugees." In Puerto Rico, the label climate refugees is their main title as they seek assistance. "We are climate change refugees, and our collective stories serve as a cautionary tale that government officials need to hear" (A. M Torres Rivera 2018). The same narrative is implied for hurricane Irma. "I consider us climate refugees because we left the state that we loved to avoid storms that are getting more and more dangerous because the atmosphere and oceans are getting hotter – and our political leaders are doing very little to address the growing threat" (L.Aliheligi Phillips, 2020). The outside perspective is what creates the negative narratives as these influences do not have any idea of what people endure during these disasters. The necessity of establishing a positive discourse about "climate refugees" needs to be the forefront of policy making as it can influence future communities and their basic human needs.

## Ch 3.6 Adaptation Concept

The definition of adaptation is "a change that is made to a response in a new environment." For example, changes in behavior, strategies, and intervention that take advantage of social change or particular environment" (O'Brian 2020). There are many different types of adaptations that is associated with climate change and the different adaptation views and strategies that potentially affect the way the climate refugees adapt to climate change and future policies are created. "Depending on timing and intention, adaptation strategies may be reactive, passive, or anticipatory" (O'Brian 2020). One adaptation strategy is "Reactive adaptation which includes actions that are taken in response to the experienced impacts of climate shocks and stressors" (O'Brian 2020). While passive adaptation includes adjustments, resulting from changing environmental conditions but not intended to respond to climate change (O'Brian, 2020). Finally, anticipatory adaptation is preparing for actions and strategies for the future (O'Brian, 2020). There are adaptation strategies for hurricane Irma and hurricane Maria.

The Adaptation Technical Work Group (TWG), developed a framework for Florida's Climate Action Plan. The goal of this framework is to address each topic with goals and strategies. The objectives of each are advance science data and analysis for climate change, comprehensive planning, protection of ecosystems and biodiversity, Water Resource Management, Built Environment, Infrastructure and Community Protection, Economic Development, Insurance, Emergency Preparedness and Response, Human Health Concerns, Social Effects, Organizing State Government for the Long Haul, State Funding and Financing, Coordination with Other Regulatory and Standards Entities, and Education (Center for Climate Strategies, 2008).

This framework could be considered, anticipatory adaptation strategy because these objectives are anticipating for future actions. For example, objective: comprehensive planning, "Florida's local, state, and regional comprehensive plans should be amended based on the best available data, include goals, objectives, and policies that will prepare the state for adapting to the future impacts of climate change, such as SLR" (Center for Climate Strategies 2008). Based off of the information and data, policies will be anticipating for future climate change impacts and adapt accordingly. Another example is the human health concern, that should be considered when creating new plans and policies due to climate change and protecting human health. "Florida's health plan should incorporate considerations of climate change to protect the health of its citizens" (Center for Climate Strategies 2008).

For hurricane Maria, adaptation strategies were developed post hurricane, these strategies, can be called a reactive strategy because action has been taken in response in lieu of the experience of climate stressors. For example, "the Clinton Foundation has partnered with the Solar Foundation to create the Solar Saves Lives program to increase solar technology and energy use on the island" (C. Walsh-Russo 2018). This was due to the island losing power and experiencing a widespread blackout. Another adaptive strategy that is used is community based adaptive approaches and anticipatory strategy, many homes were insufficient because they lacked strong infrastructure. A strategy that is recommended to anticipate future storms are "weather-resistant infrastructure" from community-based initiatives. "Community-based housing groups, through the use of community land trusts, have organized to rebuild more durable and extreme weather–resistant infrastructure such as the use of storm-safe roofs" (C.Walsh-Russo, 2018). The use of multiple adaptation strategies can be seen throughout the recovery process and the importance of having different strategies as it can better prepare for future storms. Especially, if migration becomes a future adaptive strategy but would be very difficult moving thousands of people. Adaptation strategies should be taken into consideration when policy makers are creating mitigation and adaptation policies as it can influence the outcome of "climate refugees."

## Ch 3.7 Migration Concept

Refugees and "climate refugees" are a bit different from migration and migrants, migration has many different subgroups. The subgroups or divisions that will be focused on in this section of the paper is migration/migrant, climate migration, environmental migrants, and internally displaced people. Migration is "the movement of persons away from their place of usual residence, either across an international border or within a State" (International for Organization Migration, IOM). A Migrant is " any person who is moving or has moved

across an international border or within a state away from his/her habitual place of residence, regardless of the person's legal status: whether the movement is voluntary or involuntary; what the causes for the movement are; or what the length of the stay is" (UN Migration Agency). Climate migration is "the movement of a person or groups of persons who, predominantly for reasons of sudden or progressive change in the environment due to climate change, are obliged to leave their habitual place of residence, or choose to do so, either temporarily or permanently, within a state or across an international border" (IOM). Climate migration is a subdivision of environmental migration, it is a form of environmental migration as the environment changes due to climate change.

An environmental migrant is a product of climate migration as a person, or a group has to leave due to an environmental impact. IDPs are "persons that have been obligated to leave their homes due to conflict, or natural disasters, man-made disasters but do not cross international borders (UNHCR 1998). These terms are crucial to understand as decisions may be based around them. For example, what resources and services are provided, and what policies or rights are implemented to protect them. The different terms of someone who is migrant and a refugee and how states and countries accommodate future migrants from climate stressors along with other factors such as war, violence, etc. This concept is relevant in my paper because as climate change increases climate and environmental migrants, IDPs, and mass migration may become more frequent. "The Intergovernmental Panel on Climate Change (IPCC) noted that the greatest single impact of climate change might be on human migration—with millions of people displaced by shoreline erosion, coastal flooding and agricultural disruption" (IOM 2008). In order, to combat the IOM-International Organization of Migration is the leading governmental organization, "to promote international cooperation on migration issues, to assist in the search for practical solutions to migration problems and to provide humanitarian assistance to migrants in need, including refugees and internally displaced people" (IOM). This organization along with other NGOs and governmental need to come up with future adaptation and mitigation strategies to prepare for mass migration. These strategies could include to follow mitigation policies that are presently in place to reduce the impacts of climate change, then there is less chance of migration issues.

Another strategy is to implement projects that could help understand what the main causes are of migration. For example, "The Environmental Change and Forced Migration Project (EACH-FOR) is an attempt to address the statistical gap in our understanding of climate migration, by analyzing direct and indirect environmental effects on livelihoods and and preparation to measure environmental refugee flows" (IOM 2008) A final strategy is to expand or clarify the definition of "climate refugee". As this can result in better response strategies and better preparation for what is needed in that situation. The concept of

migration is important to incorporate in talking about climate refugees and their rights as it can change how they are handled and what service can be provided to them.

All these concepts relate to climate refugees' rights and inequality because it represents how their rights can be influenced within the context of policies. They can show how climate refugee rights might be more unequal than other concepts. When it comes to future policies and plans that all of these concepts should play a role in how they are determined.

## Ch 3.8 Research Objectives:

**Research objective:** Identify the ways social factors such as inequality, citizenship and covid-19 has affected climate refugees' rights and the long-term impact and recovery from disasters.

**RQ/Objective 1:** How were refugees rights expressed during recovery efforts relating to differential impacts of the hurricane in the two sites?

**RQ/Objective 2:** How has COVID-19, citizenship and inequality have affected climate refugees' rights and policies that have governed those rights in practice?

**RQ/Objective 3:** What have been the effects and long-term recovery from hurricanes?

## Ch.4 Methodology

I have chosen to focus on Puerto Rico and the Florida/Caribbean as a comparative study. Looking at these two sites I examine how the way climate disasters are handled and shape inequalities both across contexts. The sites, through recent events, show how the way refugee rights are implemented differently across contexts and the events that interact with inequality. My overall research strategy is qualitative research. My data collection included collecting secondary data such as gathering media and journal articles, conducting interviews, national frameworks and policies. I conducted semi-structured interviews because the series of questions are more "general questions but would be able to vary the sequence of questions" (A. Bryman 2016:201). From the interviews that have been conducted, I analyzed the interviews by identifying particular themes.

**Table 2: Methodology chart of data, description, and type of information**

| Source of data | Description | Type of information |
|---|---|---|
| National policy documents | -The National Preparedness System and Goal<br>-The National Response Framework (NRF)<br>-Pre-Preparedness "guidelines"<br>-National Incident Management System<br>-National Disaster Recovery Framework<br>-National Mitigation Framework | -National Frameworks in the United States for natural disasters.<br>-Analyzing the frameworks to compare how the rights are affected within each hurricane.<br>- These frameworks have themes that are being analyzed. |
| Key informant interview | 4 (3 representatives of organizations working among international refugees, 1 academic, and connections to "climate refugees" at study sites). | -Negative physical, mental, and economic effects of the hurricane<br>-Hurricane Irma had a better response post recovery than hurricane Maria.<br>-Refugees rights are adversely affected |
| Information from government websites | -Stafford Disaster Relief and Emergency Assistance Act<br>- American with Disabilities Act<br>-Civil Rights Act | -Civil Rights Act in the United States<br>- How these acts affect the recovery process within their rights. |

| Media reports | -Hurricane Irma column piece from a "climate refugee" -Hurricane Maria column piece from a "climate refugee" -News articles about hurricane Maria and Irma -Interviews from communities affected by hurricanes. | - Perspectives from the community that was affected by hurricane Irma and Maria. -Facts and data that was collected about the hurricanes and the impacts. |
|---|---|---|

I conducted four interviews, 3 were from organizations and one was a professor at a university that had done research about the site. The professor at the university spoke mainly about the effects of hurricane Irma. While one organization talked mainly about the effects from hurricane Maria. The other organization talked more about refugees internationally and IDPs than specific to hurricane Maria or hurricane Irma. The process of how I did my interviews is that I emailed many different organizations and governmental agencies and explained what my thesis is about and asked if it was possible to do an interview. The criteria I used to identify the organizations was if anyone worked with "climate refugees' 'either national or international and their perspectives about climate refugees. Or they worked with "climate refugees" or communities that were affected by hurricane Maria and Irma. Then I created a list of general but relevant questions to my topic and during the interview I asked follow up questions or varied the questions depending on the interviews. Prior to the interview I sent a consent form and received oral consent that allowed me to conduct the interviews. I explained to the interviewees that I am recording the zoom call and taking notes during this time, and that they will be anonymous. This meant that I would not describe them in any ways, or what their name is. I did say that I would put the organization they worked for, and they consented that it was ok. However, I decided to omit the names of the organizations to keep it more confidential. In this case I followed the formal ethical guidelines at NMBU, by being transparent with my interviewees and explaining what I am studying and how their interviews will be anonymously put in my paper. Also, not altering any of the transcribing of the interviews. I transcribed the interviews to use for my findings and analysis section. To obtain more diverse information I triangulated my data. I used the interviews I conducted, data from texts, and the

frameworks from the government websites to analyze the themes from my interviews and discuss my results. I used the search engine google scholar, google, and Oria, google scholar and Oria to find journal articles, peer review articles. I used google to find government documents, and some media articles for the analysis section.

## Ch 4.1 Limitations

The challenging part about conducting my interviews was that I wrote many different emails to different organizations to ask for interviews and most of them did not respond. There were some organizations that explained they did not have anyone to talk to me or could help me. This resulted in the limited number of people that I could interview. I was only able to interview 4 people, and this potentially skewed my results because I could have received more varied answers and created more nuance analysis. Another limitation was not being able to do fieldwork due to covid-19 restrictions. The perspective of someone who has been affected by hurricane Maria or hurricane Irma might have made my findings more diversified and more concrete. The final limitation was the issue of timing. I had done most of my interviews in March to April, however, there was an interview where I had written an email about conducting an interview and they responded in the middle of May. The issue was that I was close to finishing writing my thesis and was due in two weeks from that point and  trying to fit in the last interview before it was due and still having enough time to edit was challenging.

## Ch 5 Findings/Analytical Framework

The table below describes the themes that I analyzed among each framework to get a better understanding of my discussion. These themes are the same throughout both hurricanes because they both share the same themes and show the comparison of how the recovery process was applied for both. I first look at the national frameworks relevant to disaster response and the rights of refugees to describe how they frame disaster response approaches. These frameworks are common to both sites, but their implementation during disaster and disaster recovery are different between sites and shape local inequalities within sites. The frameworks are important because it focuses on the protection of basic rights. In the US, the frameworks, guidelines, and systems that are in place to organize assistance before, during and after natural disasters occurred. These frameworks, and systems are important to have as they can potentially save peoples' lives. The frameworks, guidelines, and systems that will be discussed in

this paper will be pre preparedness "guidelines", National Response Framework, National Incident Management System, National Disaster Recovery Framework, and National Mitigation Framework. All of these frameworks, guidelines, and systems are part of the National Preparedness System and to achieve the National Preparedness Goal.

**Table 3: Analytical themes of Hurricane Maria and Hurricane Irma**

| Hurricane Maria | Hurricane Irma |
|---|---|
| Theme: Inequality | Theme: Inequality |
| Theme: Covid-19 | Theme: Covid-19 |
| Theme: Socio-economic | Theme: Socio-economic |
| Theme: Discourse | Theme: Discourse |

## Ch 5.1 National Frameworks/Systems

**The National Preparedness System and Goal:**

The National Preparedness system "outlines an organized process for everyone in the whole community to move forward with their preparedness activities and achieve the National Preparedness Goal" (FEMA 2020). There are 6 elements that are included in the NPS, identifying and assessing risk, estimating capability requirements, building and sustaining capabilities, planning to deliver capabilities, validating capabilities, and reviewing and updating (FEMA 2020). Identifying and assessing risk is the first step in the system, which is to collect data of potential threats, risk and make assessments that form a basis for the following steps. The next step is estimating capability requires, this entails to address those risks with specific capabilities and activities such as mission areas. These mission areas are prevention, protection, mitigation, response and recovery. Each of these mission areas has their own framework such as 32 core capabilities that are followed throughout the system. Then its building and sustaining capabilities, using the National Incident Management system and the national frameworks to use limited resources in the best way capable. After it is important to involve communities, stakeholders, and other agencies to be prepared or plan to deliver capabilities. The final steps are to validate the capabilities or

see if these steps and activities are working as intended. Finally, reviewing and updating these plans to make sure, that everyone is prepared to the best of their capability. All of these steps are important to implement for the foundation of natural disasters in particular hurricanes as storms can  become increasingly worse and needs a system for the recovery process.

**Pre-Preparedness "guidelines"**

FEMA and the National Hurricane Center (NHC) prepares for hurricanes and sends out memos prior to the hurricanes. This is what was recommended according to FEMA, NHC, and other partners.

"Update your disaster kit. Have a three-day supply of non-perishable food, bottled water, a battery-operated radio, flashlight, extra batteries, cash, medicines, first aid kit, pet foods, and important family documents. Know your evacuation routes and prepare options for overnight lodging. Storm surge can cut off evacuation routes, so do not delay leaving if an evacuation is ordered for your area. If you encounter floodwaters, remember – turn around, don't drown. Develop an emergency communication plan, which includes a phone number for a family member or friend outside the area—a point of contact—in the event of separation."  Looking through the pre-preparedness for hurricane Maria had the same guidelines as hurricane Irma. These measures were pre-covid and there was no indication on what to do if there is a pandemic or anything else that occurs outside of the hurricanes.

However, the guidelines include the recovery process post natural disaster/hurricane. In 2017, after the hurricanes there was an after-action report by FEMA. In this report it explained the damages from each of the hurricanes and what responses were taken. FEMA has a set of guidelines pre-covid and the guidelines are implemented for hurricanes in general. The National Hurricane Program (NHP), "provides data, resources and technical assistance for hurricane evacuation planning and response for state, local, tribal, territorial and federal government partners" (FEMA 2020). There are different components that are associated with the NHP that helps the recovery response. These components include hurricane evacuation studies and evacuation planning, HURREVAC decision tool, hurricane liaison team operational decision support, Intergovernmental Hurricane Preparedness, Post-Storm Assessment, Technology Development and Integration, Storm Surge Risk Products, and Training for Emergency Managers and Partners (FEMA 2020). Each of these components contribute to hurricane responses by either using tools, frameworks, committees, and products that provide the best responses to the disaster.

**National Response Framework (NRF)**

There are set of frameworks that are associated for a natural disaster that is important to follow to help recovery efforts. One of the frameworks is called the National Response Framework or the NRF, "A guide to how the nation responds to all types of disasters and emergencies. It is built on scalable, flexible, and adaptable concepts identified in the National Incident Management System to align key roles and responsibilities" (Homeland Security 2019). Their goal for response is to "save lives, protect protect property and the environment, stabilize the incident, and meet basic human needs following an incident" (Homeland Security 2019). They focus on seven pillars that are essential for human safety and well-being. These include, "Safety and Security; Food, Water, Shelter; Health and Medical; Energy (Power & Fuel); Communications; Transportation; and Hazardous Material" (Homeland Security 2019). These seven pillars make the action response more effective as it contains all the basic necessities rights of people and try to bring stabilization back into peoples' lives that were affected by the disaster. These pillars are important to decision makers to effectively make the best decision to help those people in need. "After an incident, initial assessments of the community lifelines (i.e., whether they are impacted and to what extent) help establish incident priorities and objectives that drive response actions" (Homeland Security, 2019). The NRF is important guidelines to follow when recovering from disaster as it can focus on attention to the areas that need the most aid and the process for the best decision making.

**National Incident Management System**

The National Incident Management System (NIMS) is part of the NRF and the purpose of this framework is to manage incidents. The NIMS is an "integrated approach to resource management" (Homeland Security, 2019). The difference between these two frameworks is that the NRF provides the structure and resources for policy process and implementation. While NIMS, provides the management of incidents regardless of the cause or complexity of the incident. All the components of the NIMS response are important because it develops a response. In terms of mutual aid, communities use NIMS components and integrate these components into response plans and access to resources across all jurisdictions. "Neighboring communities or organizations play a key role by providing support through a network of mutual aid and assistance agreements that identify the resources that communities may share during an incident" (Homeland Security 2019). This framework affects all communities and jurisdictions across all scales having and having this framework creates a better system of distributing mutual aid even in the worst disasters. The process of establishing mutual aid agreements is done by the private sector. As seen so far in my research mutual aid is hard to provide during a disaster. There is a common language among partners of giving mutual

aid. This required language is called the National Qualifying System or (NQS), "addresses this challenge by providing a common language and approach for qualifying, certifying, and credentialing incident management and support personnel. NQS provides the tools for jurisdictions and organizations to share resources seamlessly" (Homeland Security 2019). This system helps provide a smooth transition of mutual aid through the different mutual agreements and personnel. The NRF is changing all the time and was updated in 2019, the necessity of keeping this framework updated as better action can be implemented for future recovery plans from natural disasters.

**National Disaster Recovery Framework**

   Another framework that is used but more at the local level is the National Disaster Recovery Framework (NDRF). The NDRF "establishes a common platform and forum for how the whole community builds, sustains, and coordinates delivery of recovery capabilities" (Homeland Security 2016). The main priority of this framework is to prepare for recovery before the disaster. This framework can be adjusted and certain elements can be implemented at any point depending on the severity and needs from the disaster.
 There are eight guiding principles that are attributed to this framework, these eight principles are: "Individual and Family Empowerment Leadership and Local Primacy, Pre-Disaster Recovery Planning, Engaged Partnerships and Inclusiveness, Unity of Effort, Timeliness and Flexibility, Resilience and Sustainability and Psychological and Emotional Recovery" (Homeland Security 2016).  These principles are essential to follow because it gives bases of how the recovery process is developed. This framework is an important guide to follow as it creates roles and responsibilities for the recovery team and structures among coordinators before, during and after the disaster (FEMA 2020).

        Another essential feature of the NRDF, is the Recovery Support Functions (RSF), "their purpose is to support local governments by facilitating problem solving, improving access to resources and by fostering coordination among state and federal agencies, nongovernmental partners and stakeholders" (FEMA 2020). The RSF has six components that are used to help identify and resolve response conflicts post disaster with the integration of stakeholders, and agencies. These components are economic, housing recovery, infrastructure system, health and social services, natural and cultural resources, and community planning and capacity building (FEMA 2020). The importance of RSF is that it assists with the acceleration of the recovery process because it helps coordinate and organize federal assistance provided by local, state, tribal and territorial government groups and organizations.

**National Mitigation Framework**

An additional framework that is used during the recovery process post disaster is the National Mitigation Framework. The purpose of this framework is to understand the risks and implement the best course of action to address those risks. Just like the other frameworks, there are seven guiding principles that is used to mitigate these risks. These seven principles include Threats and Hazards Identification, Risk and Disaster Resilience Assessment, Planning, Community Resilience, Public Information and Warning, Long-term Vulnerability Reduction, and Operational Coordination (FEMA 2020). Overall, community participation is vital from local, state, and federal level. In this case it is important to mention the roles of the organizations, local, state and federal governments. The importance of the organizations in the recovery process is they can be the best advocates for the community in policies, and decision-making processes. They are usually independent, on the ground support and have knowledge on certain areas that the government may not have access too. Also, organizations can provide training, education, and access to resources for those are who are affected by the hurricanes. The role of the local government is to protect their people and provide mitigation efforts. They are "working to protect the health, safety, and welfare of the people they represent, local governments also bear responsibility for mitigation activities" (FEMA 2020).

These mitigation activities consider the economy, health, housing, infrastructure, social services, etc. It is thought that the government at a local level can have a better understanding of options. The other job of the loca government is to be resilient. "Local governments must also improve resiliency by preparing for recovery and integrating mitigation policies into the recovery phase to ensure opportunities are not lost for risk reduction during rebuilding" (FEMA 2020). While the job of federal government after a disaster is to protect the nation not just from natural disasters but other areas as well such as terrorists attack, and other hazards. This includes providing its citizens with resources, data, information that will help the responses of the disaster. At this level all federal agencies need to provide services with the communities, organizations, and territorial government. The different departments of the federal government such as Homeland Security and FEMA play an important role in providing migration protocols and recovery efforts after the hurricane.

Furthermore, the federal government job after a disaster is to protect its citizen from social injustice and inequality and providing equality for everyone. "The Federal Government, in coordination with local, state, tribal, and territorial partners and the private sector, contributes to the development and delivery of the core capabilities in a way that ensures the protection of privacy, civil rights, and civil liberties" (FEMA 2020). Finally, the state, territorial and tribal government have responsibility to protect its people within their jurisdiction and promoting resilience by implementing policies that ensure mitigation efforts. The importance

of all the efforts from the organizations, communities, local and federal government will make the recovery process expedited and more efficient.

**Stafford Disaster Relief and Emergency Assistance Act**

The Stafford Disaster Relief and Emergency Assistance Act of 1988, "provides the legal authority for the federal government to provide assistance to states during declared major disasters and emergencies" (A.S.T.H.O 2012). This law is important for the states because it provides financial, technical and logistical support. If the "event is beyond the combined response capabilities of state and local governments, then financial assistance will be provided under this act" (A. S.T. H.O 2012). The way this act works is the governor of that state may request for the Stafford Act to the president, after the state responds with their own emergency plan, the event exceeds their abilities to respond to it and needs further assistance. The president can authorize this act if the "major disaster" or "emergency" exceeds the abilities of the state or local government to respond to it (A.S.T. H.O 2012). This act covers emergencies and major disasters such as flood, fire, or any natural catastrophe and there are three types of resources and assistance that are available: Individual assistance, hazard mitigation, and public assistance (ASTHO 2012).

Individual assistance, "Provides immediate direct and financial assistance to individuals for housing and other disaster related needs, while public assistance provides aid to applicants that need assistance for work and costs but have to be eligible" (ASTHO 2012). The hazard mitigation assistance provides the government with grants that help create long term measures after a major disaster (ASTHO 2012). This act gives some structure for states to receive aid through rules, policies, and the NRF and NIMCS further define the roles of local, state, and government in a disaster. (ASTHO 2012).The Stafford Act is relevant to analyze because it shows it is used in natural disasters and the inequalities among climate refugees' rights.

**American with Disabilities Act**

The American with Disabilities Act (ADA) "prohibits discrimination against people with disabilities in several areas, including employment, transportation, public accommodations, communications and access to state and local government' programs and services" (US Department of Labor). The ADA has five principles that are emphasized, employment, public services, public accommodations, telecommunications, and finally miscellaneous. Employment states that employers are

"prohibited to discriminate on the basis of the disability in all aspects" (JAN 2012). Public services, including government agencies, cannot deny services or participation of activities available for people who do not have a disability (JAN 2012). The public accommodation principle requires that all public areas such as restaurants, hotels, stores, etc. have to accommodate, modify, and be accessible for people with disabilities (JAN 2012).

The telecommunications principle states that companies need to provide telephone services or similar devices to the deaf community (JAN 2012) . Lastly the miscellaneous principle, "This title includes a provision prohibiting either (a) coercing or threatening or (b) retaliating against individuals with disabilities or those attempting to aid people with disabilities in asserting their rights under the ADA" (JAN 2012). This act is important to analyze because it can indicate how the rights for the disability have been implemented in the framework and the possible in discrepancies that are shown within either hurricane Maria or hurricane Irma or both.

## Ch 5.2 RQ 1: Refugees rights expressed during recovery efforts

As mentioned before there are no specific rights for "climate refugees" and no specific international law. However, the national frameworks set in place for disaster recovery efforts should be followed for both hurricanes. In this section I will be analyzing how "climate refugees '' rights are expressed during the recovery efforts within these frameworks using the theme of inequality. Specifically, within the elderly, children, gender, disability community, funding, services, and rights. The national frameworks that will be emphasized in this section are The National Response Framework (NRF), National Disaster Recovery Framework, the Stafford Act and the ADA.

| Hurricane Maria | Hurricane Irma |
| --- | --- |
| Criteria: Funding Framework: NDRF Framework; FEMA- Disproportionately unequal distribution. | Criteria: Funding Framework: FEMA: NDRF More equal distribution |
| Criteria: Disability: FEMA National Disaster Response Framework; Stafford Disaster Relief and Emergency Assistance Act. | Criteria: Disability: FEMA National Disaster Framework; Stafford Disaster Relief and Emergency Assistance Act, and Americans with Disabilities Act. |
| Criteria: Gender: National Response Framework. | Criteria: Gender: National Response Framework. |

| | |
|---|---|
| Criteria: Children: National Disaster Response Framework and McKinney-Vento Act | Criteria: Children Framework: National Disaster Response Framework |
| Criteria: Elderly Framework: National Disaster Response Framework. | Criteria: Elderly: National Disaster Response Framework. |
| Criteria: Services/Rights: Civil Rights; Human Rights (i.e., health services, education, access to resources): FEMA | Criteria: Services/ Rights Civil Rights; Human Rights (i.e., health services, education, access to resources): FEMA |

Looking at the different criteria, and how climate refugees' "rights" were expressed during recovery efforts relating to the impacts of the two sites,  hurricane Maria was exposed to more inequality and their "rights" were not as exercised than hurricane Irma. While climate refugees "rights" from hurricane Irma their "rights" are more exercised. Even though these two hurricanes were in the same year, around the same area, and similar damages; "climate refugees" rights were treated differently. For example, the funding criteria for hurricane Maria is disproportionately unequal compared to the funding of hurricane Irma. "Harvey and Irma survivors had already each received nearly US$100 million in FEMA dollars awarded to individuals and families, whereas Maria survivors had only received slightly over US$6 million in recovery aid" (C. E Willison, P. M Singer, M. Creary, S. L.Greer 2019). FEMA was the main distributor of funding between these two hurricanes and there were discrepancies between the funding of these two hurricanes. In relation to the NDRF, the purpose of this framework is to provide relief efforts of economic, infrastructure, health and social services. While "actions, both intentional and unintentional, that exclude groups of people based on race, color, ethnicity, national origin (including limited English proficiency), religions, sexual orientation, gender identity, age, or disability can have long-term negative consequences on entire communities and may violate law" (Homeland Security 2016).

In this context there should be no disparities of funding because even though Puerto Rico is smaller island the damage from the storm was just as bad as hurricane Irma. Following the national framework, the "rights" of people and the funding provided between hurricane Maria and hurricane Irma shows an unequal distribution. The job of the government is to protect its citizens especially in times of hardship of a natural disaster. For the criteria of the disabled rights, in hurricane Maria was not as inclusive when analyzing the framework. This is due to when the recovery process was in progress the disabled community did not have

access to some of the resources as the rest of the community. There is a responsibility to protect, including everyone's needs and rights into the recovery process. In the NRF, it states that "recovery management staff in all jurisdictions have a fundamental responsibility to consider the needs of all members of the whole community, including children; individuals with disabilities and others with access and functional needs; those from religious, racial, and ethnically diverse backgrounds; and people with limited English proficiency" (Homeland Security). The "rights" for the disabled post recovery, were not met. For example, "Many people with disabilities lost assistive equipment during the hurricane. Insurance plans denied replacement: FEMA was slow in providing them because they required the survivor's insurance plan denial; most suppliers were not yet working because of their own losses" (B. Ramos Chárriez and C. Salas Pagan). In this case, the needs of the disabilities were denied and represented inequality. This would be the situation where the Stafford Act is implemented such as the Individual assistance, which "provides immediate direct and financial assistance to individuals for housing and other disaster related needs" (A.S.T.H.O 2012). However, if their rights were properly instituted then the people with disabilities would be able to receive their replaced equipment and the other services that should be available to them.

The next sub criteria that rights are affected by inequality is gender rights. When conducting my research, the national frameworks briefly mentioned nondiscrimination against women, but no specific framework of how to accommodate the needs for them after the disaster. Not having these rights already in place represents inequality and discrepancies within the recovery process and framework. "In the aftermath of a disaster, gender inequalities are merely exacerbated, and women suffer from increased exposure to sexual and domestic violence; worsened access to reproductive health care and hygiene products; and increased caregiving responsibilities for children, the elderly, and people with disabilities" (A. Ravi 2018). This is important to illustrate because in the National Response Framework it states that the whole goal is to protect people's lives and protect their basic human rights by "focusing on seven pillars that are essential for human safety and well-being. These include, "Safety and Security; Food, Water, Shelter; Health and Medical; Energy (Power & Fuel); Communications; Transportation; and Hazardous Material" (Homeland Security 2019). Since it is essential to protect human rights and provide protection for the women who are more exposed to sexual and domestic violence, with safety and security. The framework does not represent the needs and rights of women and is disproportionately unequal compared to the rights of the men.

The sub-criterion for the young adult/children rights for hurricane Maria, is affected by having unequal advances. The unequal advances on their rights is that students are provided with less resources

to receive an equal education as other students are provided. For example, there was a study done by the Youth Development Institute of Puerto Rico and found that after hurricane Maria many students had missed many days of school, had lower performance at school, and a lack of bilingual classes (B Lynn 2018). The other factor is the students who have become homeless because of the hurricane. "The lack of identity papers, immunization documents, school records, lack of proof of prior residency and lack of parent or guardian signature for an unaccompanied youth may lead some local schools unfamiliar with the rights of homeless students to resist or refuse admitting children eligible for immediate enrollment under the McKinney-Vento Act. The lack of an IEP or 504 Plan for children may also cause some delays in admission or provision of appropriate services" (C.O. P. A. A. INC 2017). The McKinney-Vento Act gives children and youth the right to an enrollment immediately without any records present, have the right for that child to stay in the original school if it is the best decision for them, and receive transportation to and from that school.(C.O. P. A. A. INC 2017)In the NDRF, it states, "Care must also be taken to identify and remove social and institutional barriers that hinder or preclude individuals with disabilities, and others in the community historically subjected to unequal treatment, from full and equal enjoyment of the programs, goods, services, activities, facilities, privileges, advantages, and accommodations provided" (Homeland Security 2016). If children's "rights" from hurricane Maria were exercised, then the studies would show it is not as difficult getting students into schools and giving them the best education.

The elderly community rights are being infringed upon by hurricane Maria. In the NDRF, there is a section that plans for health and social services and has a list of critical tasks that need to be done. One of the tasks is to "Complete an assessment of community health and social service needs; prioritize these needs based on the whole community's input and participation in the recovery planning process; and develop a comprehensive recovery timeline that includes consideration of available human and budgetary resources" (Homeland Security 2016). However, most of the elderly community was not prioritized because there would have been an assessment done on the nursing homes or hospitals that had elders and needed services quickly. "Puerto Rico's power grid was knocked out completely by the storm, and officials say that it could take up to six months for electricity to be restored. Without electricity, many older people are stranded on their apartment floors because the elevators don't work, and they can't walk up and down stairs" (A. Holpuch 2017). This represents that the framework was not executed properly in this situation and elders' rights were unequal in the recovery process.

Services and rights have been negated during the recovery process of hurricane Maria. Since

Puerto Rico is U.S. territory and has the same citizens' rights as an American Citizen. "In 1917, President Woodrow Wilson signed the Jones-Shafroth Act, which granted U.S. Citizenship to Puerto Ricans born in Puerto Rico on or after April 25, 1898. Puerto Rican US citizens are entitled to the same inalienable rights as mainland US citizens. Puerto Rican US citizens are also entitled to equal FEMA federal government response to natural disasters " (Ahajazin 2017). The importance of equal response to the disasters explains how the frameworks are being used and that the recovery process is more successful. In this case, after the disaster basic human needs were not met such as "lack of access to clean water, medical supplies, food, and basic public health services"(Ahajazin 2017).  Since aid and services have been delayed and the frameworks have not been properly implemented upon sub-groups rights it imposes on basic human rights.

Overall, "climate refugees" rights are unequally exercised  in the case of hurricane Maria. There is a lot more inequality in subgroups than in the general community. In the section I will be talking about how the rights of climate refugees were affected by hurricane Irma and comparing with the frameworks and how the rights of climate refugees are expressed compared to those of hurricane Maria within the theme of inequality.

In the case of hurricane Irma climate refugees' rights were exercised more than the rights from hurricane Maria and the frameworks were implemented for the recovery process. The funding criteria there was more of equal distribution of funding compared to hurricane Maria.  For example, the funds were distributed by three separate bills;  the first bill was "In September 2017, Congress authorized US$15.25 billion in Hurricane Harvey and Irma disaster aid, with US$7.4 billion allocated for FEMA's Disaster Relief Fund, US$450 million for the SBA's Disaster Loans Program Account and US$7.4 billion for HUD's Community Development Block Grant (CDBG) programme to support local relief. The second bill was for supplementing additional support for disaster relief. The third bill allocated $18.67 million for the Disaster Relief Fund, and 10million to the Department of Homeland Security Office of Inspector General for audits and investigations related to disasters" (C. E Willison, P. M Singer, M. S Creary, S.L. Greer 2018). Meanwhile, for Puerto Rico $4.9 million was allocated in October but in the form of a loan instead of a grant that was allocated for Florida and Texas. The loan was denied, and the third bill was passed but not until February and delayed the process of payouts (C. E Willison, P. M Singer, M. S Creary, S.L. Greer 2018). This demonstrates that the funding for hurricane Irma was distributed equally, even though both hurricanes had similar damages. The NDRF was implemented correctly in the recovery process, one of the capabilities is economic recovery, which is to

"develop economic opportunities that are inclusive for communities. In order to develop  one of the critical tasks is to implement economic recovery strategies that integrate the capabilities of the private sector, enable strong information sharing, and facilitate robust problem solving among economic recovery stakeholders" (Homeland Security 2016). This was achieved by the funding that was provided and the opportunities to recover from the hurricane more efficiently.

For hurricane Irma the rights for the disable community were not as included in the recovery process. This was determined for the rights of "climate refugees" in hurricane Maria. To give an example, a case study was done on communication for the deaf and disabled. There was an evacuation warning for hurricane Irma, and a volunteer who did not know sign language  well enough  to provide the interpretation of the warning. The interpretation was significantly incorrect. The impact of this study is relevant because it explored "behind emergency management programs'  failure to provide accessible and inclusive information to the deaf and hard of hearing communities and to other groups broadly considered to be non-traditional audiences' ' (S. D. Burris 2019). In accordance with the ADA, "the telecommunications principle states that companies need to provide telephone services or similar devices to the deaf community (JAN 2012)   the government needs to make sure that communication is effectively communicated. Unfortunately, the lack of training from the volunteer did not effectively communicate these instructions and could have resulted in injury, diseases, and death (S.D. Burris 2019). In the case of hurricane Irma, the deaf/disability rights were negatively impacted because the government failed to be more inclusive of the deaf community. "Current federal government emergency management guidelines fail to address disability inclusion in planning phases in which messages and communication methods are developed and tested" (S.D. Burris 2019).  This violates the ADA  because the act is a part of the inclusion community section of the NDRF framework as the situation was not recertified by correcting and releasing the information in another way. This negatively affects the disabled community right within hurricane Irma and portrays the inequality among the rights.

Gender rights in hurricane Irma had some difference in the way they were treated in contrast to hurricane Maria. There were more resources to enforce these rights during the recovery process. Throughout my research I could not find anything specific to the rights of women and hurricane Irma in Florida. An interview with a source from an organization that worked on site stated, "did not feel as though there was no inequality between the men or any other subgroups." At least in their own experience. It is difficult to confirm that gender rights were unequal when looking at the framework because just like hurricane Maria there are no specific sections to refer to the rights of gender. There is a

generalization of trying to meet the needs of the elderly, women, children, and the disabled. However, women need different needs such as reproductive health care, disability, etc. This cannot provide accurate accommodation for gender rights. In light of this, hurricane Irma affected not only Florida, but the Caribbean and the UN Caribbean are trying to provide services and rights to women during the recovery process. This includes, "A joint effort by UN Women and UNFPA started the distribution of 'dignity kits" containing basic health and hygiene products for displaced women and girls from the Caribbean Island of Barbuda, as they arrived in Antigua, escaping Hurricane Irma" (UN Women 2017). Therefore, there is a bit of inequality among gender rights, but some services are being provided to potentially be a part of the frameworks.

In terms of students' rights being affected by hurricane Irma in Florida their rights are included in the recovery process. With hurricane Maria it is more difficult to receive equal education rights. "Climate refugees" rights in Florida of getting an equal education is higher and is in accordance with the National Recovery Framework. For example, "Florida will receive about $84.5 million as part of a federal program to help schools recover from last year's natural disasters, including Hurricane Irma. The state agencies will provide assistance to local educational agencies" (D. Rorabaugh). The inequality between hurricane Maria's students' right to education and the rights from hurricane Irma is due to the lack of access to education. As students from Puerto Rico had to relocate and not all classes are bilingual it is more difficult to keep up with classes and not provide equitable funding to reopen schools. The students in Florida are getting access to education more easily by funding and assistance for the schools that are affected. In my last interview I conducted with an organization that worked on the site, the source explained that "all the incoming students were accommodated and that the kids were not as impacted in the sense of education." The NDRF is applied in this case because state governments support local efforts." States assist local governments post-disaster by identifying, securing, and leveraging recovery resources and funds for local governments. States also oversee regional coordination of recovery elements, set priorities, and direct assistance where it is needed" (Homeland Security 2016). The rights to education expressed in hurricane Irma are instituted.

Elderly rights were adversely affected during the recovery process, due to the fact the elderly community resources were not as effective in providing services that would benefit these vulnerable communities. To elaborate, the county of Florida has an emergency assistance program for the elderly and disabled community. This program "provides elderly and disabled residents with transportation to and from shelters equipped for their medical needs. But it requires pre-registration, and many people

who would have benefitted—including the Guitys—said they were unaware of the program's existence" (K. Stein 2018). In the role and responsibilities section of the NDRF, it says, "States play an important role in keeping the public informed through strategic messaging, and they work with all other stakeholders to provide an information distribution process." This affects their rights because if they were unaware of the program the local government did not implement the framework correctly and the outcome of the recovery process was problematic. Compared to the rights of the elderly community from hurricane Maria, the rights were not as instituted as well. The elderly community were most vulnerable in both hurricanes, but their rights were not as enforced.

Services and rights were more displayed within the case of hurricane Irma compared to hurricane Maria. The reason is because within the sub criteria their rights were more expressed during the recovery process. Especially, when it came to funding and services that are provided and the access to those resources were more accessible than hurricane Maria. There are more recovery efforts being provided to hurricane Irma than hurricane Maria. An example, "The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) continues coordinating the efforts of the federal family, working alongside state and local emergency responders to help address the immediate needs of survivors, following Hurricane Irma" (Homeland Security 2017). There are many departments and agencies that are providing the basic human needs to hurricane Irma and the recovery efforts are more efficient. Some of the agencies include "American Red Cross providing shelter, food, water and supplies, the US Department of Health and Human Services are providing medical support in shelters, and the U.S. The National Guard Bureau maintains life and property sustaining resources, while working with civil partners in the affected areas" (Homeland Security 2017). Hurricane Maria's services and funding are being delayed. That is how the rights are being affected between hurricane Maria and hurricane Irma. There were some rights that were excluded from both hurricanes such as elder, disabled, gender rights, there is more inequality among the rights of hurricane Maria than hurricane Irma. Also, how the implementation of frameworks impacted the course or the recovery process.

## Ch 5.2.1 RQ2: Social factors, inequality, Covid-19 affect climate refugee rights

**Table 3:  Social factors, inequality, Covid-19 affect climate refugee rights**

| Hurricane Maria | Hurricane Irma |
|---|---|
| - **Covid-19: Negative affected refugee rights and more difficulty for them to recover.**<br>- **Inequality: Elderly disabilities and minorities communities are more affected.**<br>- **Citizenship: Not as many services provided for people who don't have citizenship or documentation of rights.**<br>- **Social Factor: Socioeconomic** | **-Covid-19: As well it is more difficult to access rights and the recovery process is longer.**<br>**-Inequality: Young adults, disabilities elderly, and minorities communities**<br><br>**-Citizenship: Not as many services provided for people who don't have citizenship or documentation of rights.**<br><br>**-Social factor: Socioeconomic** |

The table above represents how covid-19, inequality, and social factors such as citizenship or socioeconomic factors have affected climate refugees' rights and the policy frameworks. According to the source from the organization, "the people in Puerto Rico were being bombarded with no help, and after the hurricane there were still 400,00 people affected. Three years later there were about 23,000 people that were still living under a tarp." In terms of "refugees" rights expressed from the impacts of Hurricane Maria and there are no specific rights that are given. Being a citizen in the United States there are already natural rights for resources, services, etc. Unless they are refugee or immigrant that has come from another country then their status of rights are different. Hurricane Maria had more inequality of rights compared to Hurricane Irma. These inequalities were among the subgroup of elderly, children, gender, and the deaf community in regard to services and resources that are supposed to be distributed during the recovery process. Hurricane Maria Covid-19 has affected refugees' rights immensely, and has made the recovery process longer and more difficult. The health care system in Puerto Rico had its difficulties with their system before and during hurricane Maria. "Hurricane Maria exposed weaknesses in the Puerto Rican health system, notably the lack of awareness about the limited capacity of backup generators, poor patient care coordination, and interruption of medical care for patients with chronic conditions" (C. C. Rios, E. J. Ling, R. Rivera-Gutierrez, J. Gonzalez Sanchez, S. Bereknyei Merrell, J. Bruce, M.Barry and V. De Jesus Perez 2021).  Since the health care system had already weakness within their system and the effects of covid-19 made it more difficult to help patients who are exposed to. The source stated,  "There have been recent earthquakes that have created even more of a complex situation with Covid-19." The lack of structure, not having access to generators, and other factors such as earthquakes affects "climate refugees" rights  directly because people are exposed to

covid and the process of protecting their rights are almost nonexistent. The borders are closed so emergency aid and other assistance cannot be provided, exposing the minority migrants who are more vulnerable. In an interview, an expert reported that, "Minority groups and migrants are more exposed to covid-19 resulting in death and less ability to get the best healthcare. Additionally, refugees/migrants who applied for asylum and refugee status are entitled for assistance and access to rights. Meanwhile undocumented refugees don't have the same access to rights." This is important to mention because these measures can indicate who gets access to these resources, and who does not, resulting in the recovery processes more strenuous. Within the minority communities in Hurricane Maria, there is inequality of how help was provided between Puerto Rico and other areas affected by the hurricane. "Give the U.S. citizens of Puerto Rico the adequate resources, treat us the same as citizens in Texas, in Florida and elsewhere, we will come out of this stronger," said Governor Ricardo Rossello" (K. Bredemeier  S. Herman, 2017). This explains that inequality was not  being distributed properly and not having the same rights as US citizens and Puerto Rico is U.S. territory. They are seen as a minority community since they are not in the mainland of the United States. The frameworks were not instituted within these rights because their rights were not expressed during the recovery process.

Within the elderly community and the disable community rights were disproportionately unequal. To explain, the elderly community during the time of recovery efforts for Hurricane Maria, the local community in Puerto Rico had been asked about power outages and who needed service to receive electricity. There were forms that required to be filled out online. Through the interview I conducted, a source from an organization stated, "that it was more difficult to provide the service to the elderly community because the elderly communities are not as "technologically advanced" as the younger generation. FEMA asked for the forms about the electricity services and above 60% have been rejected." This represents inequality because the federal government has a right to protect the rights of everyone regardless of race, age, gender etc. "The Federal Government, in coordination with local, state, tribal, and territorial partners and the private sector, also contributes to the development and delivery of the core capabilities in a way that ensures the protection of privacy, civil rights, and civil liberties" (FEMA 2020).  In protecting the rights for the elderly community, FEMA or other governmental agencies should make the forms more accessible for everyone or have someone act as their liaison to provide the necessary information to receive the aid. Within the disable community their rights were not clearly instituted as other rights were. For example, "The deaf population had no idea as to what was happening. Therefore, they were not aware of the response efforts or services available to assist them because there was no way for them to get the information" (B. Ramos Chárriez and Dr. C. Salas Pagán). This made it nearly impossible to get the services to assist them and to start the

recovery process. They are most vulnerable, and their rights are not exercised or instituted as clearly as everyone else's. Political actors need to create policies that include the needs of disabled people, in order to protect their rights. There are many social factors that affects "climate refugees rights", however, one of the factors that will be focused on this section is the socioeconomic factor and the adverse effects it has on the rights of climate refugees. People who are from lower-income economies are more exposed to the impacts of the hurricane, it is more difficult for them to move away from these areas as they may not be able to afford to move or want to "move from their comfort zone" (Source from Organization). It is important to have infrastructure and other financial plans in place to accommodate all the communities. "Low-income communities are not only more likely than better-off communities to rely on informal housing reconstruction as a form of recovery" (Brisson and Usher 2005). "A large percentage of informal housing is unprecedented under the oversight of FEMA and has complicated the reconstruction process" (J. Talbot; C. Poleacovschi, Ph.D., M.ASCE ; S.Hamideh, Ph.D. ; and C.Santos-Rivera 2020). This represents that if someone is a climate refugee, and their socioeconomic status is within the lower community their rights are not as considered in the recovery process. The recovery process would not be as complicated if their rights are considered and especially if policy makers included their rights within the disaster recovery process.

In the case of hurricane Irma, the outcome of the effects was similar to hurricane Maria. Covid-19 affected their rights just like hurricane Maria in the sense that recovery process took longer, and it is more difficult to provide aid. To elaborate, the process of recovering takes longer especially in setting of covid-19 because there are protocols to be followed to be safe and trying to help people who have insurance claims, need special assistance, and other services. If "climate refugees" are undocumented, they might not be entitled to the same assistance and rights as someone who is local. Along with the hurricane Maria, hurricane Irma had the same inequality among the sub-groups. Young adults/children had been affected by inequality in particular due to the fact that some of the young adults/children had to move to other school districts to learn. Then when they finally were able to settle, covid-19 hit and had to learn through virtual classes. In an interview I conducted, I asked, "Along with gender, have you seen a disproportion among elderly communities versus children or young adults? How are their "services or rights being impacted? The university professor, stated, "Absolutely, in terms of the pandemic and having students learn, it has been very difficult for them to learn. The disproportion of schools with covid who went to school versus who went online and the differences of being taught." This represents that there is inequality within the young adult/children community. Some kids were able to go physically to school and some were not able to have to learn virtually, which made it more difficult. In this case, all students should have done virtual school regardless of where they

lived that way all students were getting the same chance of education and help. In regards to the minority community is inequality among them and the local community. For example, in my second interview I conducted, I posed the question, "Has there been reservations from local communities about refugees? Follow up, is there more about a refugee coming from another country, or IDPs, or both?"

The professor from the university explained, "Yes, absolutely because it is a misconception about them. Or on how they are perceived. It is mainly coming from refugees outside the country that experiences these reservations the most. Internally it is based on color, for example in New Orleans there are many stories on how they were not received well by the locals and did not feel like they are one of the locals in that state. There is still this divide. In terms of the local skin color." This is relating to the idea that even in previous natural disasters inequality among minorities have been represented and stories is seen throughout the recovery process of hurricane Irma. Also, local communities can determine to help the minority or refugees that have been severely impacted from the hurricane and have the power to influence who is put into power to create policies and rights. If the perception of minorities and refugees are not well received then their rights can be affected significantly by not allowing access to resources, services, etc. The socio-economic aspect of hurricane Irma is similar to hurricane Irma, in the context that the lower income communities were more affected. "Hurricane Irma left thousands of families in Miami-Dade without power for days and without the ability to get to work. For Miami's most vulnerable low-income communities, it's a situation that compounds the poverty that existed long before Irma made landfall" (Marketplace Contributor, 2017). In this case, is important that policymakers make it imperative that they make policies, decisions, and plans to include the vulnerable groups.

"Climate refugees" rights had been affected negatively in hurricane Maria and hurricane Irma. They both had covid-19 make the recovery process a lot more difficult and longer, inequalities among the elderly, disability, and minority communities, and the lower income communities were more exposed to the ramifications of the hurricanes. Overall, policy-frameworks presently are not accommodating for the needs of all these subgroups and their rights are not being considered within the recovery process as much as they should be.

## Ch 5.2.2 RQ 3: The effects and long-term recovery from hurricanes

| Hurricane Maria | Hurricane Irma |
|---|---|
| ❖ **Negative effects: Financial instability, mental health issues, long term physical effects.**<br><br>❖ **Positive effects: Learning to respond to disaster recovery more effectively.** | ❖ **Negative effects: Mental health issues, some financial instability, long term physical effects**<br>❖ **Positive effects: Learning to respond to disaster recovery more effectively.** |
| ❖ **Long term recovery:**<br>❖ **Projects for better infrastructure.**<br>❖ **Sustainable food growth**<br>❖ **Solar Energy**<br>❖ **Lessons learn to improve inclusive migration policies.**<br>❖ **Implement better mental health facilities and resources to provide help** | ❖ **Long term recovery:**<br>❖ **Improving Migration and adaptation plans by being more inclusive.**<br>❖ **Coordinated Place- Based Recovery Support (CPBRS)**<br>❖ **Implement better mental health facilities and resources to provide help** |

There have been negative and positive effects from these both hurricanes. The negative effects from hurricane Maria are financial instability, mental health issues, and long-term physical effects. The financial instability effect plays a crucial role in how the recovery process is handled. Pre Maria the financial instability had been due to "Puerto Rico experienced a decade of economic decline and a debt crisis prior to the hurricanes, which contributed to a lack of investment in its physical and natural infrastructure" (J. R. Fischbach, L. Warren May, K. Whipkey, S. R. Shelton, C. Anne Vaughun, D. Tierney, K. J. Leuschner, L. S. Meredith, H. J. Peterson, HSOAC PUERTO RICO RECOVERY TEAM, 2020). Post Maria, many people left Puerto Rico and have not returned resulting in not improving the economy and making the recovery process not feasible even years later. The mental issues effect from hurricane Maria is one of the biggest issues that is still being faced today. The impacts of the hurricane can create anxiety, depression, PTSD, etc. This is especially seen in the youth and minority community. For example, "Puerto Rico's population of children and adolescents just prior to Hurricane Maria was an

estimated 657 000, suggesting that a large number of youths could experience mental health difficulties directly attributable to their exposure to this climatic event" (R.Orengo-Aguayo, R. W. Stewart,  M. A. de Arellano,et al , 2019). As a result of this case study that was done it showed there were significant effects of mental health among the youth that stemmed from hurricane Maria. "The main findings of the study indicated that youths in Puerto Rico experienced significant disaster-related exposures as a result of Hurricane Maria" (R.Orengo-Aguayo, R. W. Stewart,  M. A. de Arellano,et al , 2019). Hurricane Maria already had many mental impacts associated with it and then the pandemic made the recovery process a lot worse. According to the source from an organization I interviewed, "there was over 100,000 people who committed suicide because of the pandemic." The pandemic along with the stress from the effects of the hurricane and trying to rebuild their homes either back in Puerto Rico or new homes in other areas and starting over affects not only the youth but everyone else. Even though it is years later the effects still are felt today because of the pandemic and the recovery process still happening today. There were some physical effects on the area and people as well. To explain, the physical effects from the hurricane are the damages shown through pictures. The physical effect on people is developing health issues. "People developed respiratory, skin diseases and resulted in death." (Source from organization). The positive effect stemming from this disaster is learning how to implement better plans for the recovery process. For example, according to the source from the organization, "There needs to be plans that need to be more inclusive." From the negative effects, can create a positive effect to improving future response plans.

The long-term recovery efforts have been underway, there is still a lot of work that needs to be done. Some of these long-term recovery efforts include projects for better infrastructure, sustainable food growth projects, solar energy, lessons learned to improve inclusive migration policies and implement better mental health facilities and resources. Projects for better infrastructure, is the organization I interviewed stated, "they are working on putting the displaced people into apartments while they rebuild their homes." Also, recommended that there are "guidelines for hurricane resistant roofs " so that infrastructure can withstand future storms. Another project that the source mentioned that is already in action is the "Sustainable Food Project, in which the community learns how to grow food in small places." There are workshops that are provided; this is for future storms as well because during hurricane Maria many of the crops and farmland were destroyed, creating shortage on food supply. This would help in the long-term recovery effort because then people would be able to grow their own food. Another long-term recovery effort is solar energy, this in response to having no electricity on the island

for months. "In response, Direct Relief is equipping Puerto Rico's health centers, clinics and community facilities with more than 1 megawatt of solar production capacity and 1.7 megawatts of battery storage" (T. Morain 2019). Solar energy will be able to provide electricity, especially to mobile clinics and hospitals where electricity is essential. Finally, the lessons learned from this hurricane such as improving migration policies to be more inclusive and implementing better mental health resources. "Plans need to be more inclusive, such as mapping for people who are deaf" (Source from organization). Along with implementing better mental health resources by giving more information about it and where people can receive the help they need. All of these effects and recovery efforts are important for future disaster plan management, however according to my source from the organization "it will take 25 years to recover from hurricane Maria." This is why it is important to understand what the effects are from the disaster and plan accordingly.

In the case of hurricane Irma, the effects are similar, both negative and positive. The negative effects are mental health issues, some financial instability, and long-term physical effects. Mental health issues are apparent within the recovery efforts of hurricane Irma. For example, in an interview I conducted with the professor at university I asked, "Do you think that IDPs have mental, emotional and financial hardship?" The professor responded, "Absolutely, there is a difference between being at your home and the comfort aspect and that being stripped away. Then the pressure to move to another place and start over or living in the unknown." The mental anguish of uncertainty is the biggest driver of mental health issues because of not knowing whether they can find a job and receive an income to sustain life in the place they are living. "Then through a pandemic there brings another instability after just being settled" (Professor at a university). The pandemic adds another amount of pressure to mental issues because then there is the threat of people losing their income when they just received a job, and potentially being alone because of social distance and not being able to meet anyone. There is some financial instability with hurricane Irma, but not compared to hurricane Maria. In the previous section, it is mentioned when it came to receiving funding there was more aid that was distributed to the victims of hurricane Irma versus hurricane Maria. There is still some financial instability especially with infrastructure damage. "Hurricanes Harvey and Irma are estimated to have each caused between $42.5 billion to $65 billion in property damage, amounting to between 0.2%-0.3% of GDP, making these storms among the most destructive U.S. natural disasters in the post- WWII period" (J. Stupak, 2017). This represents that there is some economic instability with property damage and having people being able to re-build their homes and affecting the GDP so it may be harder to receive a job or get paid well.

There are also images of physical effects from hurricane Irma and the direct physical impact resulting in deaths. While the positive effects are learning to respond to disaster recovery more effectively. This includes planning for disaster locally and nationally as a needed basis with each state. According to the professor at a university, "It is all a matter of lessons learned, that should always be something positive, so if something happens next time then we are ready and prepare to see how we should be acting and how the government should be acting, and how it should be funded and provide all those resources." Therefore, each state can locally plan how to respond to a disaster as each of the needs of states are different.

For the long-term recovery process for hurricane Irma, it would include improving migration and adaptation plans by being more inclusive, Coordinated Place Based Recovery Support (CPBRS), and implementing better mental health facilities and resources. This includes creating migration and adaptation plans that include the needs of the elderly, disabled, and youth. Each of these subgroups have different needs that have to be accommodated. The CPBRS, is just one of many initiatives and programs that is part of the recovery process for hurricane Irma. "The goal of the program was to provide a framework for organizing and delivering federal, state, and private sector recovery resources in support of local recovery leadership, outcomes, and goals" (FEMA ). Some of the projects were to provide funding to improve infrastructure, irrigation systems and improve public safety. This is important for the recovery process as it can lead to other future projects that can develop for future disaster management and improve the recovery process. Lastly, implementing better mental health facilities and resources, and the importance of needing these plans especially with future disasters. "You need someone to help get you there and to seek that type of help and the lack of it has a huge impact" (University professor). If these resources are not implemented there will be more of a direct impact of death linked to natural disasters. Even though the effects and the long-term process of these two hurricanes are similar it is important to analyze them. The commonality of these two hurricanes will hopefully create enough of a pattern to enforce better mitigation, migration, and adaptation plans for the future. All of the interviewees all concluded that there needs to be better inclusive migration and adaptation plans for future response disaster management.

## Ch. 6 Conclusion

The term "climate refugees" and their rights is a very complex issue. Examining how certain social factors such as citizenship, inequality (ability for rights), power relations, and covid-19 have adverse effects on climate refugees. These two cases showed there are differences between how recovery efforts were implemented using the different frameworks. This includes inequality of two sites that are within the United States and how inequality can affect how the recovery process can be delayed or altered. Overall, climate refugee rights are not considered as much as other refugee rights because it is difficult to fully understand why climate refugees move as multiple factors can influence that decision. For future policymakers and decision makers it is important to emphasize inclusivity among the different subgroups and more equality of rights and policies. All of the national frameworks need to have specific sections of the recovery process of natural disasters, because there are no specifications for these subgroups. It is vital as well for each state to have their own recovery plan as well in order to be prepared for any natural disasters. Within these frameworks the concepts of migration, adaptation, discourses, human basic rights, inequality, etc. can improve future adaptation plans and policies. This topic was interesting to research and can be further analyzed through more interviews with actual climate refugees and quantitative data. The relevancy of this topic is essential for future generations and future decision-making processes.

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