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Displaced by Climate Change: A Global Comparative Historical Analysis

by

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Honors Thesis

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1. ABSTRACT:

Climate change impacts are displacing communities by undermining livelihoods, homes, and health. This study seeks to understand why some countries have better responses to people displaced by climate change by analyzing Bangladesh, Nigeria, Indonesia, Peru, and Vietnam through comparative historical analysis. A country's response to climate change-induced displacement was measured through disaster protocol, temporary relocation, permanent relocation, and long-term livelihoods after permanent relocation. The following variables were found to have a relationship with the strength of a country's response: previous migration experience, culture and social networks, community engagement, government coordination, institutional capacity, and trust in government. Countries with weak responses had significant previous migration experience, so previous migration experience does not have a connection with a better response. Cultures that are collectivist and prioritize communal responsibility tend to have better responses. Countries with limited social networks have weaker responses. A trend was that integrating community perspectives into programs strengthened the response. Countries with better coordination between government and relevant actors tended to have better responses. Countries with the least institutional capacity had the weakest response. Peru had the highest institutional capacity but did not have the strongest response. Countries with greater trust in government tend to have stronger responses.

2. INTRODUCTION

Climate change impacts are devastating the lives of millions of people globally by disrupting livelihoods, damaging homes, and diminishing community health. Among those affected is Rahima Banu (pseudonym), a woman from Bangladesh whose home was destroyed by climate change impacts. Rahima recounts her experience: “Where can I seek shelter in the village? I have nothing left... We lost all our possessions due to river erosion. There is no place for me” (Naz et al., 2024:95). After being displaced, Rahima and her family were forced to migrate and settled in a slum in Khulna. Rahima’s neighbor in the Rupsha slum, Hamida Begum (pseudonym), also suffered from a traumatizing experience of displacement: “Following Cyclone Aila, we exclusively utilized rainwater for cooking and saline water for all other purposes, including hand washing and sanitation. There was no lavatory or toilet available. My children were all suffering from dysentery [a gastrointestinal infection often caused by consuming contaminated water] and were unable to eat anything” (Naz et al., 2024:95). Stories of displacement like Rahima’s and Hamida’s are becoming increasingly common as climate change intensifies and induces more widespread and severe displacements.

There are several misconceptions common in discussions and debates about climate change both nationally and internationally. The first is that climate change is not real, or that global warming is in line with natural fluctuations of the climate. Scientists have found that since the Industrial Revolution, human-caused greenhouse gas emissions have caused the planet’s climate to change (NASA, 2024a). The impacts of climate change include global temperature rise, more intense and frequent natural disasters, drought, and flooding (NASA, 2024b). Another common misconception, seen

more in the global North, is that climate change impacts have not materialized yet but will be severe in the future. Unfortunately, climate change impacts are currently transforming the lives of millions of people globally by impairing their livelihoods, housing, and health (UNHCR, n.d.) (Siegfried, 2023).

The United Nations Framework Convention on Climate Change (UNFCCC) divides climate change impacts into two categories: slow-onset events and rapid-onset events. Slow-onset events occur gradually over the course of several years (UNFCCC secretariat, 2012). Events that are classified as slow-onset impacts of climate change include sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization (which degrades soil and aquifers), land and forest degradation, loss of biodiversity, droughts, and desertification. In contrast, rapid-onset events are single, identifiable events that occur over just a few days or hours (UNFCCC secretariat, 2012). These include natural disasters such as severe flooding, storms, hurricanes, and tornadoes.

According to the UN Refugee Agency (UNHCR), internally displaced people (IDPs) are “persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized border” (United Nations Human Rights Office of the High Commissioner n.d.). Internally displaced persons are different from refugees in that refugees have crossed an international border into another country, while internally displaced people remain displaced within their own country (United Nations Human

Rights Office of the High Commissioner, n.d.). People that migrate to another country because of climate change impacts are commonly referred to as “climate refugees,” but this term does not necessarily encompass internally displaced people. According to the former Secretary-General of the United Nations, Ban Ki-moon, displacement remains one of the most “significant humanitarian challenges” in the world (Eweka & Olusegun, 2016). Climate change has become the leading cause of displacement, not only because of the increasing severity of natural disasters that destroy communities, but also because climate change acts as a “threat multiplier” that worsens other causes of displacement (Siegfried, 2023). Essentially, climate change escalates pre-existing factors that lead to displacement, including poverty, loss of livelihoods, and dwindling resources. In more cases, resource scarcity may lead to violent conflict.

Climate change is forcing people to migrate; the Intergovernmental Panel on Climate Change predicts that the greatest impact of climate change is likely to be on migrational patterns (International Organization for Migration, 2008). In 2022 alone, climate change impacts displaced 32.6 million people (Siegfried, 2023).

Climate-induced internal displacement is projected to continue increasing at a rapid rate, consistent with the 41% increase in displacements from 2008 to 2022 (Siegfried, 2023).

Norman Myers, a professor and analyst from Oxford University, has estimated that there will be 200 million climate migrants by 2050 (International Organization for Migration 2008). This is a rough estimate that relies on assumptions and approximations, as predicting the future with complete certainty is impossible. However, it is a widely used and evidence-based estimate. It represents one in every 45 people in

the world being displaced by climate change impacts in 2050. This daunting prospect illustrates the importance of ensuring quality treatment of those internally displaced by climate change.

There is strong evidence that shows that most people displaced by climate change impacts migrate internally, as opposed to internationally (Adamo & Izazola, 2010). Internal migration is more frequent than international migration because of a variety of factors. One is that these individuals often have their livelihoods disrupted by climate change impacts, so they do not have the economic resources to migrate internationally, which requires investment in documentation and travel logistics. Also, it is more difficult to find livelihood and housing opportunities internationally due to a lack of social or familial connections, in addition to discrimination against immigrants in the employment and real estate market (Ogunwande, 2021) (Naz et al., 2024). People also often feel a sense of identity and cultural ties with their country and would prefer to remain in their country of origin for familial, ancestral, cultural, social, and personal reasons (Khan et al., 2021).

Climate change can lead to displacement in a variety of ways. One is that individuals' livelihoods are made significantly less profitable or impossible. This is often the case with agricultural livelihoods, as climate change impacts like drought, flood, erosion, salinization, water pollution, desertification, sea level rise, ocean acidification, and increasing temperatures make agriculture, including farming and animal rearing, significantly more difficult, less profitable and productive, or not feasible. Secondly, with rapid-onset climate change, people's safety is put in danger, so they have to be evacuated and either temporarily displaced or permanently relocated. Thirdly, another

type of displacement that is becoming more common is coastal populations being displaced because of sea level rise. Their places of work, education, or housing are often located in areas that are prone to flooding, and they are displaced as a result. Another impact that is increasingly leading to displacement is drought, as people do not have the water to support their livelihoods, and in more severe cases, to support their basic needs for drinking water and cooking. In places with either high levels of flooding or drought, people resort to using unclean water, which results in health problems such as water-borne diseases (Ogunwande, 2021).

People that are displaced often have the autonomy to make a decision on where they want to relocate. They can choose to go back to the community from which they are displaced, which is common as people often feel an emotional connection to their hometown and want to restore their life (Khan et al., 2021) (Naz et al., 2024). Another option is relocating to another town or city. This may be facilitated by the government, which may relocate individuals, families, or a whole community. More often, the relocation decisions are based on the individual's connections to housing and employment opportunities (Naz et al., 2024). People are thus likely to follow their social networks and migrate to large cities.

Climate-induced internally displaced people become dependent on the assistance of the national governments, host communities, or external assistance to become acclimated and successful in rebuilding their lives (Williams 2008). Internal displacement treatment thus needs to be addressed both internationally by international organizations and nationally by governments, NGOs, and communities themselves. The

scope of this paper will focus on the response of the national governments and communities.

This paper aims to answer the following questions: **(1) Why are some countries doing better than others in their treatment of these IDPs? (2) And what determines a country's response to climate change-induced internal displacement?**

The language referring to people as “displaced” by climate change is subject to some debate. Many terms have been used in relevant literature, including “climate refugees,” “climate migrants,” “environmental migrants,” “climate-induced displacement,” “climigration,” “eco-migrants,” and more. The term “climate refugee” is often criticized because the term refugee implies helplessness and vulnerability. The IOM endorses the terms “migrants” and “migration,” and specifically climate change-related migration (Brown 2008). The UN Paris Agreement on Climate Change categorizes migrants displaced by climate change as a completely separate group (Naser et al., 2019) from those migrating for other reasons. There are also debates about what constitutes voluntary or involuntary migration due to climate change impacts and governments requiring evacuations. The definition and categorization of IDPs is thus sometimes blurry and subject to controversy, and this is important to keep in mind when viewing existing literature as well as this paper's contribution.

3. LITERATURE REVIEW

This section aims to give an overview of the existing literature on how countries respond to populations that are displaced by climate change. I developed indicators that measured my dependent variable, which is the effectiveness of a country's response to

climate-induced displaced persons. As I researched this topic, I took note of elements that could be used to measure the dependent variable. During this process, I decided that the study should focus on execution rather than mere on-paper commitments or goals. I also made the decision to exclude adaptation because the paper focuses on remediation efforts, and this distinction will be expanded on in subsequent sections. I identified four major parts of the countries' responses to people displaced by climate change. These indicators are as follows: (1) disaster protocol, (2) temporary relocation, (3) permanent relocation, and (4) long-term livelihoods after permanent relocation.

The disaster protocol indicator addresses evacuation, which is the first part of a country's response to an environmental event caused by climate change, such as amplified natural disasters. Temporary relocation examines the sheltering of evacuated or displaced populations in emergency camps. Permanent relocation discusses the options for people to be relocated to areas that have better opportunities and are comparably safe from climate change hazards. The long-term livelihood indicator discusses the integration of the people into communities, focusing on access to productive, profitable, and sustainable employment opportunities.

Dependent Variable

The dependent variable that these indicators aim to measure is the quality of a country's response to climate-induced displaced persons. The finalized indicators are as follows: (1) disaster protocol, (2) temporary relocation, (3) permanent relocation, and (4) long-term livelihoods after permanent relocation.

Importance of Disaster Protocol

A strong disaster response is a critical first step in managing climate-induced displacement, as it is essential that communities are evacuated from at-risk areas so that they survive the disaster.

Effective disaster response depends on the coordination of stakeholder groups, including the local, state, and federal levels of government (local, state, and federal), EMS, public health, emergency management, hospital facilities, and the outpatient sector (Gostin et al., 2019). Authorities should have sufficient contingency plans that allow for changes in expectations and procedure in order to provide the best care depending on the circumstances of the disaster (Gostin et al., 2019).

Chan, an expert in humanitarian response, argues that there are three major downfalls to disaster response in the modern era (2017). Firstly, there is an issue with disaster literacy and preparedness among communities. The effectiveness of disaster response depends largely on how informed disaster-prone communities are about appropriate actions following a calamity. Community attitude is also indicative of how a community will respond — if communities take the disaster seriously, they are more likely to follow safety precautions. This depends on the culture and level of education that the communities have on environmental hazards. Another common issue is the management of community volunteers in disasters. This includes the coordination, accountability, and mobilization of the volunteers. Thirdly, Chan argues that stakeholders need to better utilize technology such as the Internet, including social media platforms, as well as combat inaccurate information on the Internet that spreads misinformation and hampers effective disaster response actions (Chan, 2017).

Communication during a disaster is essential to mobilizing communities as well as building community resilience. The communication strategy should be proactive and interactive and use a variety of communication channels, including media coverage (Chan, 2017). The World Health Organization has discussed seven steps for effective communication during public health emergencies like natural disasters: assessing media needs, developing goals, plans, and strategies, training communicators, preparing messages, identifying media outlets and activities, delivering messages, and evaluating messages and performance (Hyer & Covello, 2005). Early warning systems provide important information to inform people's decision-making and actions in a timely fashion. This information provided through the early warning system should be specific to the available resources in the relevant communities as well as their specific needs. Generally, the UN advises that early warning systems should include the four following elements: risk knowledge, which includes risk assessments and systematic data; monitoring and warning service, which involves developing hazard monitoring based on scientific evidence; information dissemination, which entails communication of the risk information and early warning to the communities that are at risk; and building national and community response capacities, which is accomplished through systematic education, preparedness programs, and training for the communities before the disaster takes place (United Nations Office for Outer Space Affairs (UNOOSA,) n.d.).

Avenues of transportation are exposed to climate change impacts such as floods that damage roads and bridges and heat waves that ground airplanes (Chalaris, 2023). Thus, governments must take proactive action to build transportation systems resilient to climate change impacts, so that natural disasters have reliable transportation

networks to use in cases of emergencies (Chalaris, 2023). It is important that people are quickly relocated to evacuation sites to minimize the loss of life and human injuries in a natural disaster. There is a need for clear communication to individuals to help them understand the evacuation routes that they should be taking, based on their location and the trajectory of the disaster. People need easily accessible communication about evacuation routes, evacuation sites, and the number of victims (Chalaris, 2023).

Disaster protocol focuses on minimizing loss of life by moving people out of at-risk areas before disasters strike. The worst response to natural disasters is to ignore them and neglect the impacted communities, as this results in the highest loss of life. To have adequate disaster protocol, a country must have comprehensive warning and evacuation systems. It is important that warning systems give communities ample time to prepare for evacuation. Strong warning systems reach the whole community, rather than relying on social networks' word-of-mouth. Evacuation systems are responsible for ensuring that communities are moved out of at-risk areas effectively, including adequate road conditions and transportation methods that can move a great number of people in a short time span.

It is important to not only have these protocols, but also to distribute this information with the affected communities that will need to evacuate. When discussing evacuation with communities, it is crucial to emphasize the importance of evacuation and the danger that natural hazards will have on their safety. The quality of this dissemination of information with local communities about disaster protocol can be measured by the number of people that evacuate, if they evacuate effectively using the correct path and transportation systems, and if they return to the disaster-prone area

too soon because they do not understand the danger or do not take it seriously. In some cases, local authorities even help them do this. However, there are socioeconomic and demographic factors that influence this return to the risky areas, such as people being so destitute that they are willing to risk their lives to ensure the safety of their assets such as livestock. There are also political influences that affect how seriously people take natural disasters and climate change impacts, as well as how much they trust the government. For example, widespread climate change denial in the United States can hinder evacuation efforts, as some individuals may choose not to comply due to personal beliefs that dismiss climate change as a hoax. Also, if people do not trust the government, they do not believe what is being said about the natural disaster being dangerous or fear they will not be protected in the evacuations. An additional component of disaster protocol is the aftermath of natural disasters that involves reconstruction efforts — how well the country manages community reconstruction and reimbursing them for their losses, whether that be through private or public (government) insurance. It is crucial that countries have contingency plans in preparation for disasters and climate change impacts being more intense than what scientists anticipated and emergency services prepared for, and this phenomenon has had increasing prevalence because of climate change. Thus, there needs to be contingency plans that accommodate additional communities that need to be evacuated — additional temporary refuge sites thus need to be on standby. These contingency plans need to be updated frequently because politics, natural disasters, climate change, and science are constantly changing, and contingency plans need to have updated information on these matters in order to be applicable. During natural disaster

evacuation periods, there is not time to make new plans, so there needs to be contingency plans for everything that could change during disasters so that people are able to evacuate quickly and loss of life is minimized.

Importance of Temporary Relocation

Governments need to provide temporary housing for displaced individuals, as inadequate infrastructure often forces people to rely on limited social networks, which are often composed of friends and family from the communities from which they were evacuated.

According to the World Health Organization (WHO)'s all-hazard approach, the coordination, information tools, and basic health services need to include the following in their emergency preparedness plan: environmental health, management of chronic disease, maternal and child health, communicable diseases control, nutrition, pharmaceuticals, and health care delivery services. From this, these should all be prioritized in the temporary relocation sites for climate change-induced internally displaced persons (Chan, 2017).

Furthermore, it is crucial that countries have adequate temporary housing structures so that these buildings are not overcrowded with displaced persons. In countries without sufficient housing infrastructure, overcrowding often leads to the spread of disease (Ekpa & Dahlan, 2016).

It is vital that countries have ample infrastructure set aside to potentially be used as temporary shelters in cases of emergency. Otherwise, the government is forced to quickly repurpose existing infrastructure, which is already serving an essential function, into emergency shelters. This not only disrupts the provision of the original service but

also deprives the community of its intended benefits (Chan, 2017). For example, schools are often forced to close to be converted into temporary camps. As a result, children won't be able to receive education. This shelter site needs to have enough land, housing, and resources to support the amount of people that are displaced; the camp should not be too overcrowded. If a camp is too crowded and does not have proper sanitation, disease outbreaks are likely to occur, which are not adequately treated. There not only must be enough of the camps to accommodate the displaced people, but also they must be located in places that are not prone to environmental disasters that will displace the individuals again.

It is crucial that the physical, mental, and economic integrity of the refugees is protected. To protect the physical health of the displaced people, the camp must provide essential services and resources, including healthcare, medical aid, food, clean water, sanitation, and sufficient space. This involves ensuring adequate infrastructure of camps so they are safe from violence and are not going to be indirectly or directly involved in conflict, like using the camps as bases for combatants. Another priority in these refugee camps is reunification with family members, as many people are separated from their family members in evacuation and displacement processes, which are prone to being hectic and disorganized; if a family member is lost or declared dead, then the family members are entitled to know this status of their family members. This involves organized registry systems that keep track of all displaced individuals (Mei et al., 2013). It is essential that basic rights like life and liberty are protected in these refugee camps, which brings up humanitarian issues. For example, the sexual or physical abuse of displaced persons (Ogunwande et al., 2021).

An ideal temporary camp provides refuge for displaced persons for an adequate but not extensive amount of time. If the camp holds the people for too short of a time, the displaced people have nowhere to go and are likely to return to the unsafe homes from which they were displaced. If the camp holds the individuals for too long, they will suffer economically as they will not be integrated into livelihoods and will feel a lack of community and identity without being permanently relocated or permitted to return to their original homes.

Importance of Permanent Relocation

There are a few different approaches to permanent relocation. The first is “whole-community relocation,” which involves the relocation of an entire community to a brand-new town or city. The second is “colocation,” which moves a displaced community to a nearby town or city that already exists. The third approach is the government leaving communities to make relocation decisions on their own.

There is significant debate among academia over the best terminology for the first approach, which may be referred to as “transformation adaptation,” “planned relocation,” “community-based relocation,” “managed retreat,” or “whole-community relocation.” This approach involves an entire community abandoning their current housing, assets, and public infrastructure and relocating to an undeveloped area that is less vulnerable to environmental hazards (Jha et al., 2010; Lonsdale, Pringle, & Turner, 2015; Herrmann, 2017). This new location is independent of any pre-existing town or city and allows the community to settle together at a completely new site. This involves the acquisition of land, building of roads, and construction of new infrastructure. The main disadvantage of this is that it has a high initial cost, but it can be argued that it is

less expensive over time because it is a long-term solution that ensures that people no longer have to be evacuated and relocated (Herrmann, 2017). The community's identity and sense of normalcy are maintained by being moved with the rest of their community, and this results in a high quality of life for inhabitants.

Transformational adaptation has cultural, social, and psychological benefits. But the economic cost is far greater compared to alternatives. Building completely new infrastructure including sewer systems, schools, and transit routes is extremely expensive. A poorly executed transformational adaptation is likely to result in community members leaving the new site because it has inadequate infrastructure. An unsuccessful transformational adaptation relocation hurts the government economically, the community culturally and psychologically, and leaves the community remaining displaced. The likelihood of this relocation method being unsuccessful is high because it requires a great amount of time, expertise, and connections to adequately plan (Herrmann, 2017).

Another relocation approach is called "colocation," which moves the displaced community to a nearby existing town or city. This approach is less costly, in comparison to transformational adaptation. Colocation involved expanding the housing and infrastructure of the existing town (Herrmann, 2017). One of the downsides of colocation is that it hurts the community's cultural identity since they are combined with another community. In some cases, colocation results in discrimination towards the relocated community; forms of discrimination include confinement to substandard living conditions, economic marginalization, and social isolation. If discriminatory treatment occurs, a substantial portion of the relocated community is likely to disperse to other

areas. Colocation, and displacement itself, disrupt social networks such as interpersonal relationships that facilitate the sharing of resources (Herrmann, 2017). Thus, it is important to be sensitive to the social networks of the community and to try to maintain community connections and identity during permanent relocation efforts. The colocation relocation method also encounters issues when the host community and relocated community have pre-existing tensions with one another. Thus, it is essential to consider historical and systematic contexts such as racial, ethnic, and religious affiliations that may carry bias in cultural contexts and result in hostility between the new and existing community during colocation relocations (Herrmann, 2017) (Martin et al., 2014).

If relocation efforts are not facilitated by the government or relevant organizations, then the communities are left to make the decision on their own. They are likely to return to their community that they were displaced from, or follow their social networks to towns or cities that they reside in, which are often overcrowded cities (Ogunwande, 2021). Large cities that displaced persons migrate to are often overpopulated and facing health, environmental hazards like pollution and flooding, and sanitation issues, as well as potentially running out of job opportunities (Adger et al., 2020). Another issue with housing in these overcrowded cities is landlords are able to be exploitative and provide tenants with sub-par housing and charge them extra without adequate reason (Adger et al., 2020).

Research has found that the most effective policies facilitate the movement of whole communities to areas with lower population density that have the capacity for development. This involves comprehensive government assessments of potential relocation sites with the capacity to handle a large influx of migrants. This involves

assessing the availability of housing, land for agricultural job opportunities, and non-agricultural employment opportunities in a given area that is being considered for community relocation. This strategy has been referred to as the development of “counter-magnets” cities — attracting people to areas other than the largest urban city (Azmy, 2021). It is also important that the government is moving communities to lands that have the capacity to support agricultural livelihoods with adequate soil quality. It is also essential that this relocated site is not vulnerable to environmental hazards, so that the environmental refugees do not have to be relocated again.

When communities are relocated, they may or may not be given financial compensation for their land. In some countries lump-sum payments are provided, which only help with immediate food needs. Without land compensation, it is up to the individuals or family to sell their coastal, unwanted, land, which they often are unable to accomplish, so they are forced to abandon it without compensation.

It is crucial to uphold the integrity of individuals by ensuring they have autonomy and agency during relocation. Thus, people should have the ability to choose where they wish to go, including the option to return to their community, even if it is vulnerable to climate change impacts. To support this, some countries offer displaced individuals a selection of potential resettlement locations.

It is crucial that planned relocation takes place before the full extent of loss and damage takes place, as opposed to moving people after extensive damage is done and their assets are depleted. Another important aspect of permanent relocation is ensuring access to welfare programs because a great number of these refugees lost their assets and need welfare programs. Unfortunately, some welfare programs require people to

have a permanent place of residence, which a great amount of displaced individuals lack because they reside in urban slums.

While the hardware (physical logistics of infrastructure) of relocation is important, it is also crucial that the software (social and cultural elements) is adequate for these relocated sites as well. This includes the culture, organizations, hospitality, and overall making the transition smooth socially. Whole-community relocation has been found to be better for social and cultural reasons, so that people feel they can maintain their culture and social ties despite having lost the physical community that they were displaced from. Another important aspect of software is ensuring people are not relocated to areas that physically are not able to accommodate them. It is also important to consider ethnic, religious, and cultural tensions when planning relocation to reduce the likelihood of host populations being hostile or violent towards the relocated individuals or community. When dealing with nomadic lifestyles and subsistence farming (a method of farming that only produces enough food to support one's family,) it is crucial that resources are being distributed adequately so that populations do not have high competition levels and consequential conflict and violence. Conflicts over scarce resources need to be as minimal as possible, and the government needs to be involved in reducing this conflict.

Importance of Long-term Employment

Brand's 2015 study on the impacts of job loss shows the impact of consistent, long-term employment on Americans. These results can be referenced to show why long-term employment is an important indicator of how successfully the government took care of internally displaced individuals, because employment has impacts on

individual wellbeing, integration into society, and social groups of the community (Brand, 2015). Firstly, lacking consistent, long-term employment has an indisputable negative impact on income flow (Sullivan and von Wachter 2009). It also has detrimental impacts on the individual's feelings of normalcy associated with having a regular time structure and schedule. Long-term employment is also associated with feelings of worth, satisfaction, fulfillment, and purpose by demonstrating skills and competence in an employment setting (Brand, 2015). The unemployed status also carries a stigma that creates feelings of anxiety, insecurity, and shame for the individual (Newman. 1988). Unemployed individuals tend to experience chronic stress from consistent economic, social, and psychological strain that comes from their unemployment situation (Pearlin et al., 1981). Long-term employment has impacts on individuals' self-esteem, self-acceptance, self-confidence, morale, life satisfaction, sense of purpose, and sense of control (Darity & Goldsmith, 1996; Jahoda, 1982; McKee-Ryan et al., 2005). Lack of employment has been linked to short and long term declines in physical wellbeing and health including physical disabilities and cardiovascular diseases (Charles & Stephens, Jr. 2004) (McKee-Ryan et al., 2005) (Brand, 2015). It is difficult to prove causation in this case of physical health and unemployment because of selection bias, but a significant association has been found (Brand, 2015). Psychosocial assets and social support have also been found to degrade with job loss (Eliason & Storrie 2009). People that have experienced job loss have an increased likelihood to have family tension and family disruption (Attewell 1999) (Charles & Stephens, Jr. 2004). Thus, the impacts of lack of consistent employment are not isolated to the individual, but impact the entire family, especially the children. Stable employment, as well as lack of periods of

unemployment or downward career trajectory, has been found to be associated with higher levels of social integration (Wilensky, 1961) (Wilson & Musick, 1977). Another study found that individuals without consistent employment are significantly less likely to be a part of social participation groups, which provide psychological benefits and boost feelings of belonging (Brand & Burgard 2008). Thus, consistent employment is important to the social wellbeing of the individual, family, and overall community.

Assistance provided for relocated individuals includes resources and training that provide individuals with transferable skills to help them succeed in their new jobs (Miller & Dun, 2019). For agricultural jobs, it is essential that individuals are given arable and ample land, farming tools and resources, and education on how to successfully farm in the new environment, which may support different crops than their original farm (Alam & Endacott, 2022). There are also government programs that can assist people in attaining long-term employment, such as job placement centers and job training and certification centers (Tuan, 2018).

Indicators That Were Not Chosen but Inform the Study's Analytical Scope

These potential indicators of the dependent variable were considered throughout the research but were ultimately excluded from the final indicator criteria. While they were not directly incorporated, they played a significant role in shaping the scope of the paper and guiding my analysis. They helped define the boundaries of the chosen indicators and provided a methodological foundation that influenced the overall discussion.

Adaptation Efforts

Adaptation efforts, synonymous with structural solutions, were initially collected because better adaptation efforts result in less displacement and need for remediation efforts that go beyond structural solutions. While adaptation efforts are important, climate change impacts have reached the point where they are not going to be enough in ensuring the long-term safety and prosperity of people residing in at-risk areas. Examples of structural solutions that qualify as adaptation instead of remediation efforts include farmers using different crops, temporary barriers against flooding such as levees, and improved draining and pump systems to reduce flooding. Therefore, in-depth discussions of adaptation efforts were excluded from this analysis because this study views them as temporary, unsustainable solutions to climate change impacts. Adaptation efforts may be discussed briefly when relevant, but they do not qualify as treatment of people displaced by climate change as displaced persons need long-term relocation efforts, rather than structural fixes that only have the capacity to protect people from being displaced for a short amount of time.

Legislative Commitments

The on-paper commitments and goals of legislation that pertains to people displaced by climate change was considered as an indicator but was ultimately excluded because the implementation and impacts of the legislation are measured through the disaster protocol, temporary relocation, permanent relocation, and long-term livelihoods after permanent relocation indicators. Policies and programs can be well-written and have ambitious, exemplary goals but completely fall short in implementation, as is the case with several policies detailed in this study. Programs and

policies can also have unintended consequences that cannot be anticipated or measured by reading the legislation itself. Therefore, I made the decision that on-paper commitments are not indicative of the actual impact that legislation will have, and therefore only implementation of legislation will be considered in measuring a country's response to climate change-induced displacement.

Frameworks

Existing frameworks developed by researchers to assess impoverishment, climate change resettlement, security in urban contexts, and deprivations for urban dwellers were considered during the construction of these indicators. These frameworks were not fully adopted because they are flawed, as they often fall short in practice. Researchers have developed frameworks to measure national responses to climate change. However, these frameworks shaped the scope of the indicators and provided a conceptual foundation that guided my research.

Impoverishment Risks and Reconstruction Framework.

The impoverishment risks and reconstruction (IRR) framework discusses the most significant challenges that are faced by displaced people. This includes being unemployed, homeless, landless, marginalized, food insecure, having diseases, losing access to common property resources, and being disconnected from their community (Cernea 2000) (Walelign & Lujala, 2021). These make displaced persons more likely to become impoverished, and this framework was considered when I discussed the strengths and weaknesses of permanent relocation programs. This framework fails to address diversity in individuals' and communities' willingness to participate in relocation

and the engaged role of communities in relocation programs, which is addressed in my analysis. (Walelign & Lujala, 2021).

Climate Change Resettlement Capacity.

The climate change resettlement capacity (CCRC) framework discusses assets important to resettlement of people displaced by climate change: “natural assets, financial assets, human capital infrastructure, physical capital infrastructures, social capital and conditions – access to assets, quality of assets, socio-economic context, institutional strength, violent conflict, and natural hazards” (Walelign & Lujala, 2021). These were considered when choosing the independent variables.

Elements of Human Security Relevant for Urban Settings.

Ager’s Human Security Index includes nine elements of human security relevant for urban settings: “Food security, access to sanitation and clean water, risk of infectious diseases and exposure to hazards are elements that have significant sensitivities to environmental conditions, including weather conditions. Housing, tenure and the stability of livelihoods are economic dimensions also likely to be highly sensitive to environmental and weather-related risks, though mediated through markets and institutions. Social elements of the index include political voice, fear of crime, and sexual harassment and may be less directly sensitive to environmental risks” were considered for the evaluation of welfare conditions in the temporary and permanent relocation sites (Adger, 2020).

Deprivations for Urban Poor Populations.

Satterwaite identified “eight interrelated deprivations for urban poor populations: (1) inadequate income, which pushes them toward the poverty trap; (2) unstable or risky

asset base (nonmaterial and material, including job, social attainments or endowments, and housing); (3) inadequate shelter; (4) inadequate provision of public infrastructure (safe water, sanitation, drainage, roads, footpaths, etc.); (5) inadequate provision of basic services (day care, schools, health care, emergency services, public transport, communications, and law enforcement); (6) limited or no safety net to ensure basic consumption to cope during income falls; (7) inadequate protection of poorer groups' rights through the operation of the law; and (8) voiceless and powerlessness within political systems and structures" (Satterwaite, 2003). These deprivations for urban impoverished populations were considered when discussing the success of permanent relocation efforts and long-term employment with permanent relocation.

Finalized Dependent Indicators

Thus, these four dependent indicators — (1) disaster protocol, (2) temporary relocation, (3) permanent relocation logistics, and (4) permanent relocation long-term livelihood availability — comprehensively measure the success of a country's response to climate change-induced internally displaced people. Disaster protocol is the first stage of protecting displaced people as they must be immediately evacuated from at-risk areas to ensure their safety. Temporary relocation is important as this is the next phase of displacement when individuals cannot return to their homes and need temporary refuge in emergency camps. In order for individuals to not be consistently vulnerable to becoming displaced, long-term solutions need to be pursued with permanently relocating individuals and communities. People need to be able to have financial stability in their new communities where they have permanently migrated to with long-term livelihoods.

4. METHODS

Comparative Historical Analysis Methodology

Most existing literature on climate displacement consists of case studies of countries or comparative analyses that compare extremely similar countries within the same region. This study aims to differentiate itself from existing literature by identifying the factors that contribute to some countries having a better response to climate change-induced internally displaced persons than others. To accomplish this goal, the format of comparative historical analysis was chosen for this study.

Comparative historical analysis is a method that seeks to answer a question that has not yet been answered but has evidence available that can be used to answer the question. The comparative historical method analyzes each case in depth, and then finds differences among the cases that predict the phenomenon that is being studied, the dependent variable of the study. The cases need to be similar enough to each other, so variables that have a relationship to the dependent variable can be identified, rather than confounding variables or extraneous factors. Thus, when I chose cases (countries) for the study, I had to ensure that these countries were relatively similar to one another in terms of economic resources; this was measured through GNI per capita, which is the average income of an individual in a given country. The GNI per capita was the most appropriate measure for this study because it reflects a country's overall economic capacity to respond to displacement, including funding and implementing policies. GNI provides a more accurate figure than other economic measures such as GDP because it includes income earned from abroad such as remittances.

This method uses an inductive approach, which is a bottom-up approach that examines data (in this case the relevant literature) and constructs the study around it. Through examination and analysis of literature spanning the five countries, I identified patterns that are present across the analyzed cases (Kreuzer, 2024). Through this, I was able to find substantial literature that discussed the countries' responses to people displaced from climate change, and then I identified patterns that were consistent across the countries.

With this in-depth analysis of cases, researchers use this evidence to create conceptual understandings of the case material (Mahoney, 2004). This is how I created the dependent variable indicators as well as identified the independent variables. The dependent variable, in this case response to climate-induced IDPs, needs to be operationalized into indicators, so that each case can be measured. In this study, I operationally defined the dependent variable of treatment of people internally displaced by climate change with the following indicators: disaster protocol, temporary relocation, permanent relocation, and livelihoods after permanent relocation. In the comparative historical analysis method, once the dependent variable is operationalized through indicators, the cases are scored based on those criteria (Mahoney, 2004). I accomplished this by scoring each country on my dependent indicators with the following levels of quality: low, medium, and high, which were put into a chart. This method of operationalization was also performed for the independent variables.

It should be noted that indicators have different meanings across different contexts (Mahoney, 2004). For example, the permanent livelihoods indicator has

different expectations for quality long-term employment depending on the country, which all have different employment opportunities, average wages, and major industries.

This method is advantageous as opposed to looking at individual case studies because looking at only one historical case misses important patterns across cases, and may focus on factors that are only relevant to that specific case. Statistical analysis, while having the benefit of comparing multiple cases, has several disadvantages. This method measures the prevalence of specific variables that are pre-determined before the analysis; these variables that are measured are hypothesized to be significant but the researcher could be incorrect. The statistical analysis approach may be oversimplifying when dealing with complex, rich history because it turns variables into quantified data (Kreuzer, 2024).

Choosing countries

Prioritizing Geographical Diversity

To understand the impact of the independent variables on countries' treatment of people displaced by climate change, I needed to choose countries that have diverse geography and substantial climate change impacts. For a country to be considered, it needs to have a substantial amount of people displaced by climate change, so that there is enough research on the country's response and their impacts to conclude operational scoring and identify patterns.

I wanted this study to be representative of the whole world, so I ideally wanted every region and continent in the world to be represented in the analysis. Europe is not represented because European countries did not have a substantial amount of climate-change induced displaced people because they generally have the financial

capacity for large-scale structural solutions. Climate change impacts are also not quite as severe in European countries because of the geographical nature of global warming, which is currently impacting countries that are geographically closer to the equator (IDMC, 2018). Antarctica is also not represented because there are not a substantial number of inhabitants in Antarctica to be studied (IDMC, 2018). Thus, countries were chosen on the basis of prioritizing geographic diversity so that different regions of the world are represented adequately and the findings of the study can be widely applicable.

Isolating the Cause of Displacement to Climate Change

A range of refugee and internally displaced person statistics were considered, primarily collected by international organizations. After careful consideration of numerous sources, the source with the most updated statistics on climate refugees was the Internal Displacement Monitoring Centre and the United Nations High Commission to Refugee Agency, which provided statistics on internal displacements and their cause, which was either conflict or disaster (IDMC, 2018). A key resource that was referenced was their world map that included the number of refugees in 2017 due to conflict and the current number of refugees due to climate change impacts, specifically disasters (IDMC, 2018). This comparative tool was especially helpful to this study since it not only included the number of environmentally-induced refugees, but also the number of refugees due to conflict, which needed to be understood so that countries could be selected with significantly more refugees due to climate change impacts rather than other causes. Countries that have phenomena that were a greater cause of internal displacement as opposed to climate change impacts were ruled out so that the

responses to internally displaced persons were primarily concerning environmental displacement. These confounding causes included countries with high amounts of displaced people from famine, civil war, high levels of violent terrorism, significant international war, ethnic or religious based violence, and genocide, compared to climate change impacts.

Since I wanted this study's countries' largest contributor to internal displacement to be climate change, countries that had significantly more refugees due to confounding causes of displacement, which were primarily conflict and violence, were excluded. Countries with substantial climate-induced displaced persons compared to confounding displacement causes were studied in-depth through reading peer-reviewed relevant literature. These countries were the United States, China, Pakistan, Ethiopia, Vietnam, Bangladesh, India, Kenya, Nigeria, the Philippines, Indonesia, Brazil, Somalia, Cuba, Peru, Madagascar, Myanmar, and Mozambique. These countries were all categorized by the quality of their response to climate change-induced persons, as weak, moderate, or strong. Some of these countries were ruled out after more in-depth research because of the previously mentioned reason — their non-environmental reasons for displacement were too significant.

Country Not Chosen Because it has More Internationally Displaced Persons than Internally Displaced Persons

India was ruled out because it did not fall under the scope of this study, which is specifically focusing on internally displaced people due to climate change as opposed to international climate change-induced migrants; these countries did not have enough internally displaced climate refugees, and rather the majority were from other countries.

Because Bangladesh is more low-lying (lower elevation) than India, the impacts of climate change are impacting them sooner, compared to India which is not experiencing the impacts of climate change as much. As a result, India has more change-induced migrants from Bangladesh than from their own country, as of 2025. It cannot be assumed that India's response to international climate migrants will be the same as their response to IDPs, and therefore they cannot be used in this comparative analysis.

Countries Not Chosen because of Insufficient Literature

Most of Brazil's literature had to do with international laws and not their national policies, dynamics, and experiences of internally displaced refugees in the country. There was also a difficulty finding English or translated to English sources from Brazil, likely because of the developed nature of Brazilian research. For these reasons, Brazil was not included in this analysis.

Cuba was ruled out because of insufficient literature, specifically negative literature. While a substantial amount of literature could be found praising Cuba's responses to natural disasters and treatment of climate change-induced internally displaced persons, there was significant difficulty finding negative literature on the subject or literature that criticized their responses in any way, even in minor ways. Thus, the literature was not an encompassing, comprehensive representation of Cuba's response to climate change impacts and people displaced by them, and therefore Cuba could not be compared to other countries that did have comprehensive literature. This is likely because of the restrictive nature of Cuba's media due to their authoritarian government. Thus, Cuba was ruled out because of its non-comprehensive availability of relevant, non-biased literature.

Countries Not Chosen because of Economic Capacity

All of the countries remaining fit the criteria of having a significant amount of climate—change induced internally displaced refugees without a significant amount of people displaced by other causes. Because the countries in this study should be comparable, and generally similar in terms of capacity to respond to climate change impacts and people displaced from it, a large elimination was made on the basis of the economic resources of the countries. This was done initially in terms of countries that had significant climate-change displacement but were not fit for the study because they had substantially greater resources compared to the other countries being considered. These countries that were eliminated on this basis were the United States and China, which are considered international superpowers because they have significantly greater resources than the rest of the world that are not classified as superpowers (Brooks, Wohlforth). This was done after in-depth research was conducted on the less developed countries. This was done by countries being ruled out if they had a Gross National Income per capita (GNI), the average income of an individual in a given country, below a certain threshold; this threshold determined a country does not have the institutional capacity to create successful displacement policies. The countries that were eliminated for having too low GNI per capita, which is indicative of a low level of development, were Myanmar whose GNI was \$1,210; Pakistan which was \$1,500; Madagascar which was \$530; Somalia which was \$610; and Ethiopia which was \$1,130 (Macrotrends n.d.).

Final Choices

These elimination methods left 8 countries: Bangladesh, Vietnam, Kenya, Nigeria, the Philippines, Indonesia, Peru, and Mozambique. These countries had to be

selected with an emphasis on geography. There was only one country in the “Americas” (South and North America) region being considered — Peru, which was classified as a moderate response country, and thus it was chosen. Vietnam was the only country classified as having a strong response that was not eliminated for reasons discussed earlier, so it was also solidified as a country for the study. Of the countries not eliminated for other reasons, Indonesia, Peru, and Mozambique were the only countries classified as moderate response. Since Peru was already chosen, Indonesia and Mozambique were compared to one another to be chosen as the second moderate response country for the study. The literature found on Mozambique seemed to have less to do with government action and government programs and more to do with people having better farming practices, which has more to do with adaptation than remediation, so ultimately it would not be an ideal moderate response country for comprehensive comparison. Ultimately, Indonesia and Peru were chosen as the moderate response countries.

The countries that were classified as weak responses that were still being considered had a high enough GNI to be compared to the chosen countries. Nigeria, Kenya, Bangladesh, and the Philippines had a GNI of \$1,930, \$2,110, \$2,860, and \$4,230 respectively. These are all significantly more than the eliminated (on the basis of lack of financial resources) countries and are closer and more comparable to the GNI’s of the moderate and strong response countries (which was considered to ensure the weak response countries were somewhat comparable — Vietnam, Peru, and Indonesia have GNIs of \$4,180, \$6,990, and \$4,870 respectively). These countries were all

reasonable choices for the study, and thus had to be chosen on the basis of which was more relevant for the topic of the study and better for the diversity of the study.

Kenya and Nigeria were both qualified African countries that were classified as weak responses, so the decision was made on the basis of relevance to the study. Literature discussed how Kenya is laden with violent conflict driven by ethnically motivated violence, poverty, government responses, and lack of adaptive capabilities. Literature also mentioned that Kenyans are likely to migrate for labor and education as well as natural, economic, and political reasons. Kenya's other reasons for migration could make it difficult to isolate an individual's reason for migration as climate change. These confounding reasons for displacement made Nigeria the optimal country to choose because it is easier to isolate the impact of climate change in Nigeria as opposed to Kenya, although Nigeria certainly has some intersections as well with poverty and pastoral violence. The largest reason for violence in Nigeria is because of climate change (people fighting over scarce resources in the last few years), so violence can still be partially attributed to climate change rather than ethnically-related factors. Both countries experience high levels of terrorism, another confounding cause of displacement. Nigeria has Boko Haram, and Kenya has Somalia-based Al-Shabaab. But for Nigeria, it is easier to differentiate the climate change-induced migrants from the terrorist-induced migrants because these issues are primarily in different regions. In Nigeria, the main climate change issues are occurring in the North-Central region, while Boko-Haram-related conflict is mainly in the North-East. In Kenya, the differentiation between regions is less clearly defined as both terrorism and climate change impacts are widespread in coastal areas. Currently, it has been found that Nigeria has far more

internally displaced people due to climate change, compared to Kenya which has more international refugees, which is crucial for this analysis. These reasons solidify my choice for the weak response African country selection of Nigeria.

For the weak response Asian countries, both the Philippines and Bangladesh have a sufficient supply of resources available. If the Philippines were chosen, then three out of the study's three countries would be from the Asian Pacific Islands: the Philippines, Vietnam, and Indonesia. Therefore, choosing the Philippines would be limiting the geographic scope of the study, so Bangladesh was chosen to diversify the study geographically.

This chart summarizes the countries that were considered and researched for the study, how their response to climate refugees was categorized, and if they were ultimately chosen for the study.

Chart of Countries

The first column of this chart displays the comprehensive list of countries that were researched in-depth. The second column has each country's categorization as weak, moderate, or strong response to climate change-induced displaced people (the dependent variable). The third column shows if the country was chosen for the study.

Country	Categorization of DV	Chosen for Study
Pakistan	Weak response	No
Ethiopia	Weak response	No
Vietnam	Strong response	Yes
Bangladesh	Weak response	Yes

India	Moderate/ Weak response	No
Kenya	Weak response	No
Nigeria	Weak response	Yes
Philippines	Weak response	No
Indonesia	Moderate response	Yes
Brazil	Weak response	No
Somalia	Weak response	No
Cuba	Strong response	No
Peru	Moderate response	Yes
Madagascar	Weak response	No
Myanmar	Weak response	No
United States	undetermined	No
China	undetermined	No

Determining Each Country's Classification (Weak, Moderate, or Strong) of Dependent Variable

The indicators of the dependent variable, which is a country's response to climate change-induced internally displaced people, were determined by the protocols and programs discussed in the countries' relevant literature. Detailed notes were taken on each source by country, followed by a focused review of the materials to identify indicators of the dependent variable and relevant independent variables. The process of selecting and eliminating these variables is discussed in the results section. These indicators were categorized into broader indicators, and then chosen. On-paper goals

and commitments of legislation and adaptation were generally excluded from this paper's discussion because the scope of this paper focused on implementation and impact, not on-paper claims, of remediation efforts that involve long-term solutions to climate displacement. Remediation efforts extend beyond adaptation efforts that employ structural, temporary fixes and permanently relocate communities that are vulnerable to environmental hazards.

Finalized Dependent Indicators

Thus, these four dependent indicators — (1) disaster protocol, (2) temporary relocation, (3) permanent relocation logistics, and (4) permanent relocation long-term livelihood availability — comprehensively measure the success of a country's response to climate change-induced internally displaced people.

Inductively Finding Independent Variables

As I read through the relevant literature, I used an inductive method and took note of anything that could qualify as an independent variable for the study, meaning it has a connection with the country's treatment of people internally displaced by climate change. After combining and analyzing all of my notes on potential independent variables from the literature, my finalized independent variables were chosen based on the most significant connections with the dependent variable.

Finalized Independent Variables

The independent variables that were found to have the most significant connections with the dependent variable, response to climate change-induced internally

displaced people, were the following: (1) previous migration experience, (2) culture and social networks, (3) community engagement, (4) government coordination, (5) institutional capacity, and (6) trust in government.

Previous Migration Experience

I originally hypothesized that countries with high levels of experience with environmentally-induced migration would have better responses to people displaced by climate change. I believed these countries would have more systems set in place to accommodate environmentally-induced migrants, and would be better at accommodating people displaced by climate change. While this prediction may be logical, it was actually not supported by my research.

A country qualifies as having previous migration experience if they have past migration experience that occurs regularly. Previous migration experience must not be induced by extreme events caused by climate change.

Culture and Social Networks

I did not originally predict that culture and social networks would have a connection to a country's response to climate change-induced displacement, but culture and social networks consistently appeared in my research and had significant connections with the countries' responses to people displaced by climate change.

This variable includes three parts: cultural values that stem from individualism and collectivism, ethnic diversity, and social networks.

Cultural values tend to stem from the country being collectivist or individualistic. Hofstede has a collectivism versus individualism scale that has been widely revered

(1983). In this scale, Hofstede rates Indonesia as 6-7 and Peru as 9 out of 50 countries, meaning they are highly collectivist (Hofstede, 1983). Bangladesh also can be categorized as highly collectivist as Bangladeshi individuals tend to define themselves in relation to their social groups and emphasize collective identity, which are indicators of a collectivist culture (Begum, 2010). Vietnam can also be categorized as highly collectivist as Triandis, an expert on collectivist and individualistic cultures, discussed Vietnam as a prototypical collectivist culture (Triandis, 2018). Nigeria is slightly less collectivist than the other countries but should still be classified as moderately collectivist. Collectivist values of community and shared responsibility are dominant in Nigeria, but individualistic behaviors are emerging in competitive contexts (Felix, Ahmad, & Arshad, 2015). It is important to note that there is often significant variation in levels of collectivism within countries (Triandis, 2018).

Collectivist cultures tend to value welcomingness and sharing, as these traits make them more likely to successfully integrate displaced persons into new communities. For example, a host community would share knowledge about best farming practices or available non-agricultural employment opportunities. Cultures that value and engage in collective action frequently are more likely to communicate their needs to their government effectively, and therefore the displaced community's needs are more likely to be met.

Ethnic diversity is the heterogeneity of ethnic groups within a country (Steele et al., 2023). The Linguistic Diversity Index measures how many languages are spoken in a country. It measures ethnic diversity because different ethnicities often speak different languages. The Linguistic Diversity Index (LDI) found that Nigeria has the highest

linguistic diversity with 89%, Indonesia as a close second with 82%, Peru with 34%, Bangladesh with 32%, and Vietnam with 27% (World Population Review, 2025). Based on the LDI, Nigeria and Indonesia both have significant ethnic diversity while the rest of the countries do not. The countries may have tension and conflict between ethnicities, depending on their culture.

Existing ethnic, as well as religious and cultural, tensions are likely to be exacerbated by climate change. People are more likely to engage in violent conflict with competing groups when there is increased resource scarcity caused by climate change (Mizan et al., 2021). The Global Security Index (GSI) measures levels of violence in different countries. The countries' rankings (out of 100) are as follows, from most violence to least violence: Nigeria is 86, Peru is 54.9, Indonesia is 45, Vietnam is 42.9, and Bangladesh is 35.5. This illustrates how prevalent violence is in Nigeria compared to the other countries in the study. This is important to note because violence has the capacity to interfere with a country's ability to successfully manage people displaced by climate change, but it depends on the level of violence and country.

Social networks are highly influential in individuals' migration decisions, and are therefore relevant to discuss in countries' response to climate-induced displacement (Trinh & Munro, 2024). Social networks consist of the social relationships that an individual has, which are usually friends and family. Individuals rely on social networks for understanding norms, emotional connection, and connection to resources such as available employment and housing opportunities, which are important in migration decisions.

Cultures that have ethnic tensions tend to be more likely to have difficulties integrating displaced populations and communities because cultures with more ethnic division tend to have weaker social networks as individuals' relationships and social networks exclude people of different ethnicities. Stronger social networks help people find employment and housing opportunities, which in turn helps them integrate into society and meet their basic needs after being displaced.

Instances of unequal treatment of different groups also belong in this section, including systemic and interpersonal discrimination against groups of people. Discrimination and inequality stem from cultural values and norms. Countries with gender inequality may provide unequal assistance to displaced men and women. For example, a country may not give women access to employment programs because of cultural norms excluding women from the workforce. If certain groups of people are systematically discriminated against in policies, such as indigenous cultures or minority groups, this is related to the historical and cultural context of the countries.

Community Engagement

This variable involves the community's input into a country's response to people displaced by climate change. This is crucial to receiving an effective response because the community knows what they need best. This variable not only measures the community sharing their needs to the government, but also how effectively the input is integrated into policies, programs, and methods of assistance provided to displaced persons. It is also important that communities are properly educated and informed during the implementation of programs and policies, so they understand the reasoning

behind the legislation to effectively carry out their role in the implementation of the policy.

This variable also involves acknowledging and respecting local lifestyles, adaptations, and ways of life in policy and program design. This includes having property rights for all individuals, as well as the assistance opportunities that are available for individuals that own property. It is important that a community's lifestyles are taken into account when designing programs that will directly impact their lives.

I hypothesized that high levels of community engagement and community input being integrated into policies and programs would result in a better response. This prediction was supported by the research.

Government Coordination

Government coordination includes how well the government coordinates with its different levels — national, regional, state, and local. It also includes how well the government coordinates and communicates with every actor involved in response to people displaced by climate change. This includes volunteers at emergency shelters, NGOs that are involved in the allocation of assistance, and communication about the programs with the displaced people.

I hypothesized that high levels of government coordination would result in more successful policies and programs. The research supported this prediction.

The level of centralization is considered when discussing this variable. Centralization itself does not have a significant relationship with the quality of care given to internally displaced people due to climate change, but it is important to consider when discussing coordination efforts.

Institutional Capacity

The level of institutional capacity encompasses the government's resources and money to be allocated for their response to people displaced by climate change. My hypothesis was that logically, the more resources a country has, the better its response to people displaced by climate change. This prediction was only partially supported by my research.

The levels of institutional capacity and resources can be quantifiably illustrated by the government's gross national income per capita and annual government spending, which have a relationship with policy outcomes for climate-induced internally displaced people. Peru's GNI is higher than the rest because of their presence in the global market. Besides Peru, the per capita income generally follows the same trend as their quality of response to climate refugees. Government spending reflects the extent to which a government can allocate resources to public services, including displacement response. Government spending by percent of GDP is as follows: Bangladesh is 13.02%, Nigeria is 14.39%, Peru is 23.46%, Indonesia is 17.54%, and Vietnam is 18.77% (IMF, 2023). The government spending follows the same trend as GNI with Peru being the highest, Indonesia and Vietnam being in the middle, and Nigeria and Bangladesh being significantly lower. Institutional capacity was found to have a relationship with response to climate displacement because the country's financial resources determine their ability to financially support people displaced by climate change.

Trust in Government

Trust in government is measured as the percent of citizens that has confidence in government to serve their needs and effectively implement policies (OECD, n.d.). This influences the quality of a country's response to climate change-induced displacement, as an effective response depends not only on government directions but also on citizens' willingness to follow them. I hypothesized that lower levels of trust in government would result in weaker program outcomes. This hypothesis was partially disproven by my research.

Because a country's level of corruption has been shown to significantly influence the citizens' trust in government, it is incorporated into this variable (Lopu, Rodríguez, & Zachmeister, 2021). If people think that the government is corrupt and is looking out for their private interests rather than prioritizing the welfare of their constituents, they are likely to exhibit a lower level of trust in the government.

Vietnam and Indonesia both have high levels of trust in government, while Peru, Nigeria, and Bangladesh all have low levels of trust in government (Edelman, 2023). Peru is an anomaly, which can be explained by the corruption level and lack of trust in government (Edelman, 2023). Despite this lack of trust in government, Peru is doing better than Bangladesh and Nigeria because they have more resources and institutional capacity.

Combining concepts into Independent Variables

These variables were considered as potential independent variables but were ultimately integrated into one of the six independent variables: (1) previous migration experience, (2) culture and social networks, (3) community engagement, (4)

government coordination, (5) institutional capacity, and (6) trust in government. While they were not used as standalone variables, they shaped the structure of the final independent variables and contributed to the analytical depth of the study.

International organizations: Included in Institutional Capacity variable

International organizations are primarily involved in the disaster protocol and temporary relocation aspects of response, and are generally uninvolved with the long-term relocation of displaced persons. Generally, international organizations such as the UN would provide assistance for disaster response if any of these countries requested it. Thus, the jurisdiction of asking for international assistance is under the country's national government, so this is included in the institutional capacity variable. If the disaster relief is inadequate, the problem lies within the national government's request for assistance and the country's implementation, rather than the international organization's actions.

Corruption: Included in Trust in Government variable

Because a country's level of corruption has been shown to significantly influence the citizens' trust in government, it is incorporated into the trust in government independent variable. If people believe the government is corrupt and prioritizes private interests over the welfare of its constituents, they are likely to have lower levels of trust in government.

Inequality: Included in Culture and Social Networks Variable

Inequality is the unequal distribution of resources of opportunities. Instead of having this independent variable on its own, which does not have a meaningful

connection with the dependent variable, it is incorporated into the culture independent variable because systemic inequality, bias, and discrimination are embedded in cultures.

Conflict over Scarce Resources: Included in Culture and Social Networks Variable

While countries were eliminated for having too much general conflict, the study still needed to consider conflict over scarce resources because climate change exacerbates pre-existing tensions by making resources more scarce. Conflict over scarce resources was kept as part of the study, but put into a broader category of the independent variable of culture and social networks. This fit well into the culture category because the conflict was long-standing, and mostly ethnically-related, so these instances of climate change-related violence and conflict reflected the discriminatory and divided nature of the cultures of some of these countries.

Religious, ethnic, and cultural tensions are likely to be exacerbated by climate change. People are more likely to engage in violent conflict with competing groups when there is increased resource scarcity, which is caused by climate change (Mizan et al., 2021).

Variables That Were Initially Considered but Not Found to Be Significant

In the early stages of my research, population growth and property rights were considered as potential independent variables. While they could have potentially stood alone, they were ultimately excluded from the final set of independent variables because they did not appear in the literature and were not found to have a connection to the country's response to displacement.

5. RESULTS

Chart of Dependent Indicators

DV / Country	Bangladesh	Nigeria	Indonesia	Peru	Vietnam
Disaster protocol	Weak	Unknown	Strong	Moderate	Strong
Temporary Relocation	Unknown	Weak	Moderate	Moderate	Strong
Permanent Relocation	Weak	Weak	Moderate	Weak	Strong
Long-term livelihoods in permanent relocation	Weak	Weak	Unknown	Unknown	Moderate
Overall Strength of DV	Weak	Weak	Moderate	Moderate	Strong

This table shows the strength of each country in each dependent indicator. This gives an overview of the country's level of success in responding to climate displacement, and this should be kept in mind when reading each country's results. Some countries did not have sufficient literature on each variable, so cells were categorized as unknown.

Strong Response Country - Vietnam

Previous migration experience.

In Vietnam, flooding occurs so regularly that a season of the year is commonly referred to as “flooding season.” During flooding season, people seasonally migrate to urban areas for jobs. Because climate change is escalating the severity of the flooding, people are now having to consider permanent relocation. People, like rice farmers that depend on farming for their livelihood, are particularly likely to migrate due to climate change (Warner, Dun, & Stal, 2008). Vietnam’s previous experience with temporary flooding-related migration makes them more willing to permanently migrate.

This is illustrated by Trinh and Munro’s hypothetical study conducted in the Mekong Delta of Vietnam that examines individual migration decision-making in reaction to climatic stressors. This study found a significant connection between people having past migration experience and being more likely to migrate again (Trinh & Munro, 2024). This may be because individuals with prior migration experience feel more capable of relocating. Another reason could be that they have weaker social ties in their community. A third reason is that individuals lack the financial stability to withstand climatic stressors as the study found individuals that were previously affected by floods or droughts are more sensitive to future climatic hazards from a financial standpoint. People that have past experience with climate change impacts generally have less economic savings and are generally in worse economic positions because of their lost assets and income (Trinh & Munro, 2024). This suggests that Vietnam’s previous migration experience benefits their response to climate displacement as it makes people feel more inclined to migrate when experiencing severe climate change impacts.

Another finding of this study was that individuals reported feeling more capable of adapting to climatic events that they have already experienced, but less prepared for impacts they have not personally experienced (Trinh & Munro, 2024). This suggests that people may be overconfident in their ability to adapt to extreme climatic events when they have previous experience with it, despite the hazard becoming more severe due to climate change. While this overconfidence was not significantly observed in the Vietnamese communities' response to climate change impacts, other countries have widespread overconfidence in their ability to adapt to severe climatic events with structural solutions.

Culture and social networks.

Vietnam's strong culture of mutually supporting one's community is evident in the Bao Hieu commune, located in the Yen Thuy district in the Hoa Binh province where local residents shared advice on production techniques and household economic development with climate-induced migrants. Migrants and locals often have conversations with one another about their farming experiences with cash crop production, specifically sugarcane (Tuan, 2018). Engaging migrants in conversation about agricultural productivity led to an improvement in living conditions for resettlers, both economically and socially as it made them feel a sense of community. This shows the positive influence Vietnam's cultural values of community and responsibility to help neighbors has on displaced migrants.

Trinh and Munro found that social networks are most influential in motivating migration by altering social norms about acceptable living conditions, as opposed to motivating migration by discussing the benefits of migrating. For example, if an

individual observes that their social network is able to tolerate severe flooding, they are likely to learn to adapt and endure similar conditions. Conversely, if individuals within one's social network are choosing to migrate in response to the severe levels of flooding, it is likely that this will influence an individual living with similar flooding conditions to migrate as well (Trinh & Munro, 2024).

Trinh and Munro also found some significant sociodemographic influences on migration decisions. Older individuals are less likely to migrate because they feel a connection to the land and are concerned with starting over in a new place. Income and household size were found to have a negative correlation with likelihood to migrate (Trinh & Munro, 2024). Trinh and Munro found that families with higher income and more individuals are less likely to want to migrate because it would be more expensive for them to move all of their assets. Thus, people with fewer resources are more likely to migrate (Trinh & Munro, 2024). Koubi et al. discovered the opposite: that individuals with higher levels of education were more likely to migrate, as their qualifications increased their opportunities to find employment in new locations (Koubi et al., 2016). While literature has found different findings about income level's relationship with motivation to migrate, research would agree that an individual's income level is important to their migration decision.

Trinh and Munro found that rapid-onset environmental events are more likely to motivate individuals to migrate because they pose an immediate problem, and that slow-onset and long-term environmental events are less likely to motivate individuals to migrate. This finding has implications for predicting migration in response to slow-onset and rapid-onset events in a variety of countries and contexts (Trinh & Munro, 2024).

This finding is supported by Speare (1974) who also says that “an individual will consider migration only when an environmental event has a major impact on their personal wellbeing and efforts to adapt to and/or mitigate this impact are failing” (Koubi et al., 2016).

Social networks are influential in an individual's migration decisions, but vary depending on the demographics of the individual or family. Trinh and Munro found that social networks are valued more by women, people that have migrated before, and smaller families. Larger families value social networks less because the family itself acts as the social network. This study's findings on the relationship between demographics and value placed on social networks are important to consider when predicting the migration decisions of individuals, families, and communities, especially in Vietnam (Trinh & Munro, 2024).

Community engagement.

In contrast to most Vietnamese programs, which typically incorporate the perspectives of local communities, the Hoa Binh Relocation Program was highly centralized and faced criticism for insufficient allocation of farmland to relocated individuals. Tuan conducted a case study on the Bao Hieu Commune, in the Yen Thuy District, in the Bao Hieu province, which is one of three main resettlement communities for people displaced by climate change (2018). While the houses started off as temporary, now 80% of them are permanent. On this resettlement commune, most people work in agriculture. Due to poor soil quality, short-term crops are unable to grow, so Bao Hieu Commune farmers have instead turned to cultivating perennial trees such as pomelos. Sugarcane is the main crop since severe drought inhibits the irrigation

of other crops (Tuan, 2018). In terms of farmland, there is not enough land distributed for the amount of people. Thus, people are forced to seek other forms of employment such as raising livestock, which is difficult due to hygienic issues. People generally have small, fragmented, and disjointed farms that lack substantial upward mobility. This can be attributed to fragmented allocation of land, manual labor farming practices, and lack of coordination within the value chain. Upward mobility is especially limited for larger households due to the size of the farms. Due to the challenges in working in agricultural livelihoods in this commune, people are also taking industrial jobs, which depend on gender, are low-paid, and have limited training available. This case study observed room for improvement in engagement with communities and incorporating their livelihood interests into the commune.

Despite these challenges, generally, education, transportation, and healthcare services are better at resettlement sites. They are still working on the employment aspect, but it appears to be getting better over time (Tuan, 2018). Vietnam's government learned from its failures in incorporating community agricultural needs into this relocation program, and improved its communication with communities in future relocation programs.

A relocation program that learned from the Hoa Binh relocation program's mistakes was the Tan Hoa – Lo Gom Canal Sanitation and Urban Upgrading Project. With this project, the Tan Hoa canal community was able to express what assistance they wanted in terms of helping them attain livelihoods after relocation (Miller & Dun, 2019). The surveyed individuals expressed that they wanted a local market established, help accessing stalls at the market, and vocational training. These expectations were

generally met by the program as they established a community market, helped community members obtain stalls to sell their goods and services, and provided individuals with vocational training for the area's relevant industries (Miller & Dun, 2019). The program also gave individuals the autonomy to choose their own relocation plan as they were able to choose from a few places to be relocated or could choose to self-relocate with funds provided by the government (Miller & Dun, 2019). This program exemplifies acknowledging the perspectives of community members, who are displaced from their homes and want agency over where they are relocated. This program can be considered ideal in terms of respecting community members, and should be examined when constructing future relocation programs in Vietnam and other countries.

Government coordination.

The Hoa Binh Relocation program had some flaws in the allocation of land to farmers that resulted in farmers, especially those with small farms, lacking upward mobility. This can be attributed to fragmented allocation of land, manual labor farming practices, and lack of coordination within the value chain. Besides this flaw, the program was still beneficial, especially when compared to other relocation programs. Moreover, compared to the people's previous town, the inhabitants have better living conditions with superior transportation, a safer environment, better power supply, and more access to employment (Tuan, 2018). For settlers that are willing to work in non-agricultural jobs such as the service sector, companies, factories, or businesses, these income sources are more stable and the wages are much higher than the farming work. This non-farming work is thus more popular to settlers, especially men and younger individuals. This availability of work opportunities in the Hoa Binh Relocation Program,

in response to the scarcity of farmland that made agricultural livelihoods more difficult, is a great example of coordination with multiple actors. Local levels of government saw that there was a lack of employment opportunities and worked with private actors to create more for relocated individuals. Another illustration of the well-coordinated efforts in the Hoa Binh program is that they created Hoa Binh job placement center that provides job counseling to local laborers (Tuan, 2018); this is a great example of continued coordinated assistance provided by the government to ensure the welfare of relocated people. However, there is room for improvement in this employment assistance program because the individuals acquiring better-paying jobs are usually young men, as opposed to women and older individuals. It is important that coordination efforts ensure that people of varying demographics are assisted equally by climate displacement programs.

However, not every policy has been coordinated well by Vietnam. For example, the “living with the floods program” resettled around a million people in 200,000 households in the Mekong Delta that are affected by severe flooding. There were some issues with financial allocation to households and lack of transparency at the local level (Chun, 2015). This shows that coordination efforts are not successful unless they are detail-oriented and include transparent communication with households. There was also an issue with a lack of job opportunities and a consequential rise in debt among the resettled. It is crucial that Vietnam learns from its mistakes with coordinating the living with the floods program and constructs detailed plans that include employment opportunities for resettled communities in the future.

Institutional capacity.

The government does adequate research to ensure people are relocated to places not prone to severe natural disasters and sea level rise. (Miller & Dun, 2019). Vietnam has a sophisticated, advanced approach that does not wait for climate change impacts to be so severe that people have to move, but plans relocation before the full extent of loss and damage from climate change impacts takes place. When climate change impacts are observed, Vietnam creates programs to relocate the at-risk communities to minimize the potential economic and human losses that are likely to occur if people remain in the areas. By employing this potential loss mindset, Vietnam encourages people to migrate while still having some assets and financial resources to support them in their new environment (Miller & Dun, 2019).

Vietnam does not have significantly more institutional capacity than the other countries in this study, and actually has less than Peru. However, Vietnam has been using their limited resources to effectively assist people that are vulnerable to being displaced by climate change impacts. Vietnam's mentality about potential losses should serve as a guide to other countries that they do not need to wait for economic development to create relocation programs; if countries do wait, there are going to be significant financial losses in damaged assets and expensive assistance programs are going to be necessary. Additionally, relocating individuals before they are displaced eliminates the need for governments to pay for temporary emergency relocation shelters that hold individuals until permanent relocation sites are ready.

Trust in government.

Vietnam has high levels of trust in government (Edelman, 2023). During the COVID-19 pandemic, Vietnam was one of the few countries whose stock market rebounded during lockdown; this can be attributed to Vietnam's high trust in their government's ability to effectively respond to the issue (Anh & Gan, 2021). This is significant because the pandemic resulted in an erosion in trust in government globally. Globally, citizens disapproved of their government's response to the pandemic, and this resulted in a widespread loss of trust in government. Edelman found that this period saw a global shift from government to businesses becoming the most trusted institution globally (Edelman, 2025). Vietnam's high trust in government makes their displacement programs more effective because the communities are more willing to cooperate with the government programs.

However, it is important to consider that Vietnam is currently under an authoritarian regime, in which people are likely to rate their trust in government higher because they have lower standards for the government's actions, according to Zhou (2024). This can be for a multitude of reasons. Firstly, citizens in authoritarian regimes are likely to lie about their approval of the government due to repression (Newton, 2001). Secondly, people in authoritarian regimes are often indoctrinated to believe their government is trustworthy and doing well through the media and cultural narratives (Kennedy, 2009). Thirdly, authoritarian governments earn better approval when they are in periods of economic development (Wang, 2006). This last reason is applicable for Vietnam since they are in a period of economic growth (Zhou, 2024). Therefore, people

may be more likely to trust the government, and in turn, cooperate with government relocation programs because they are in a period of economic growth.

Moderate Response Countries - Indonesia and Peru

Previous migration experience.

Indonesia.

Indonesia has a relatively low amount of previous migration experience. While the country is at risk of natural hazards and is currently experiencing them at a level that is forcing people to migrate, the country has not experienced environmental hazards severe enough to motivate migration in the past. Without substantial previous migration experience, the government has been responding to climate change impacts with thorough programs and protocols, but communities themselves lack substantial knowledge on migration and evacuation protocols.

This is illustrated by the Merapi volcanic eruption in 2010 that necessitated the evacuation of at-risk communities. The people in these areas did not fully understand the risk of the volcanic eruption, illustrating their lack of previous experience with migration due to volcanic eruptions. This lack of knowledge about volcanic danger led to people returning to their villages during the evacuation period, sometimes with help from local authorities that also did not have adequate understanding (Mei et al., 2013). Community education on volcanic disasters was conducted before the 2010 eruptions, but was not extremely effective due to their voluntary nature (Mei et al., 2013). Because the volcano had not erupted for many years, people did not participate in community education programs and drills were ill-prepared. Lack of knowledge on evacuation plans

led many inhabitants to take the wrong evacuation route (Mei et al., 2013). Because of Indonesia's lack of widespread migration experience, it is especially important for communities to be educated on natural hazards and evacuation protocol. Thus, Indonesia should prioritize educating communities in their response to climate displacement going forward.

Peru.

Peruvians have significant historical migration experience. Migration has thus played a significant role in the economic, social, and cultural development of communities before climate change impacts started to induce migration (Paerregaard, 2024). For decades, people in Peru have used migration to adapt to environmental change as well as social and political change (Paerregaard, 2024). I recommend that the Peruvian people's historical willingness to migrate as an adaptation strategy be discussed with Peruvians that are reluctant to migrate from coasts that are experiencing environmental hazards.

Also, there has been a great amount of urban migration that has resulted in 78% of Peru's population living in cities, the biggest of which are along coastlines (Paerregaard, 2024). For example, the 1941 glacial lake outburst flood destroyed the downtown section of the city of Huaraz, so people resettled in higher-elevation areas of the city. (Wrathall et al., 2014). The Huaraz citizens understood that because the area had already experienced an environmental hazard, it would be likely to experience dangerous events in the future. Thus, it makes sense to move from the area prone to environmental hazards rather than trying to rebuild it; this logical approach to migration should be employed by Peruvians in the current context of climate change.

There is also regular migration for annual fiestas. While the population of individuals who have the financial resources to migrate for fiestas are small, they demonstrate significant migration and organizational knowledge as they organize support groups to plan the fiestas (Paerregaard, 2024). The organizational skills demonstrated by wealthier Peruvian citizens for fiesta-related migration should be used to organize efficient migration for people displaced by climate change.

Culture and social networks.

Indonesia.

The social networks in Indonesia are significant in impacting migration decisions, as far as connecting migrants with jobs as well as housing. The reason that Indonesian social networks are extremely strong and versatile is because these networks exist between people from different ethnicities, family ties, and villages. This leads to large and complex social networks that enable migrants to find livelihood opportunities and housing in a variety of towns and industries (Leal & Huaman, 2019). While it may be ideal for the government to have more influence on migration trends and patterns than social networks, it is better for strong, diverse social networks to control migration decisions than limited, community-based social networks because larger social networks give individuals a larger range of connections to housing and livelihood options. Indonesia should encourage displaced individuals to utilize their social networks as resources to find employment and housing when migrating.

The social networks in Indonesia have been helpful for organizing evacuations, aid, and providing temporary housing in cases of natural disaster such as the landslides

in Banjarnegara. In this case, it was most common for friends and family to house the evacuated community, and in limited cases the government provided temporary housing. Participants that were separated from their communities during relocation reported feelings of sadness, loss of identity tied to their community, and missing specific community members, which speaks to the strength of social networks in Indonesia that provide a sense of comfort and community for individuals.

These strong feelings of connection to one's community have deterred people from migrating, even when their livelihoods are extremely negatively affected by climate change impacts. Their reluctance to migrate stems from a strong attachment to their sense of community and social unity. They not only feel an emotional attachment to their fellow community members, but also to the physical environment of their hometown (Leal & Huaman, 2019). People may feel guilty that migrating would be failing to take care of their hometown and essentially abandoning it, so this acts as a deterrent to migration.

Whole-community migration, also known as transformation adaptation, has been effective in mitigating reluctance to migrate stemming from the sense of identity and emotional attachment tied to Indonesian communities. In this approach to relocation, the government provides homes for the whole community in a nearby area with ample land and housing availability. This facilitates the reestablishment of routines and social norms, which are crucial to individuals' sense of normalcy, safety, and wellbeing. Resource availability and cohesion with community, whether the same or integrated into a new community, were also essential to individuals' feeling normalcy (Burrows et al., 2021). Overall, whole-community relocation has been shown to facilitate the

preservation of strong social networks in comparison to individual relocation (Hikichi et al., 2017). However, Burrows et al. found that whole-community relocation does not guarantee that this social network strength and continuity is upheld, and that the new environment must be coupled with feelings of familiarity, routine, and consistency (Burrows et al., 2021). Nevertheless, with the strength of Indonesia's social networks and communities, I recommend that whole-community relocation be used as the primary relocation strategy in Indonesia.

Another aspect that is important to people's sense of normalcy and identity is their connection to land. There are many different religions and cultures in Indonesia, including indigenous communities who have ancestral ties to land. These indigenous communities' identity and sense of normalcy are tied to their sacred connection to their land. Thus, these communities are especially averse to migrating from their land because of their spiritual allegiance. According to Khan et al., a solution to this resistance to migration is settling displaced people in a town close to their ancestral home, which allows them to maintain psychological kinship and feelings of cultural connectivity (2021). This approach of resettling spiritual individuals in a town close to their ancestral land should be utilized with indigenous communities, in Indonesia and other countries.

There is a cultural aspect of Indonesian culture that Indonesians call *gotong royong*, which is a tradition where people feel the obligation to help their fellow villagers and cooperate in collective action (Leal & Huaman, 2019). This helps facilitate migration as people have channeled this philosophy to help each other with the moving process in any way they can. For example, in a town called Demak, interviewees discussed

pooling resources, such as taking turns using boats owned by a few community members. Another example can be seen in Bedona where interviewees discussed how they helped one another move when they faced coastal erosion (Leal & Huaman, 2019). The influence of *gotong royong* can also be seen in the Merapi volcanic eruption when the displaced community worked together to upgrade the evacuation roads and share personal vehicles with community members that did not have access to one (Mei et al., 2013). This collective action illustrates how Indonesia's culture prioritizes the needs of the community, sharing resources, and helping one another rather than prioritizing only individual needs. *Gotong royong* should be utilized in the Indonesian government's relocation efforts because communities are willing and able to assist in the relocation process.

Peru.

In Lima, a strong level of distrust within communities was found (Bossio & Coomes & Ford, 2022). People feel that other community members are trying to take advantage of situations and are not working towards the common good. Bossio et al. connected this lack of trust with adaptation efforts, arguing that neighbors do not trust one another to conserve water (2022). This line of logic can also be applied to the treatment of displaced persons. People are less likely to be welcoming and helpful to displaced persons, or to work together to build new communities and share scarce resources, if they believe that displaced individuals are going to take advantage of them.

A study surveyed individuals in the Peruvian Andes about their likelihood to migrate, and their reasoning behind their migration decisions. This area is regularly

impacted by climate change impacts such as extreme temperatures, drought, and excessive precipitation. Thirty-four percent of this population reported having health issues as a result of climate change-induced weather patterns. Twenty-nine percent reported having a loss of income due to reduced crop productivity or disease in livestock, which are consequences of climate change. Of the population surveyed, 46% reported not considering migrating. The majority of these individuals are not interested in migrating because they value their social relationships and their connection with the natural environment over their livelihoods (Adams, 2015). This speaks to the strength of social networks in this Peruvian community. People are willing to have their health and livelihoods suffer because of the strength of their relationships with their social network and their cultural connection to the land. The other 64% would consider migrating and are classified as dissatisfied. Nevertheless, a large portion of this group still refuses to leave. Some of these individuals are genuinely “trapped” by resource constraints and do not have the financial resources to move to a more expensive city like Lima. Others discussed valuing their social attachments to the village and being emotionally comfortable with it. Similarly, others discussed being scared to start over and stated that they would not feel a sense of belonging in a city. Approximately a quarter of the dissatisfied group discussed having obligations to the village. These were primarily individualistic but also frequently mentioned having an obligation to their family. These reasons included a spouse’s job, taking care of a mother, and having to take care of one’s house and animals (Adams, 2015). This shows how Peru’s culture values individual responsibilities and obligations, as well as a sense of belonging to one’s community.

Similarly to Indonesia, the strong social networks should be accommodated with relocation solutions. Whole-community relocation should be utilized in order to maintain the social connections and sense of identity that Peruvians reported associating with their community. Whole-community relocation is likely to appease the concerns of individuals that reported familial obligations and being scared to start over in a new place, as well as potentially change the minds of individuals that said they were unwilling to consider migrating.

Community engagement

Indonesia.

I was not able to find sufficient literature on community engagement in completed displacement projects. It is worth noting that the National Action Plan on Climate Change Adaptation discussed how community-led organizations are key stakeholders in coordinating remediation activities. This plan discusses how local communities will be consulted in relocating the city of Jakarta (Leal & Huaman, 2019) (Azmy, 2021).

Peru.

Peru's Piura Water Plan, which relied on funding from international bilateral donors and nongovernment organizations, faced significant challenges because of communication issues with the community members that are integral to the program's success. A water user organization has collaborated with an NGO to create a program that uses lowland irrigation fees to pay for highland reforestation. The implementation of this program is severely flawed because the upstream individuals are neither compensated nor sufficiently informed about the program. The upstream individuals are

not educated about how water flows from downstream and trees help regulate this flow. So, the upstream individuals are not given money and are given trees that they are instructed to plant, but they do not understand the reason that they should plant them (which would be for the benefit of the downstream individuals) (Mills-Novoa, 2017). This program reflects a common mistake in programs where they create programs but do not properly explain them to community members whose cooperation is essential to the program. I recommend that Peru prioritize communicating the details and reasoning behind programs and the community's role in them.

With the 2009 Water Resource Law, the state has jurisdiction over water and recognizes indigenous and campesino block water rights, which is a step in the direction of acknowledging communities. However, Peru is diverting water away from communities that need it downstream and reallocating it to the upstream farms that are producing agricultural exports (Mills-Novoa, 2020). This unfair distribution of resources shows that Peru is ignoring the needs of certain communities, and is likely prioritizing allocating resources for export crops for the broader goal of paying off their debt to the World Bank. As a result of the misallocation of scarce resources, during dry years, people are becoming displaced and there are conflicts between small producers over water (Mills-Novoa, 2020). Peru prioritizing some communities over others in programs has resulted in an overall weaker response to climate change and displacement.

Government coordination

Indonesia.

The Indonesian government's response to the 2010 eruption of the Merapi volcano showed effective cooperation and communication between different parties

such as regional disaster management agencies, official transportation (carried out by different organizations and the department of transportation), NGOs, and the volunteers at the IDP camps. Evacuation and temporary housing were effectively organized in a collaborative effort by these organizations. The village chiefs and local organizations acted as intermediaries in facilitating communication. Specifically, the municipality chief acted as the key communicator for alerting the local population of the volcanic danger and the need to evacuate. This organized, well-coordinated response to the Merapi volcanic eruption should serve as a model for Indonesia in coordinating future climate displacement evacuation and relocation programs.

Indonesia's policies include community-led organizations in the implementation of programs. However, these community organizations need the assistance of the government and private actors to be successful in implementing large developmental changes, and they do not always help the organizations with execution (Leal & Huaman, 2019). Indonesia should assess the needs of current programs being led by community organizations and address areas that need assistance to bolster the success of these initiatives.

Peru.

Because of the highly decentralized, locally-controlled nature of Peru's government, federal and regional policies are often implemented differently by each region of the country (Aracena et al., 202). The Regional Technical Group for Climate Change details planning, coordination, and execution of climate change adaptation, dividing responsibilities between the government and NGOs. Regional departments are important in addressing climate change in Peru because of the diverse regional

geography that includes a coast along the Pacific Ocean, the Andes Mountains, and the Amazon Rainforest. There are a multitude of task forces to deal with issues such as flooding, drought, and food insecurity. There are regional departments such as Ayacucho with specialized task forces (Aracena et al., 2021). The regional departments of Peru have a great amount of autonomy, and this is shown through Aracena et al.'s discussion of the highly varying level of health inclusion in regional policies regarding climate change impacts (2021).

There are advantages and disadvantages to this high level of regional autonomy and lack of centralized policy. For Peru, it is beneficial that each regional department has the ability to consider its unique typography and background and include that in their policy. There is also a downside to giving regions the ability to control their own climate change policies — some will create comprehensive plans, and some will be subpar and will not have enough resources for effective implementation. The different regions have different combinations in their technical groups, which consists of public actors (which are usually the majority), NGOs, intergovernmental groups (which are usually relatively small), academic institutions, civic actors, businesses, and other groups (Aracena et al., 2021). Thus, the federal government should have more oversight over the regional programs, and assist in areas that are falling short, to ensure that each region is effectively responding to climate displacement.

Federal and regional government programs clearly have issues coordinating with community members, as shown by the Pirua water plan that did not effectively communicate the importance of communities planting trees (Mills-Novoa, 2016). Thus, the government needs to improve its communication with community members,

especially emphasizing the benefits that communities will reap from participating in programs.

Warner and Ore found an issue with the lack of communication between community members, scientists, and politicians (2006). They argue that the central government “has rarely communicated with local governments and civil society organizations, let alone listened to their suggestions.” (Warner & Ore, 2006:115) This is a significant accusation in terms of asserting that the Peruvian government does not have strong coordination and communication between different parts of its government. Because of this flawed coordination, NGOs and IOs often take the initiative to lead coordination. But in recent years, the government is working more actively with NGOs, international organizations (IOs), and other countries to provide disaster relief and coordinate these efforts more frequently (Mitchell & Pizzi, 2024). Peru should continue making efforts to coordinate disaster relief with NGOs and IOs because disaster protocols with well-coordinated actors tend to be more efficient.

There is also an issue with information being provided and communicated after disasters have occurred, with some information being provided in 72% of events and minimal information in 34% of events (Mitchell & Pizzi, 2024). This suggests that there is a trend of flawed communication. As a result, activities that require the cooperation of a local community, in terms of restricting their movement or relocating the community permanently, are rare (Mitchell & Pizzi, 2024). Overall, Peru needs to improve their communication with community members and organizations that are involved with coordinating communication. Relocation efforts are going to require the cooperation of

local communities in being relocated, so Peru needs to improve their communication for the sake of these future programs.

Institutional capacity.

Indonesia.

While the evacuation warnings for the Merapi volcano were given sufficiently in advance and the entire population became aware of the danger, not all members of the community were prepared or willing to evacuate. Community members were willing to risk their lives instead of abandoning their assets that hold such a large portion of their wealth, such as their livestock. Individuals' lack of resources also led them to return to the at-risk areas to feed their animals (Mei et al., 2013). This shows the sensitive financial situation of many community members who had so few resources that they were willing to risk their safety.

As a result of Indonesia's limited institutional capacity, Indonesia is focusing on alleviating climate change impacts with easy, cheaper, more temporary fixes called structural solutions. While these solutions may temporarily solve the issue, climate change impacts are projected to worsen exponentially in the coming years, and these temporary fixes eventually will break; a levee (which is comparable to other structural fixes) can only withstand so much before it breaks, and when it breaks, the losses far outweigh the cost of permanently relocating vulnerable populations.

Another fundamental issue with structural solutions is that they often lead to unintended consequences. For example, the government has been working on elevating infrastructure like roads, but this may lead to more flooding in surrounding

areas that will become the lowest-lying areas after the roads are elevated (Leal & Hauman 2019).

Indonesia did not provide financial resources for individuals in Bekasi, an area with substantial coastal erosion, to migrate. As a result, Bekasi people that own land affected by erosion often are unable to sell it and are forced to abandon this land and their assets without compensation. (Leal & Hauman 2019).

Peru.

Peru's Piura water plan depends on funding from international bilateral donors or nongovernmental organizations. However, they have not received sufficient funding from these investors to fund the project. Part of the reason for this inadequate funding is that Peru's recent economic development has led them to become categorized as a lower middle-income country, and this status results in lower levels of funding from international organizations (Mills-Novoa, 2016). Because this plan is not feasible due to inadequate international organization funding, Peru has created a new irrigation program. Both the Pirura water plan and the new irrigation program that focused on highland reforestation suffer from a lack of institutional capacity and funding to properly implement them (Mills-Novoa, 2016).

Similarly to Indonesia, Peru's temporary, structural fixes may protect climate refugees' safety in the given moment, but pursuing long-term solutions would ensure their success long-term. This is illustrated by temporary evacuation occurring in 40% of Peruvian disasters, but permanent evacuation being rare at 3% of disasters (Mitchell & Pizzi, 2024). This suggests that there are a significant number of communities facing

ongoing vulnerability to climatic hazards because Peru is not allocating resources for permanent resettlement and infrastructure development (Mitchell & Pizzi, 2024).

In only 14% of cases Peru requested aid (and received aid in 38%) (Mitchell & Pizzi, 2024). This could have multiple explanations: there is some level of corruption or institutional weaknesses that the government does not want to be revealed, the aid was not actually necessary, or perhaps they are too prideful to ask for assistance. There is a failure to respond to disaster, which is classified as neglect, in 26% of cases; this suggests that the government could use more help than it is admitting or should be providing more assistance internally. The government only provides a large amount of reconstruction funds in 7% of disaster cases (Mitchell & Pizzi, 2024). In future disasters, I recommend that Peru either invests in federal disaster relief programs or requests government assistance to minimize neglect.

Trust in government.

Indonesia.

After this Merapi volcano eruption disaster, because people viewed the volcano evacuation as relatively well-done, there was high trust in the government, which can be assumed to still be consistent, especially in terms of relocation because of climate change impacts (Mei et al., 2013).

Indonesia has high levels of trust in the government (Edelman, 2023). These high levels of trust in government help facilitate effective displacement programs because community members are willing to cooperate with them.

Peru.

Farmers trust information from intermediate organizations in communicating climate information, but do not trust the National Meteorology and Hydrological Service of Peru, which made the SENAMHI's climate-adjusted farming calendars and climate anomaly text-message alerts ultimately futile. This lack of trust comes from historical trust relations (Orlove et al., 2011). There is a high level of distrust in the government because of the civil war (Mitchell & Pizzi, 2024). This causes Peruvians to be less likely to cooperate with government initiatives that aim to help people displaced by climate change. Several programs require the cooperation of communities, causing these government initiatives to fail because of a lack of community support. In order to combat this, highly-trusted community leaders should use their social power to recommend community action to effectively respond to climate displacement. Peruvians trust their social networks more than the government, so they are more likely to listen to recommendations given by fellow community members.

Peruvians are aware of the high level of corruption in their government as 88% agreed with the statement that more than half of politicians are corrupt (Lopu et al., 2021). This high level of corruption is likely to inhibit the country's response to climate-induced displacement. An example of corruption's negative impact can be seen in the Integrated Water Resources Management program, which has been largely ineffective because state, private sector, cooperation agencies, and development banks are able to hijack water policy reform (Mills-Novoa, 2020) (Molle, 2008). Therefore, programs are likely to be more successful if assistance is provided through organizations and actors that are less affiliated with the federal government so they are

less likely to abuse their power, and so that community members are less likely to be skeptical of the programs.

Another phenomenon that results in lower trust in government is with information provided after the disaster has occurred, with some information being provided in 72% of events and minimal information in 34% of events (Mitchell & Pizzi, 2024). This may relate to the corruption of the government, that it may not want to spread information about its weaknesses. Regardless, this lack of clear communication makes Peruvian communities and individuals distrust the government as they feel their needs are not being adequately addressed. Thus, communities should take action and communication into their own hands, since the government's efforts have been inadequate.

Peruvian citizens' long-standing distrust of the government is unlikely to change in a short enough time span that climate change impacts require; caring for displaced persons is an immediate need. Thus, Peruvian citizens need to work together to care for their communities, rather than relying on the government to effectively respond to climate-induced displacement.

Weak Response Countries - Nigeria and Bangladesh

Previous migration experience.

Nigeria.

Nigeria has an extensive amount of previous migration experience as the majority of Nigerians have utilized migration as a farming technique for centuries (Mullen, n.d.). In Nigeria, pastoralism, also known as nomadic herding, is a common lifestyle where farmers are constantly moving to retreat from depleted land and have fresh grazing lands for livestock. Since this makes up more than two-thirds of Nigeria's

labor force, to say a large portion of the Nigerian population has previous migration experience would be an understatement (Mullen, n.d.). These people do not only have experience with migration; migration is the basis of their way of life.

The majority of these pastoral communities are in the Sahel zone of Nigeria, which has been facing desertification and extreme drought, which is driving people to migrate to coastal areas (Agu H., Onyeabor & Agu S., (2020). This migration has not been an adequate adaptation strategy, so the government has created unsuccessful programs that aim to transition these communities into sedentary lifestyles, which will be elaborated on further in subsequent sections.

Bangladesh.

Bangladesh also has substantial experience with migration. According to Naser, migration has “always” been a common coping strategy to any situation that negatively impacts livelihoods in Bangladesh (Naser et al., 2019). Poverty-ridden people from rural areas often migrate to urban areas and send remittances back to their families, and this is especially prevalent during livelihood crises (Naser et al., 2019). This has been reviewed as a way of building resilience, a safety net of sorts, to environmental shocks (Naser et al., 2019). In the past, this temporary migration has benefited the welfare of the origin cities as it alleviates densely-populated local labor market competition. However, as migration becomes increasingly widespread, it is now having the opposite effect (Naser et al., 2019).

Bangladesh consistently has seasonal migration as a recurring winter pattern (Naz et al., 2024). People migrate in search of better job opportunities due to the cold winter temperatures causing a negative impact on agricultural livelihoods’ earnings (Naz

et al., 2024). Seasonal migration is also common in the summer because the intense heat and humidity have negative impacts on human health, which outweigh their profit margins, so they are inclined to find other avenues of day labor in urban areas (Naz et al., 2024). Coastal regions of Bangladesh see higher rates of seasonal migration because of their high rates of river erosion and difficulty working in the summer heat (Naz et al., 2024). While seasonal migration has been commonplace for a substantial amount of time, people are reluctant to leave their hometowns permanently because of emotional ties (Naz et al., 2024).

It has been common for individuals in rural communities to migrate seasonally for portions of the year, but as climate change impacts are becoming more prevalent, this portion is becoming larger and larger. As droughts are becoming more common because of climate change, people are migrating for the majority of the year in search of non-agricultural employment opportunities because agricultural livelihoods are only feasible during the rainy season (Naz et al., 2024). The insufficient clean water supply and high levels of salinity in soil negatively affect crop cultivation. It also impairs livestock rearing because the animals depend on water and crops for nutrition (Naz et al., 2024). Thus, it is becoming increasingly difficult for rural communities to make a living with climate change impacts worsening.

This seasonal migration has negative impacts on the rural communities as a whole. Because a significant portion of these rural communities are gone for increasingly longer parts of the year, the welfare and economy of these regions are suffering as they are now only inhabited for small portions of the year. Because a large portion of the labor force is gone for large portions of the year, these regions have low

levels of food availability, healthcare accessibility, livelihood opportunities, and education opportunities (Naz et al., 2024).

Culture and social networks.

Nigeria.

As climate change impacts worsen, Nigerian pastoralists are getting into violent incidents with one another. Almost 5,000 Nigerians were killed due to pastoralist conflict from 2018 to 2021 (Mullen, n.d.). As Nigeria's climate change impacts have worsened, it can be assumed conflict has worsened as well. Climate change has caused a high level of resource scarcity, and as an assumed (but not explicitly proven) result, "violent land disputes and cycles of escalatory violence between the ethnically divided herding and farming communities" (Mullen, n.d.).

This is highly debated as some people link the violence to climate change, while some think it is "predominantly political, ethnic, or economic" (Agu et al., 2020). However, this study has found ample research to support the notion that violence has escalated and has increased in recent years due to resource scarcity caused by climate change (Mullen, n.d.). While there was underlying tension between ethnic groups in Nigeria that caused violence, climate change increased resource scarcity, which exacerbated violence.

These extreme ethnic tensions in Nigeria are important to consider when analyzing the response of Nigeria to people displaced by climate change. Social networks are extremely limited in Nigeria because they are limited to one's ethnic group — meaning that their ethnic group is their whole community. Therefore, the strength of social networks in Nigeria is weak because they are limited to ethnic lines, which

excludes large numbers of people that could potentially be a part of an individual's social network. Having a limited social network limits one's ability to find employment and housing opportunities.

A weakness of the NLTP policy, which aims to transition Nigeria's livestock sector from a pastoral system to a stationary, grazing reserve-based system, is that it lacks sustainability and longevity because of the cultural climate of Nigeria, which inherently has weak social networks because of ethnic tensions (Mullen, n.d.) (Agu et al., 2020). Arable grazing land is projected to become more scarce with this proposed system and worsening climate change impacts, so it will not be feasible for each farmer or family to have their own ranch and land. If the Nigerian culture had a culture that emphasized sharing as much as Vietnam and Indonesia, a solution could be achieved that involves sharing the land with each other. But this is likely not a viable option because of the ethnically divided, individualistic culture of Nigeria. There are harsh cultural incompatibilities between the cultural values and norms of different ethnic groups that make coexistence nearly impossible. For example, the Fulani (a primarily Muslim ethnic group) experience harsh backlash and refusal to coexist with primarily Christian host communities (Agu et al., 2020).

Bangladesh.

Mizan found that there is this underlying issue of Bangladesh's planned relocation being put off because of people's inability to cooperate in the face of resource constraints. This animosity is fueled by ethnic tensions, and is exacerbated by the resource scarcity and climate-induced migration patterns (Mizan et al., 2021). This

suggests a weakness in the culture of Bangladesh that does not value community and sharing like collectivist cultures such as Indonesia and Vietnam.

There is an issue of rural-urban migrants in Bangladesh experiencing high levels of social exclusion and economic exploitation. They are trapped in insecure housing units with exploitative leases and documentation that allows landlords to overcharge them for resources like water, electricity, and food (Adger et al., 2020). These slums are often polluted, overcrowded, and have poor sanitation. People have to drink polluted water, which leads to the acquisition of water-borne diseases and diarrhea (Ogunwande, 2021). They also have limited upward social mobility because they are limited to job opportunities that are informal (under-the-table work is more likely to be underpaid) and often dangerous because of a lack of education and skills that are applicable in the urban industries (Adger et al., 2020). This shows a weakness in the culture of Bangladesh, that there is this widespread issue where landlords exploit vulnerable migrants in housing practices, rather than a culture of honesty and upholding morality. A culture that would result in better treatment of displaced persons would prioritize community and protecting one's community members rather than taking advantage of them (but it is also because the landlords themselves are experiencing financial stress).

This trend of extreme urbanization (rural-urban migration) is problematic because the majority of people that have engaged in rural-urban migration go to the biggest city in Bangladesh, Dhaka, which is becoming extremely overcrowded and difficult for people without skills and education to find work opportunities. Because the large cities hold the majority of Bangladesh's population, migrants are most likely to only have

social network connections to the largest, already overcrowded cities. Thus, individuals looking to migrate will turn to their social networks, and the social network members will likely recommend their friend or family member migrate to the large, overcrowded city in which they live. Then, they are going to be the social networks for their friends and families that are considering migration, and this will result in a vicious cycle of social networks in cities expanding and cities overpopulating with migrants (Naz et al., 2024).

One may contemplate why someone would choose to follow their social networks to live in a city facing poverty and unfavorable health conditions. It is important to recognize that this may represent the individuals' only social network beyond the rural area where they live and their ancestors have lived for generations. They may choose to be impoverished and sick, but in the comforts of their social networks in Dhaka, rather than facing similar hardships in other areas with additional stressors like water salinization and flooding. (Naz et al., 2024).

NGOs do not have a lot of trust put into them, or funding (Naz et al., 2024). This results in the NGOs' institutional capacity and availability to help people being lessened. This also shows the weakness of the culture and social networks in Bangladesh because NGOs do not have the capacity to actually help people. In other countries, NGOs have substantial influence on the community because the community puts emphasis on coming together to face challenges and work on solutions together, for the good of the communities.

Bangladesh's culture, specifically the ethnic divides, limits social networks, which complicates migration and leads to worse migration outcomes. A case study of an individual from a minority tribal group reported being discriminated against because of

his tribal affiliation, and as a result, he now only migrates to towns with a labor contractor that is of his same tribal ethnicity (Martin et al., 2014). This trend of contracted laborers leads to more inequality in having to endure hazardous climatic conditions because the men migrate for contracted work and leave their wives and children to stay in these at-risk environments (Martin et al., 2014). There are also significant disadvantages for low-income women and children living in urban areas as the rates of mortality for these demographics, especially infants, are significantly higher relative to other areas of Bangladesh, and other areas of the world (Islam and Sutopa, 2021). The highest rates of child deaths were in rural-urban migrants that migrated due to environmental and climatic conditions, according to Ahmed et al. (2006).

Community engagement.

Nigeria.

The Nigerian government's response to resource scarcity among pastoralists was not to provide security for the communities. Instead, their solution was to completely transform their lifestyles by transitioning Nigeria's livestock sector from a pastoral system to a "stationary system of ranching within grazing reserves." (Mullen, n.d.) In an effort to essentially criminalize pastoralists, for living the way that they have been for centuries, the North-Central state of Benue passed an anti-grazing law, called the Open Grazing Prohibition and Establishment of Ranches Law of 2017 (Agu et al., 2020). This caused many pastoralists to trespass into neighboring Nasarawa, where 260 people died due to violence in the southern region (Mullen, n.d.). There have been hundreds of violent incidents since 2018 (Mullen, n.d.). This shows how Nigeria does

not acknowledge a large portion of the country's lifestyles and excludes their desires and input from policies and programs.

When it comes down to it, a large issue with this plan is the government's lack of respect for communities' lifestyles, in terms of respecting local pastoralists' lifestyles and ways of life. The Nigerian government does not respect the lifestyle of pastoralists that make up two-thirds of the country and are the foundation of a great number of ethnic communities. This will also unfairly privilege certain ethnic groups and communities over others (Mullen, n.d.). This exemplifies institutionalized inequality and cultural ignorance, as well as a failure to engage with the very communities for whom these policies are intended. This lack of effective communication is a fundamental issue with this Nigerian program of sedentarization (ranching within grazing reserves) — the pastoral communities do not want to switch to a sedentary lifestyle. They have been doing it for centuries, and it is confusing and much more complex in their perspective to switch (Agu et al., 2020).

The NLTP anti-grazing plan is also flawed because it is not addressing the issue of violence because ranches continue to be violent and gang-filled (Mullen, n.d.). The refugee camps are also used as hiding grounds and recruitment bases (resources) for the combatants (Agu et al., 2020). This illustrates how communities are not being consulted with because they would have expressed concerns about combatants abusing these refugee camps and their safety being in danger. To alleviate these concerns, programs should include measures that would protect the displaced people in the camps from the violence and conflict.

Another program that politicians are advocating for is relocating Fulani (a nomadic, Muslim community) pastoral herdsmen to lands that are already occupied by indigenous populations. They also considered going back to the grazing routes of the 1980s, which was met with a lot of political backlash from communities that would be affected (Agu et al., 2020). All of these proposed plans do not take into account the perspectives and wishes of the pastoralists whose lives are going to be transformed by the potential legislation.

Bangladesh.

There is also a problem with the lack of consultation of local communities in Bangladesh. “Government-planned relocations of people displaced by riverbank erosion have fueled ethnic conflicts in the Chittagong Hill Tracts in the southeast part of the country, because the move was not backed by consultations with tribal communities” (Mizan et al., 2021). This lack of consultation with local communities shows how the Bangladesh government is too centralized and ignores the voices of the people that are impacted by their policies.

In Bangladesh, there is a large income disparity, and the low-income rural-urban migrants have a much more difficult time finding jobs. As a result, these migrants often are in deeper poverty after migrating (Tanjeela & Billah 2022). There is a critical lack of community support for migrants, especially in urban areas. One of the main issues that these rural-urban impoverished migrants are facing is that as slum dwellers, they have extremely insufficient sanitation. This results in the spread of STDs, reproductive health issues, and water-borne illness. This issue exemplifies how communities’ complaints and input are not taken seriously as the community’s expressed urban sanitation

concerns are not adequately reflected in policy. This is illustrated by only “5% of total social protection focus[ing] on urban poor communities” (Tanjeela & Billah 2022). Thus, the Bangladeshi government’s policies do not reflect the actual needs of the people, the majority of whom live in impoverished urban communities.

This lack of policy regarding the issues of urban dwellers is appalling because “A household survey demonstrated that one third of people became displaced due to flooding and loss of arable land... 6.5% of rural coastal people migrated to urban areas in Bangladesh” (Bernzen, Jenkins, & Braun, 2019) This shows the magnitude of rural-urban migration that has occurred in recent years, and it is predicted to grow exponentially. “It is projected that more than 35 million people will be potential victims of human migration in coastal Bangladesh by 2050” (Tanjeela & Billah 2022).

The low-paying nature of these jobs available to low-income migrants in urban areas, as well as the difficulty of getting a job, result in high levels of individuals living below the poverty line. This has been linked to rising rates of food insecurity and health issues. In 2015, the National Institute of Population Research and Training, International Centre for Diarrhoeal Disease Research, and Bangladesh Urban Health Survey found that almost half (44%) of children under five years old had stunted growth. This statistic is higher than it was in 2013 and has continued to increase. (Tanjeela & Billah, 2022).

Urban dwellers, many of whom are rural-urban climate-induced migrants, face a multitude of issues in the cities. These include inadequate access to water, electricity, and sanitation; high levels of poverty; and rampant diseases and health issues. As a result, urban dwellers are in dire need of assistance from federal welfare programs. Unfortunately, welfare programs in Bangladesh require an official place of residence,

and these migrants often reside in slums, so they do not have a permanent residence and thus are not eligible for government welfare assistance programs (Alam & Endacott, 2022). This is a great example of the Bangladesh government not taking into account the actual situations of their impoverished people that need to be included in their assistance programs. This is a fundamental issue with the Bangladesh government — that they often do not take into account community members' perspectives and consequently pass non-inclusive policies.

An area in which Bangladesh's government effectively consulted with local communities and accounted for the lifestyle of communities in its policy is in regard to char dwellers. Char are sand and silt land masses that form the riverine islands in the Jamuna, Padma, and Meghna rivers, and char dwellers are people that live on these islands. Climate change-induced riverbank erosion displaces char dwellers that are forced to settle on newly emerged char land elsewhere (Blitz, 2012). Char dwellers are stuck in a negative system where they are relocating from one char to another, and remain in a subsistence, extremely low-income form of agriculture as landless farmers, fisherman, or agricultural producers. In response to the low-income status of the char dweller communities, Bangladesh created the Chars Livelihood Programme, which delivered welfare and financial assistance to support impoverished households living on the chars of the Jamuna River in Northern Bangladesh. It provided packages of support for 55,000 households in this region. It included initial capital for purchasing an income-generating asset, monthly stipends for 18 months, physical infrastructure such as plinths to raise homes (decreasing vulnerability to flooding), sanitation resources such as latrines and tubewells, social training, technical training, and educational

support (Blitz, 2012). It also connected char dwellers with microcredit and enterprise scheme programs as well as community-based healthcare, which they did not previously have access to because they were technically categorized as landless. This program was highly successful and actually raised some of the most vulnerable households above the extreme poverty threshold (Blitz, 2012). Bangladesh should use this policy as a guide for integrating the needs of communities into their policies.

Government coordination.

Nigeria.

Another flawed part of the NLTP is in the coordination of the implementation of the program. The government fails to effectively communicate with pastoralists about the reasons behind their forced transition to sedentary farming (Mullen, n.d.). The pastoralists are unfamiliar with sedentary farming methods, so if Nigeria wants this program to become effective, they need to implement strong agricultural education programs.

Agricultural ranches as well as temporary evacuation camps have rampant gangs and violence. This illustrates the weakness of coordination efforts because there are insufficient security personnel on the grounds of these ranches and temporary camps to ensure the safety of the inhabitants. It is crucial that Nigeria's federal government uses defense forces to protect displaced persons from being exposed to violence.

There is also an issue with coordination within the temporary refugee camps. Because of the lack of coordination between the federal government and these camps, as well as a lack of institutional capacity, people in these camps do not have their

fundamental rights upheld (Ogunwande et al., 2021). While there are a great number of institutions intended to protect the rights of internally displaced people, individuals' rights are infringed upon in IDP camps, or in some cases the circumstances of the camps make it difficult to uphold the individuals' rights (Ogunwande et al., 2021). Because of the lack of coordination between the federal government and these camps, as well as a lack of institutional capacity, people in these camps do not have their fundamental rights upheld. Because of insufficient data on displaced persons, individuals often are not able to know the fate of their missing relatives, which violates their right to mental and moral integrity. There is often sexual abuse of women in these camps through forcing women to strip and sexual assaulting them. Their physical integrity is also not upheld with the sub-par healthcare services, erroneous sanitary provisions, and lack of clean drinking water (Ogunwande et al., 2021).

Bangladesh.

Studies have shown that listening to the voices of local organizations, especially environmental organizations, improves the welfare of communities. Regional experience has shown that where local governments partner with water and sanitation utilities and civil society groups, there is an improvement in the quality of infrastructure and services provided to low-income citizens (Alam & Endacott, 2022). In Bangladesh, the government is not facilitating partnerships with local organizations because of its centralized nature. The government is thus not supporting local-level initiatives that thoroughly understand the needs of displaced community members but need institutional support to be successful.

Bangladesh faces challenges in coordinating government efforts, as seen by the uneven development between the east and western regions of Dhaka. The eastern, lower-density part of Dhaka did not receive any embankments, while the GDIFPP project intended to create huge water logging inside the protected area and exclude low-income communities. Another example is the National Rural Development Policy of 2001, which worked to help rural individuals that are impoverished, as there were no similar policies initiated in urban areas, which really need it with the urbanization trends. This reflects how the programs and policies of Bangladesh are not well-coordinated as they result in unequal development of different areas.

The government fails to put significant trust and funding into NGOs (Naz et al., 2024). This results in the NGOs' institutional capacity and availability to help people being lessened. In other countries, NGOs have a substantial influence in coordination efforts and power to help the community. I recommend that the government provides substantial investments for NGOs. I also recommend NGOs reframe themselves to emphasize the positive impact that they have on communities to gain the trust of the government and communities.

Bangladesh's government is highly centralized, which results in highly centralized implementation of policies that lack institutional capacity to understand the full scope of local issues, and policymakers tend to not consult with local stakeholders. Education is centralized, and as a result, is not doing a sufficient job with employment programs including supplementing existing skills and new vocational training. More region-specific vocational education would likely be more effective (Alam & Endacott, 2022). If local organizations were involved with these programs and policies, they would also be more

likely to be effective because they would be addressing the (specific) supply and demand of local markets and teaching people skills that would be applicable to industries that have jobs available (Alam & Endacott, 2022).

Institutional capacity.

Nigeria.

Because of a lack of institutional capacity, no progress has been made on this NLTP. Despite two years of implementation, no new ranches have been constructed, even though the plan projects the completion of 119 ranches by 2028 (Mullen, n.d.). This is a fundamental issue with Nigeria transitioning to the sedentarization system — while it may have the ability to mitigate violent conflict temporarily, it is a really intensive system that requires a lot of institutional capacity that Nigeria simply doesn't have (Agu et al. 2020).

There is a massive lack of resources seen in the treatment of Borno refugees, who make up over 66% of internally displaced people, who are put into underfunded temporary camps. Firstly, these temporary camps are too small because Nigeria lacks adequate emergency housing, so people are temporarily housed in schools and other public places that cannot properly accommodate such a great number of people. Schools have been forced to close either because of damage from flooding or because they had to be converted into temporary camps. As a result of the limited space in temporary camps, there is rampant disease. There are insufficient supplies, as well as delayed medical diagnostics and poor quality of healthcare. There is also a lack of adequate structures in general as the country has ended up having to close a majority of camps due to flooding in Bayelsa and Borno (Stromsta, 2024). The infrastructure of

these camps is also poor, as many are not safe and are vulnerable to violent attacks. There are also no resources to pay individuals for their personal injuries and compensate them for their lost or damaged property (Ekpa & Dahlan, 2016).

Bangladesh.

There are advantages and disadvantages to rural areas, secondary cities, and the big cities. In the big cities, migrants are likely to be living in severely overcrowded households, usually 100 square feet holding four to five people, leading to poor health outcomes. But secondary towns face the issue of scarce water supply, which has to be diverted to a small part of the town and needs to be sanitized through a multiple-hour boiling process (Tanjeela & Billah, 2022). This is due to a lack of infrastructure development and resource supply in Bangladesh. They don't have the money for improvements in water sanitization processes, and more efficient diversion networks that would encompass the whole population. They also are lacking proper investment in these high-density urban centers, which remain highly centralized and unequal. This leads to urban slums deteriorating in quality and consequent low well-being for the inhabitants. Urban dwellers also face natural hazards like landslides and flooding as well as fires (Tanjeela & Billah, 2022). The National Strategy on the Management of Disaster and Climate Induced Internal Displacement sets ambitious goals, but there is a lack of political ability and willingness to make progress towards these goals (Alam & Endacott, 2022).

A huge factor that is limiting the institutional capacity of Bangladesh's government is lack of resources. Their planned relocation and managed retreats are not happening yet because of space and resource constraints (Khan et al., 2021). A large

amount of Bangladesh's evacuation infrastructure is not adequate because of a lack of institutional capacity to invest in these crucial infrastructures. Cyclone shelters are inefficient, for example, both in accessibility and quality (Naz et al., 2024). Other structural elements that rural Bangladeshi residents in Khulna and Satkhira districts found inadequate include the caliber of medical and educational facilities and the availability of (welfare) services (Naz et al., 2024).

An issue that Bangladesh is facing is large-scale urbanization, which has been happening for decades now, but is accelerating even more so with the influx of climate migrants. These urban areas have long lacked, and continue to lack, the necessary infrastructure and political institutions to accommodate these large numbers of people (Camp, 1981). The Draper Fund Report argues that urbanization was proceeding too quickly for Bangladesh to develop adequate infrastructures and institutions in 1981, and urbanization has since escalated. Dhaka has had widespread sanitation and health issues because of overcrowding since the 1980s, and has not made significant progress in solving these issues (Camp, 1981). Thus, the outlook for these cities to accommodate more people appears very limited. Hence, it is crucial that Bangladesh controls its rural-urban migration and diverts populations from moving to overcrowded cities such as Dhaka.

Trust in government.

Nigeria.

This NLTP program was also an inadequate policy because of its impact on the Nigerian economy — the livestock sector makes up 3.2% of Nigeria's GDP (Agu et al., 2020). Thus, it caused Nigerian communities to suffer economically and become upset

with the government for passing the policy. The government, under the jurisdiction of the Land Use Act of 1978, has the right to “redraw boundaries between cattle routes, rangelands, and farm lands” to ensure peace (Agu et al., 2020). It has not utilized this power since that time largely due to prevailing political oppositions (Agu et al., 2020). This unreliable, volatile political climate underlies the Nigerian population’s low levels of trust in the government. This is not an ideal situation because the National Emergency Management Agency, the only means of assisting people in emergency situations (Ekpa & Dahlan, 2016), is completely underfunded and unable to properly assist the large quantity of people seeking refuge due to climate change impacts.

Another example of this ineffectiveness is how the river basin project has been neglected, which is crucial to Nigeria’s water supply (Agu et al., 2020). There is also a lack of community education and engagement, which not only neglects to include the community’s input in legislation, but also results in the Nigerian population feeling a lack of trust and support in the government (Agu et al., 2020). Nigerian communities that feel that they have been consistently let down by government policies should engage in collective action to have their grievances heard by the government; if successful, this would result in improved response to climate change–induced displacement.

Bangladesh.

Because the government has not been hearing out the concerns of communities, there is a low level of trust in government. This lack of trust in government leads people to put more trust into their social networks as opposed to the government. In a survey conducted by Martin et al., 19/20 respondents felt “complete trust” towards agricultural information given by their social network. In contrast, only half of the 20 respondents

“placed trust” in information from the government (national and local) (Martin et al., 2014). This finding shows that word-of-mouth discussions have more influence on people’s migration decisions than formal public institutions. This is concerning because it is essential that Bangladesh's government motivates migration for people living in hazard-prone areas as well as incentivizes relocation to secondary cities to prevent large cities from becoming more overcrowded. If the government does not influence people to migrate to secondary cities, migrants will continue to move to large cities where people can only find work that is low-income, and poverty will worsen on a large scale. Because of the low trust in the government, people rely on word-of-mouth communication with their social networks (friends and family) for work opportunities and places to migrate. If the government encouraged relocating somewhere that one’s social network did not, individuals are likely to be reluctant to follow the government’s advice over their social networks’. This poses an issue for the International Centre for Climate Change and Development, which is trying to divert migrants to fewer urban cities (Shahzar, 2023).

Chart of Independent Variables

IV	Bangladesh	Nigeria	Indonesia	Peru	Vietnam
Previous migration experience	High	High	Low	Medium	High

Culture and social networks	Low	Low	High	Low/Medium	High
Community Engagement	Low/Medium	Low	Undermined	Low	High
Government coordination	Low	Low	Medium/High	Low	Medium/High
Institutional capacity	Low	Low	Medium	High	Medium
Trust in government	Low	Low	High	Low	High
Dependent Variable Score	Low	Low	Medium	Medium	High

This chart shows the overall rating for previous migration experience, culture and social networks, community engagement, government coordination, institutional capacity, trust in government, and the dependent variable score for the five countries. Countries are either low, medium, high, low/medium if they fall somewhere in between low and medium, or medium/high if they fall somewhere in between medium and high. Undetermined is used for variables that do not have sufficient information to determine a score.

6. CONCLUSION

Overall, the findings of this study suggest that countries need to understand and address the needs of communities, improve the coordination of private, public, and community actors in implementing programs, and encourage communities to work together to compensate for weaknesses in institutional capacity and lower levels of trust in government to have a strong response to climate displacement. Countries should use Vietnam as a model for responding to climate displacement, despite not having a great amount of institutional capacity.

Climate change is an issue that is having devastating impacts on the climatic and weather patterns of countries. These effects contribute to the displacement of individuals and communities by adversely affecting their livelihoods, housing, and public health. The majority of these people that are displaced by climate change impacts remain within their country of displacement rather than migrating internationally, so they qualify as climate change-induced internally displaced people.

Some countries, Vietnam in this case, have a comprehensive, beneficial response to the citizens internally displaced by climate change as they are integrating long-term solutions that ensure economic, social, and physical welfare of their people. Others, such as Indonesia and Peru, have neither a strong response nor a weak response, as they have both strengths and weaknesses in their solutions. Their solutions are either temporary fixes that will not be sufficient for the continuous, worsening climate change impacts that are anticipated, or they provide unequal assistance among communities. Lastly, countries like Nigeria and Bangladesh have a weak response to people displaced by climate change as they are not fulfilling their

basic needs and are exacerbating pre-existing systemic issues such as inequality, ethnic tensions, violence, and poverty. This study aimed to understand why some countries have a better response to climate change-induced internally displaced people and found a few factors that have a connection with quality of response through inductive research.

Research has demonstrated that previous migration experience on a national level generally does not predict a better response to climate change-induced internally displaced people. With the exception of Vietnam, which has high previous migration experience, Bangladesh and Nigeria, which both have weak responses to climate change-induced displaced persons and have high levels of previous experience with climate migration, and Indonesia and Peru have moderate outcomes and low previous experience with migration.

The culture of Vietnam and Indonesia that encourages sharing and helping one's community helped their response to climate change-induced migrants. In contrast, the cultures of Bangladesh and Nigeria, which include limited social networks due to ethnic tensions, inhibited their response to climate change-induced migrants. Despite Peru being collectivist, research did not show individuals prioritizing helping their communities but did show that Peruvians value social networks.

Community engagement and inclusion in policies is a strength of Vietnam, which helps their response to managing climate change-induced migrants. Community voices are ignored in Bangladesh's policies, with the exception of the char dwellers programs. Nigeria's policies are not inclusive of pastoralist communities, which hurts their response to climate change-induced migrants because they do not take real-life

experiences and lifestyles of Nigerian people into account when crafting policies. Peru is an anomaly in that despite its limited community engagement and inclusion in policy making, due to strong government mental institutional capacity, it is still able to have a moderately beneficial response to climate change-induced migrants. There is insufficient data in Indonesia in this area, but Indonesia has stated that it intends to include community perspectives in relocation programs in the future.

Government coordination is weak in Bangladesh and Nigeria, which hurts the implementation of their policies that are meant to provide assistance for people that are displaced by climate change impacts. Indonesia and Vietnam demonstrate effective government collaboration, which helps their programs and policies serve people displaced by climate change. Peru is highly decentralized, so implementation of federal policies is not coordinated well between regions.

Government institutional capacity is high for Peru, which helps make up for their other weaknesses. Vietnam and Indonesia have moderate levels of institutional capacity, but because of their differences in other variables affecting implementation, Vietnam's response is strong and Indonesia's response is moderately strong. The institutional capacity of both Bangladesh and Nigeria is fairly low, which makes it hard for them to get anything substantial done in their countries in terms of response. However, the national capacity is still at a comparable level to the other countries, which allows for a fair comparative analysis.

The populations of both Bangladesh and Nigeria hold significant distrust in their governments because they are corrupt and neglect communities, which inhibits implementation of policies that provide assistance to displaced people. Peru faces

similar low levels of trust in government due to its similar history of corruption and civil war, but because of its higher institutional capacity, it is able to respond to displaced persons better than Bangladesh and Nigeria. The respective populations' trust in Vietnam and Indonesia's governments is high, which helps them successfully implement their programs because communities are willing to comply with the governments' plans, programs, and policies.

Limitations

A major limitation of the research is that I excluded countries that had significant confounding factors that contributed to people qualifying for refugee status. There are numerous countries with high amounts of refugees due to climate change that were excluded from the research because they had higher amounts of refugees displaced by conflict.

Another limitation is that while these countries are meant to be representative of the whole world, every country has unique political and social dynamics that impact policy. Thus, only five countries are included in this study, so these results cannot be definitively generalized for every country.

Another limitation is that there was an inadequate amount of data and literature available on the integration of community perspectives in Indonesia's policy. I was unable to find sufficient literature on disaster protocol in Nigeria, temporary relocation in Bangladesh, and long-term livelihoods after relocation in Peru and Indonesia. These gaps in knowledge resulted in an imperfect comparative analysis of the responses of Nigeria, Peru, Indonesia, and Bangladesh.

Future Research

I recommend that future research focus on filling in the gaps that I found in my research. This includes climate change-induced displacement programs and policies in Cuba and Brazil. These countries were specifically ruled out for lack of literature. There was a lack of English sources specifically for Brazil, so I recommend that an individual who is bilingual in Portuguese and English conduct research in this area. For Cuba, this was a lack of negative literature, likely because of the authoritarian Cuban government. More research should also be conducted on the integration of community perspectives into Indonesia's policies. Research should also be conducted on the disaster protocol in Nigeria, temporary relocation in Bangladesh, and long-term livelihoods after relocation in Peru and Indonesia.

I recommend that more comparative historical analysis modeled studies be performed that aim to uncover what factors predict and have a relationship with successful global climate refugee policy. Displacement due to climate change is an ever-worsening issue, so I recommend that researchers work to fill this data gap that is going to become more relevant and important in the coming years. Over the next five years, different countries will be experiencing more climate change impacts, resulting in a rise of displaced people, an issue projected to intensify further over the following decade. Therefore, there will be more countries able to be used for a comparative analysis in this area of research in the coming years.

Farmer-herder conflict is widespread across West and Central Africa. Mullen et al. uses the example of Mali and the Democratic Republic of the Congo as countries with especially intense farmer-herder violence. I would argue that even if the NLTP is

carried out by Nigeria and has favorable immediate outcomes, other countries should not implement similar plans because they will not be sustainable with climate change impacts worsening every year. Southern Nigeria has less land and faces a higher population, so as the Northern people migrate to the South, the population density problem is going to inevitably worsen, and there isn't going to be enough land for this plan to work. Thus, the other programs regarding farmer-herder violence and pastoralism in West and Central Africa should be studied, in comparison to Nigeria's NLTP plan.

Indonesia is currently planning a large-scale relocation program that aims to move the whole city of Jakarta, which has the highest population in Indonesia and is at risk of becoming underwater in the next twenty-five years. Jakarta residents will be moved into a completely new city (Azmy, 2021). This project is still being planned, so this study was not able to analyze its implementation; however I recommend that future research study the success of this program, as it will be one of the largest climate-induced relocations in history.

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