

**Historical Impacts of Climate Related Disasters on Refugee Migration and the Future of
Climate Change Migration Governance**

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The international dialogue on climate change and environmental migration has been taking place since a United Nations Environmental Programme researcher, Essam El-Hinnawi, proposed the term “environmental refugee” in the 1980s (El-Hinnawi 1985). In a 1990 report released by the Intergovernmental Panel on Climate Change (IPCC), the organization projected that the single greatest impact of climate change would be human migration (IPCC 1990). Yet no consensus within the academic community nor within global political networks on how to identify, govern and protect individuals displaced by environmental disasters has been built. Challenges in classifying individuals displaced by environmental events including identifying the causal mechanism(s) that influenced the decision to move; differentiating these populations from other migrant population; creating an effective legal framework efficiently to meet the needs of those already being displaced; and allocating legal responsibility across governance bodies and regions. These challenges have hindered the development of an international legal framework to identify and provide meaningful protection to these displaced persons.

A fundamental challenge in addressing climate change migration is the existing international legal migrant classification methodology which broadly designates migrants into basic categories of economic migrant or political refugee. Such a framework overlooks the influence that environmental, social and or demographic factors can play in a population’s decision to move away from their homeland. Consequently, existing international migration laws overlook the complex interactions that occur between various migration push and pull factors, thereby, underestimating the role that environmental factors like climate change can have on existing migration patterns. This type of causal reductionism makes identifying, differentiating, and acknowledging environmental or climate change displaced persons difficult.

This paper will first analyze historical trends in country level outgoing political refugee migrations from 1960 to 2016 and compare them to occurrences of natural disasters in those same states. The aim is to demonstrate that climate related environmental disasters influenced the historical migration of political refugees. Such results would highlight the false dichotomy between migrant classifications and demonstrate that environmental events already influence the movement of individuals across borders, though they are not recognized as environmentally displaced persons.

The second part of the paper will focus on the governance options and challenges that the international community faces in trying to address this issue. I will consider the role that the United Nations and its subsidiary bodies can play in collaborating and coordinating international climate change displacement governance efforts. I will also evaluate the effectiveness of regional, multilateral and international legal changes in addressing the needs of environmental and climate change displaced persons. Ultimately, I suggest that a series of regional level agreements governed under the umbrella organization of the United Nations Framework Convention on Climate Change and guided by principles set out by the Nansen Initiative and the Platform on Disaster Displacement would provide the best and most efficiently employed legal mechanism to protect climate change displaced persons today.

1. Background

Anthropogenic climate change, caused by the exacerbation of the natural greenhouse effect due to increased human greenhouse gas emissions, has altered the intensity, frequency, timing, duration, and geographical reach of many extreme environmental disasters and slow onset events (IPCC 2014). The average number of extreme heat days have increased since the 1950s; many

regions are experiencing increases in heavy precipitation events leading to increased risks of flooding; the global mean sea level has risen due to thermal expansion and ice cap melt, threatening low lying coastal zones; tropical storms and droughts, in certain areas and seasons, are also projected to intensify because of a changing global climate (ibid). These climate change impacts all have the potential to threaten population livelihood sustainability and the viable habitability of certain regions around the world.

Multiple theoretical and quantitative studies have argued that environmental factors, particularly those linked to climate change, influence population migration and displacement (Hunter et al., 2015; Black et al. 2011; Gray and Mueller 2012a; McLeman 2013a; Mueller et al. 2014; Nawrotzki et al. 2015). Individuals living on small developing island nations face sea level rise, salt water intrusion and increasingly frequent flood events that threaten their homes and crops (Nurse et al. 2014). Such events have threatened the habitability of these areas and in some cases individuals have sought to claim refugee status in neighboring states, calling themselves climate change refugees (Dastgheib 2015). Some African and Middle Eastern nations such as Somalia and the Syrian Arab Republic have faced devastating droughts, which some scholars argue lead to internal migration, conflict and international refugee migration (Gleick 2014; Kelley et al. 2015; Maystadt and Ecker 2014). Despite these occurrences, the international recognition, classification, and legal protective frameworks that address populations displaced by environmental and or climate change related events remains inadequate.

Causal reductionism is one of the fundamental challenges with which most contemporary migration frameworks and legal regimes struggle. Migrants tend to be classified as individuals who move from one location to another to either seek better economic opportunities or to flee political persecution (Zetter 2008). The rising discourse and challenge of climate change and

environmental displacement is complicated by this migration classification system. Some environmental migration scholars (Myers 1993; Myers 2002; Warner et al. 2009; Kolmannskog 2008; Bogardi and Warner 2009) attempt to quantify the challenge of environmental and climate change migration, projecting that there will be mass waves of millions of environmental and climate change migrants or refugees in the coming years. Such estimations have been heavily criticized by other scholars due to the challenge of identifying climate change as the sole causal mechanism that drive population migration (Kibreab 1997; Black 2001, Castles 2002; Boano et al. 2008).

Contemporary migrant labels and legal classifications generally overlook the complexity of interrelated push and pull factors that influence an individual or community's decision to move away from their homelands. Black et al. (2011) argues that there are five categories of migration drivers: social, economic, political, demographic, and environmental, all of which overlap and interact to motivate an individual or population to migrate away from their point of origin. Accordingly, when considering the impacts that one of these categories of factors has on population migration, consideration of other related migration drivers must be considered.

2. A Historical Analysis of Political Refugee and Environmental Disaster Trends: Methods

To understand the impacts that climatic environmental disasters have on population migration, I ran a country level time series analysis comparing refugee migration to the number of individuals impacted by extreme climatic environmental events. This analysis highlights the role that environmental factors played in the displacement of recognized refugee populations between 1960 and 2016.

2.1. Data

The dependent variable, the number of political refugees, is measured using data from the UNHCR Population Statistics Database (UNCHR, 2016). This dataset uses a country year format and counts the number of refugees and individuals in ‘refugee-like situations’ recognized under the UNHCR’s 1951 Refugee Convention and its 1967 Protocol (UNHCR 1951). Yearly data was available from 1951 to 2016 for 219 different nations of origin including values for refugees whose origin was classified as ‘Stateless’ or ‘Various/Unknown.’

The World Health Organization and the Centre for Research on the Epidemiology of Disasters Joint Emergency Disasters Database (EmDAT) provided independent variable data on the number of occurrences of certain types of environmental disasters and the total number of people affected by those disasters in a given country year (Guha-Sapir, Below, and Hoyois 2017). I chose to use the number of individuals affected by a given disaster as my independent variable rather than a raw count of the number of occurrences of environmental disasters to capture the severity of the disaster and because not all environmental disasters impact populations. For example, extreme temperatures could be recorded in northern Canada and impact very few people since that region is sparsely populated. Additionally, the same event could happen in two locations and have differentiated impacts on the populations living in those regions due to pre-existing vulnerabilities and capabilities to respond to that environmental event. Such differences in scale of impact and population vulnerability creation cannot be captured by basic disaster occurrence data. This study uses Emdat country level data on the number of people affected by droughts, extreme temperatures, storms, and or floods. These environmental disaster types were chosen because they are projected to increase in severity and or frequency as global climate change progresses (IPCC 2014).

The EmDAT and UNHCR data were merged resulting in a total of 187 country matches between the years 1960 and 2016. Discrepancies between the datasets existed largely due to country of origin classifications. For example, although there was data for Tibetan refugees, EmDAT did not recognize Tibet as a country, likely due to the Chinese occupation of the nation. Additionally, unmatched data, including data for refugee origins that the UNHCR classified as ‘Stateless’ or ‘Various/Unknown’ were omitted.

To make the data comparable across countries, the basic state characteristic variables of population and population density were accounted for, using the World Bank’s World Development Indicators data (WDI 2017) acquired from the Quality of Government Institute dataset (Teorell et al. 2017). States with higher and more congested populations and higher population densities are likely to have higher counts of individuals impacted by environmental disasters. Additionally, larger states that produce refugees are likely to produce more refugees than smaller nations merely due to their population size.

2.2. Geographic Information System (GIS) Maps

To analyze the broad, global trends in environmental disasters and political refugees over the study period from 1960 to 2016, I created a series of six geographic information system (GIS) maps that depict the decadal average of the proportion of a country’s population that are outgoing refugees and proportion of a country’s population affected by environmental disasters. To create global GIS maps, country boundary data (GADM) from the Global Administrative Areas database were uploaded into the ESRI ArcGIS software program (GADM 2012). The UNHCR and EmDAT data were joined to GADM data in ArcGIS.

Each of the five maps created in ArcGIS, plots averages of data for a given decade within the dataset, except for the 1960s due to an insufficient quantity of data. Each map shades

countries based on the decadal average proportion of that country's population affected by environmental disasters, with darker colors indicating that a larger proportion of the impacted population was impacted by environmental disasters. States were separated into 6 classifications (colors) of the proportion of their population impacted environmental events. These classifications were held constant across decades to make the maps comparable. The maps also contained graduated symbols representing the decadal average proportion of a country's population that were considered as outgoing refugees. These symbols were overlaid on their respective countries with larger dots representing larger refugee populations. Furthermore, the classification of various symbol sizes were held constant across states and decades for the sake of cross country comparison.

3. Results

The global number of refugees and individuals affected by environmental disasters fluctuated year to year between 1960 and 2016. However, there was a general positive increase in both the global annual number of individuals impacted by environmental disasters and the number of refugees that crossed state lines to seek asylum in foreign nations (Figure 1). The slope of the trend line for the increase in the number of yearly global refugees was 234,647.2. The slope of the trend line for the increase in the number of individuals affected by environmental disasters was 4,569,830.

The five sequential decadal average GIS maps (Figure 2, 3, 4, 5, 6) demonstrate a general trend of increases in both the proportion of state populations impacted by environmental disasters and the proportion of state populations that were classified as outgoing refugees over time. This is indicated by an increase in the number of states being shaded, particularly those being shaded in darker hues. The sequential maps demonstrate an increase in the number and

size of the graduated symbols, which represent the proportion of a states' population that were labeled as refugees. This trend indicates that not only are individual countries producing more refugees than they were in preceding decades, but that other countries are producing refugees who did not previously.

4. Discussion

There were observable increases in both the global number of political refugees produced and the number of individuals impacted by climate related environmental disasters from 1960 to 2016. This does not necessarily indicate a causal relationship between these two trends. However, past theoretical analyses on the impact of environmental disasters on migration and the climate-security nexus (Brzoska and Frölich 2015; Barnett and Adger 2007; Salehyan 2008; Burrows and Kinney 2016), suggests that there is a relationship between these two trends. The two phenomena may be mutually reinforcing due to the relationship between environmental disasters and conflict and the general vulnerability of refugee populations to environmental hazards including environmental disasters (Warner et al. 2010).

Climate related disasters can increase migration and conflict. For example, from 2007 to 2010, the Syrian Arab Republic experienced its worst 3-year drought on state record (Trigo, Gouveia and Barriopedro 2010) causing over 800,000 Syrians to lose their agriculturally dependent livelihoods (UNHCR 2010). Approximately 1.5 million Syrians moved to urban centers (IRIN 2009; Solh 2010) and later in 2011, the Syrian civil war and consequent refugee exodus occurred. Many scholars have argued that the Syrian drought influenced the outbreak of conflict and the consequent refugee crisis in Syria (Kelley et al. 2015; Werrell et al. 2015; Gleick 2014). However, none of them claim that climate change was the core causal mechanism that

lead to the Syrian uprising. This case demonstrates the impact that environmental disasters can have on increasing the number of internal migrants and potentially external refugees.

The majority of refugees move to urban areas (UNHCR 2009). Increased urbanization has been linked to increased municipal vulnerability to climate related events due to limited availability of resources and services (ibid). For example, in Bangladesh, many coastal communities have moved to the state's capital, Dhaka, and settled in zones vulnerable to monsoons and flooding (UNDP 2015). Consequently, more individuals are impacted and harmed by the damaging floods and monsoons that have been hitting Dhaka in recent years.

The number of individuals impacted by environmental disasters in a given state and the number of refugees produced by a given state fluctuate over time due to social, political, economic, climatological, and geophysical changes that the state experiences. Therefore, most states do not demonstrate a steady positive linear trend in either of these variables. Nevertheless, the maps do mirror the general global trend of increases in both refugees and individuals impacted by environmental disasters. However, the relationship between these two variables at the state level is more difficult to analyze. The apparent non-linear relationship between these two variables at the state level may be explained by the complexity of the climate-security-migration nexus and the influence that confounding variables like state characteristics may have on the mapped data.

Across the decades (barring the final decade map), India typically demonstrated, that high proportions of their country's population were impacted by environmental disasters relative to other nations. These results align with the country's vulnerability to a wide range of extreme climate related weather disasters including sea level rise, extreme temperatures, droughts, and

floods which threaten public health and food security (IPCC 2007). Furthermore, the nation has a history of internal communal violence and persecution primarily between Hindu and Muslim religious groups (Adney and Wyatt 2010), which would suggest a breeding ground for refugee populations. However, on the GIS maps, this country consistently demonstrated comparatively low proportions of its population being classified as refugees. A core factor of this trend may be the geographic size and regional heterogeneity of India. My maps only measure the number of refugees produced by a country and it, therefore, does not consider internal displacement of populations. Intra state migration is often a more economically and socio-politically feasible option for individuals seeking to leave their homelands (Goodwin-Gill and McAdam 2017). This may be especially true in a large and diverse country like India, where more climatically, economically, socially, and politically hospitable environments may be found within the confines of one's country of origin.

The clearest country level relationships between the decadal averages of the proportion of a country's population affected by environmental disasters and the proportion of its population that are refugees was demonstrated by small island nations across the globe such as those in the South Pacific and the Caribbean. There were temporal increases in the number and size of refugee populations being produced by island nations across the mapped time-period. In accordance with this trend, there was a simultaneous increase in the relative proportions of island nations' populations that were being impacted by environmental disasters. Multiple studies have indicated that small island nations, particularly those that are still classified as developing nations, are some of the most vulnerable to climate change (Betzold 2015). Consequently, these nations are already experiencing the impacts of many climate related disasters such as strong tropical storms, flooding, and droughts (Nurse et al. 2014). Following the theoretical framework

that posits that environmental stressors such as food insecurity, water insecurity, and resource scarcity can lead to increased competition and conflict, increases in the state level proportion of the populations impacted by climate related environmental disasters may partially explain the observed increases in the proportion of small island nation populations classified as refugees.

My results comparing global refugee populations to the number of individuals impacted by environmental disasters (Figure 1) reveal clear increases in both trends. As I acknowledged at the onset of this study, environmental factors are only one of many influences that drive population migration. This is illustrated in the state level analysis of the relationship between these two variables on the GIS maps, in which some states demonstrated diverging trends in the decadal average proportions of their populations that were impacted by environmental disasters and that were refugees. However, the purpose of this study was strictly to illuminate that environmental disasters, particularly those linked to climate change, may have historically played a role in the migration of political refugees, and to challenge existing delineated conceptions of types of migrants.

My analysis focused on the displacement of individuals who are already classified as political refugees by the Office of the United Nations High Commissioner for Refugees (OHCHR). It challenges the existing migrant and refugee classification system by suggesting that environmental factors may have influenced political refugee migration. The populations in my analysis represent individuals who already receive international recognition and the legal protection such recognition provides. The majority of climate change or environmental migrants do not meet the standards required to be considered refugees and, therefore, are not afforded such protection. However, some climate change and or environmental migrants were

acknowledged as refugees and were therefore included in my analysis. These groups are typically those whose governments “consciously withheld or obstructed assistance in order to punish or marginalize them” (Goodwin-Gill and McAdam 2017) in the wake of a natural disaster on the grounds of race, religion, nationality, membership of a particular social group or political opinion. Political refugees resulting from violent conflicts which may have been influenced by natural disasters (ibid) may also be among the climate change or environmental refugees counted in my study.

Despite the popularization of the term ‘climate change refugees,’ most migrants displaced by environmental and or climate related events are not recognized by existing international laws and therefore receive no legal protection that is afforded to traditional refugee populations. Given the observed trends in Figure 1 and the projected increases in climate change induced migration and displacement, the lack of a legal mechanism to assist or acknowledge climate change migrants demonstrates shortcomings in international climate change governance.

5. Refugees versus environmental and climate change refugees

The term “environmental refugee” was first popularized in the 1980s by a United Nations Environmental Programme researcher, Essam El-Hinnawi (El-Hinnawi 1984). Since this time, the label and its corollary ‘climate change refugee’ have been generously applied to populations across the globe and utilized by media platforms and scholars alike (McVeigh 2017; Christian Aid 2007; McLeman 2011; Gemenne 2011; Bogardi and Warner’s (2009). However, classifying persons displaced by environmental events as refugees is an extremely contentious topic and continues to dominate the environment-climate change-migration discourse.

The United Nation's 1951 Refugee Convention and its 1967 Protocol are the core documents that govern refugee populations that cross international boundaries. As previously referenced, they have a very specific definition of what constitutes a refugee. Refugee status under the 1951 Refugee Convention grants refugees access to the right to work, public education, access to the judicial system and to non-refoulement, which protects individuals from being returned to their country of origin in which their life or freedom were threatened (UNHCR 1951, article 33). However, neither "environmental" nor "climate change refugees" fall within the UNHCR's definition and therefore their status is considered legally nonbinding (Warner 2010). Accordingly, there is currently no international framework to protect "climate or environmental refugees" and their rights (Warren et al. 2006; Biermann & Boas 2010).

As laws to govern the rights of environmentally displaced populations fall to their home countries, a semblance of a governance institution to protect the rights of internally displaced persons exists in most nations (Biermann & Boas 2010). However, Biermann and Boas (2010) argue that reliance on migrants' countries of origin to take responsibility for their own environmental or climate change displaced populations can give rise to three major complications. Firstly, climate change is a global problem caused by the entirety of the human population. Therefore, diverting responsibility of care for groups afflicted by the injurious impacts of climate change to their own countries, some of which are economically impoverished, is unjust and irresponsible. Secondly, some small island nations are projected to be completely submerged, meaning their citizens will become a stateless people. If the responsibility of climate and environmentally displaced persons falls to the citizen's home country, and that home country ceases to exist, then the rights and protection of those displaced populations are completely disregarded. Finally, many populations, especially those displaced by climate-change-induced

sea level rise, will never be able to return to their homes and may therefore, be entitled to special legal recognition and resettlement rights. These complications illuminate the need to fill the international legal vacuum to address environmental and climate change migrant populations. However, the best way to identify these populations and meet their needs is unclear.

A fundamental challenge of classifying climate or environmentally displaced persons is identifying the climate change induced environmental stressors as the primary causal mechanism stimulating migration. People are driven or forced to migrate by a range of push and pull factors including environmental, social, political, economic, and demographic ones (Black et al. 2011). Consequently, classifying populations as solely climate change migrants or refugees is a largely impossible task. This is one of the central criticisms of studies on climate change or environmentally displaced populations. Studies including Christian Aid 2007, Myers and Kent 1995, Myers 2002, and UNHCR 2009 have presented estimates on the number of climate change or environmental migrants. Many other scholars Kibreab (1997); Black (2001), Castles (2002); Boano et al. (2008) have noted that these estimates are largely inaccurate due to the challenge of identifying migration causal mechanisms and population movements. Furthermore, the scholars who provide numeric estimates of the number of environmental or climate change migrants are also guilty of migration causal reductionism and overlook the interactions between various types of push and pull factors that influence an individual's decision to move.

6. Potential Environmental Migration Governance Bodies

Several subsidiary bodies of the United Nations, namely the UN General Assembly, the UNHCR, the Office of the United Nations High Commissioner for Human Rights (OHCHR), the United Nations Security Council (UN Security Council), and the United Nations Framework Convention on Climate Change (UNFCCC), could potentially be employed to help address and

govern environmental or climate change displaced persons. However, none of them have the mandate to do so at the present. A cooperative effort between these five subsidiary bodies and regional governments around the world would provide the most effective coverage and protection for environmental and climate change migrants. But, I would argue that the UNFCCC and its Task Force on Displacement is best suited to take a leadership role in coordinating various actors in identifying and protecting environmental and climate change displaced populations.

The UN General Assembly's charter allows it to make recommendations and suggest studies to other UN bodies upon matters related to international security and peace (UN 1945, Art. 10 and 11). Mayer (2011) argues that if the UN Security Council formally recognized climate change migration as a threat to international peace and security, it would be within the power of the General Assembly to establish an independent fund and governing body to address the issue of climate change induced migration. However, such bodies are typically built upon specific treaties or documents which define their mandate (Ibid). Therefore, barring agreement upon an international treaty devoted to the protection and governance of environmental and climate change migrants, it is unlikely that the UN General Assembly will hold a dominant role in governing this issue.

The OHCHR is the UN agency tasked with protecting and promoting human rights as defined by the 1948 Universal Declaration on Human Rights (UN General Assembly 1948). Environmental and climate change displacement threaten many of these basic rights including the right to security, the right to self-determination, the right to pursue economic, social and cultural development, and the right to an adequate standard of living for health and wellbeing (Levy & Patz 2015; OHCHR 2015). The OHCHR has recognized climate change as a

fundamental threat to human rights saying, “It is now beyond dispute that climate change caused by human activity has negative impacts on the full enjoyment of human rights,” (OHCHR 2015). Consequently, some of the responsibility for protecting environmental and climate change migrants could fall to the OHCHR. However, this agency primarily provides aid and designates the primary responsibility of human rights protection to state governments (OHCHR 2003) , and therefore, could not unilaterally provide any meaningful protection to environmental and climate change migrants.

The UN Security Council’s job is to uphold international security and peace (UN 1945, Art. 24). The scope of this mandate could arguably be extended to include the governance of climate change or environmental migration if the council determined that such migration was a “threat to the peace, breach of peace, or act of aggression,” (UN 1945, Art. 39). It could exercise its power to govern this challenge through measures such as economic sanctions or the use of force (UN 1945, Art. 41 and 42). The UN Security Council has previously released statements expressing concern over the security threat posed by climate change, specifically in the case of sea level rise and regional instability (UN Security. Council Pres. 2011). Furthermore, the body has previously acted on issues of migration (UN Security Council 1992). Therefore, it is not implausible that climate change and environmental migration could be recognized by this UN body. (Conway 2010; Ng 2010; Voigt 2009; Shirley V.Scott 2008) even argued that the UN Security Council could play a role in enforcing emissions targets as a means to reduce the threat that climate change poses to international peace and security.

The UNHCR is tasked with the protection of individuals who meet the refugee classification as defined by their 1951 Refugee Convention (UNHCR 1951). Some climate change or environmentally displaced persons already fall under their mandate, however the

majority do not. In 2015, the UNHCR lent its support to the Platform of Disaster Displacement, a follow up to the Nansen Initiative, which creates best practices and guidelines for managing and protecting environmentally displaced persons (UNHCR 2015). That same year the UNHCR aligned itself to provide technical support and advise to the UNFCCC in addressing human mobility in the face of climate change (ibid). While the UNHCR does acknowledge that climate change and environmentally displaced persons merit protection, they argue against the inclusion of these populations under its mandate. The UNHCR notes that such a move would decrease the quality of protection the body could provide to traditional refugees and overextend the resources and capabilities of the body itself (Glahn 2009).

The UNFCCC is arguably the subsidiary body best suited to address environmental migration related to climate change as they are the body devoted to addressing all issues related to climate change (UN General Assembly 1994). The UNFCCC has already initiated processes and created committees that could ostensibly create guidelines and act as a coordinating body for all issues related to climate change displacement. In 2007 at the 13th COP, parties announced that they launched efforts to consider the means required to address losses and damages related to climate change, which would include individual's homes, and consequently can be evaluated to include displaced persons (UNFCCC 2007). Three years later, the Cancun Adaptation Plan was established to lay the groundwork for addressing climate change loss and damage (UNFCCC 2010). Then at the 18th COP in Doha, the parties agreed that the COP would play a key role in addressing climate change loss and damage (WIM 2017). This announcement lead to the creation of the Warsaw International Mechanism for Loss and Damage (WIM) and its executive committee, whose role is to address issues of loss and damage caused by climate change events such as environmental disasters and slow onset events (UNFCCC 2012).

At the 21st COP in Paris, the parties established mandates for a Task Force on Displacement, which was officially put into action at this year's 23rd COP in Germany (WIM 2017). The Task Force on Displacement's role under the WIM is to work with existing bodies and groups including the Adaptation Committee, the Least Developed Country Expert Group, and external bodies such as regional governments, to “develop recommendations for integrated approaches to avert, minimize and address displacement related to the adverse impacts of climate change (UNFCCC 2016, Decision 1/CP.21, paragraph 49).” Although this body lacks the capacity to govern the international problems of environmental and climate change displacement on its own, I would argue that it could serve as a coordinating body across states and regions to provide information on best practices and guidelines to managing, governing and protecting migrant populations. They could also serve as a mediating third party in migration disputes between states and or regions if problems arise. Given the global momentum in climate change action that was demonstrated by the passing of the 2015 Paris Agreement, I believe that this body has the most potential in guiding international, regional, and state level actions to create climate change migration frameworks.

7. Nansen Initiative and the Platform to Disaster Displacement: A guiding framework

One mechanism that could be employed to support the creation of a broad based environmental and climate change migration governance framework that could be adjusted and implemented across states and regions is the Nansen Initiative and its follow up, the Platform on Disaster Displacement. This non-governmental organization and framework was an intergovernmental effort between Switzerland and Norway that was established in 2012 (The Nansen Initiative 2011) and the Platform was created in 2016 (The Platform on Disaster Displacement 2016). Both organizations consult with governments around the world “to build

consensus among states on the elements of a protection agenda, which may include standards of treatment,” for disaster induced cross border migrants (The Nansen Initiative 2011). Such efforts provide a framework and set of guiding principles that can be efficiently mobilized to help states and regions build legal mandates to govern and manage environmental and climate change migrants that may be applied globally.

8. Proposed Solutions

8.1. Redefining Refugee Status

One option to address the needs of environmentally displaced persons would be to expand the 1951 Refugee Convention’s refugee definition to include those displaced by environmental factors, particularly climate change. This alteration would not require an international body to draft and agree upon a new treaty and or mandate. Furthermore, it would allow environmental or climate change displaced persons’ access to the same rights provided to traditional refugees. Given the complex relationship between environmental events, conflict, and migration, the expansion of the 1951 Refugee Convention’s mandate is not implausible. However, many scholars and legal bodies have ardently rejected this proposed solution.

The UNHCR has expressed a concern that expanding its mandate to include individuals displaced by environmental events would weaken its ability to protect traditionally recognized refugees (Atapattu 2009, Compton 2014, Moberg 2009). Given projections of the number of environmental and climate migrants that the world could see in coming years (despite their probable inaccuracy), the UNHCR could find itself responsible for hundreds of millions more individuals. For an organization, whose resources and capabilities are already acknowledged as over extended (UNHCR 2016; Kingsley et al. 2015), the expansion of the mandate may decrease the quality of protection for all vulnerable refugees and or displaced persons. Consequently,

there has been little international action to expand the global definition of refugees as acknowledged by the UNHCR

Biermann and Boas (2010), Hodgkinson et al. (2008), and Docherty and Gianni (2009) proposed that rather than redefine existing legal conceptions of refugee populations, it may be more effective to create a new migrant category to encompass environmentally displaced persons, specifically ‘climate change refugees.’ They argue that a new category is required as climate change refugees have unique characteristics that differentiate them from traditional refugees and migrants (ibid). These proposals would require the creation of a multilateral framework, independent of existing refugee law, and an organizational body to govern the movement and relocation of climate change migrants and or funds. However, a politically and economically feasible and comprehensive way to govern, allocate, and relocate environmental migrants has not been identified.

The creation of an institution and organization to govern, finance, and manage environmental and climate change migrants would be a timely and costly process, which could take years to create, negotiate, and implement. It would obligate that governing body to identify climate change as the central cause that forced an individual or population to migrate which, as previously stated, is a difficult case to make in a court of law (McAdam 2011 and Harris 2014). Furthermore, such multilateral agreements often only provide the “lowest common denominator” of protection (Blum 2008) due to bureaucratic arguments and disagreements over state and governing body capabilities and responsibilities’. Consequently, this solution could not be efficiently deployed to protect and govern this substantial body of migrants in a meaningful and effective manner.

8.2. Regional Mandates

Neither the solution of amending the globally applicable refugee definition under the UNHCR's 1951 Refugee Convention nor that of creating a multilateral treaty whose primary mandate is to protect and govern environmental refugees would provide comprehensive and meaningful protection to the rights of environmentally displaced persons in an efficient manner. I argue that a regional approach, using the UN's existing refugee framework and guided by the Nansen Initiative, would provide the most functional and comprehensive legal safety net for environmental or climate change migrants. The advantages of such a framework would prevent broad but inefficient global arguments over which countries are most responsible for funding and accepting environmental or climate change migrants or refugees. The UNFCCC concept of *common but differentiated responsibilities* should play a role in governing existing and future displaced populations, however creating a framework that considers this principle will be challenging to employ in an efficient manner to meet the needs of individuals who are already being displaced by environmental events. Furthermore, it may be more effective for the principle of *common but differentiated responsibilities* to be exercised through designation of funds and institutional support.

One fundamental challenge that the creation of an international framework on environmental and climate change displacement is the decision of where to relocate migrant populations. One recommended solution is the creation of a cap-and-trade program for environmental migrants in which countries can pay to offset their potential immigrant population to other nations (Schuck 1997). Other studies have suggested that migrants should be allocated to countries based on historical emissions under the guise of *common but differentiated responsibilities* (Gerrard 2015 and Moberg 2009). Both of these options violate the right to self-determination, meaning individuals can "freely determine their political status and freely pursue

their economic, social and cultural development (UN General Assembly 1966).” These solutions disregard the regional and geographic preferences of climate or environmental migrants by designating them to states based on an international governance board. Consequently, many migrants may find themselves in new countries, cultures, and sociopolitical structures with which they are unfamiliar and unaccustomed. A regional approach to addressing the displacement of climate change and environment migrants can potentially overcome this challenge by allowing migrants to move to countries with similar physical, cultural, and societal climates. Furthermore, self-determination can allow environmentally displaced communities to move together, thereby aiding in the preservation of that unique society’s culture and traditions.

Regional bodies in Africa and Central America have expanded their legal definitions of refugees to encompass environmental or climate migrants, though admittedly they did not do so with the inclusion of environmentally displaced persons in mind (Burleson 2010; Renaud et al. 2007). It must be acknowledged that these legal changes only apply to refugees that move within the region and therefore, do not provide a legal safety net for individuals from other regions in the world like the extremely vulnerable small island nations. However, the creation of such regional frameworks across the globe could prove to be the best solution to environmental migration, particularly in the face of climate change.

The Cartagena Declaration on Refugees was a regional agreement signed by delegations from Belize, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama and Venezuela in 1984 (UNHCR 1984). This agreement expanded the regional definition of a refugee to include "persons who have fled their country because their lives, safety or freedom have been threatened by generalized violence, foreign aggression, internal conflicts, massive violations of human rights or other circumstances which have seriously disturbed public

order,” (Ibid). Environmental disasters have been recognized as “circumstances which have seriously disturbed public order,” (Atapattu 2009), and therefore migrants displaced by such disasters are recognized and protected by refugee law in this region of Latin America. It must be acknowledged that the Cartagena Declaration on Refugees is a non-binding agreement; however, it at least considers environmentally displaced individuals as refugees thereby providing a regional legal framework that can be applied to those populations.

The African Union also broadened its regional definition of refugees in the OAU Convention Governing the Specific Aspects of Refugee Problems in Africa, which entered into force in 1974 (OAU 1969). Under this regional agreement, those who "owing to external aggression, occupation, foreign domination or events seriously disturbing the public order in either part or the whole of his country of origin or nationality,” are classified as refugees. (ibid). Many scholars have interpreted natural disasters, which could include those linked to climate change, as events that disturb the public order (Atapattu 2009; McCue 2003; Keane 2004), thereby making applicable this definition of refugees to encompass climate change or environmental migrants. Unlike the Cartagena Declaration on Refugees, this regional arrangement is a binding agreement (OAU 1969), which member states must adhere to, thereby arguably providing the most comprehensive and effective protection for environmental or climate displaced persons in the world today.

9. **Conclusion**

The global historical analysis of refugee migration and the number of individuals impacted by extreme environmental events indicate broad trends of increase in both phenomena. Theoretical frameworks and existing studies on the climate change-security-

migration nexus suggest that there is a fundamental link between these variables, demonstrating that environmental factors like climate change related events are already influencing the movement of people across international borders in search of more hospitable environments. Such a trend is evident on a global scale in the series of decadal GIS maps, which demonstrate increases in both refugee populations and the number of individuals impacted by environmental disasters. However, state level trends that correlate these two variables over time provide less evidence given the fact that the impact of environmental events on state level refugee migration occurs in punctuated spikes. This relationship is additionally influenced by a range of other variables including government type, wealth, and country geographical size. Nevertheless, there is a clear influential pathway that connect environmental disasters to migration suggesting that the existing migrant classification system may be overly reductionist and overlook the role that climate change and other factors have on migration, in this case of refugee populations.

There are many fundamental challenges in creating an international legal framework to govern and protect environmentally, specifically climate change, displaced persons including identifying those individuals, legally establishing environmental events as the primary causal mechanism that influenced their migration, and allocating responsibility for the protection of those populations. The UN is positioned to play a key role in the climate change related cross-border migration. Many of the UN's subsidiary bodies could be employed to help address this issue. However, given the current political and legal momentum and strength of the UNFCCC after the signing of the Paris Agreement in 2015 and its creation of a Task Force on Displacement, it is arguably best suited to coordinate international action to address climate change migration and displacement. I argue that creating a series of regional level

refugee or migration treaties governed and coordinated by the UNFCCC's best practice principals, which draw on existing guidelines from the Nansen Initiative and the Platform on Disaster Displacement, would provide the most efficient, effective, and culturally sensitive response to address the needs of current and future populations displaced by climate change.

10. Figures and Tables

Figure 1

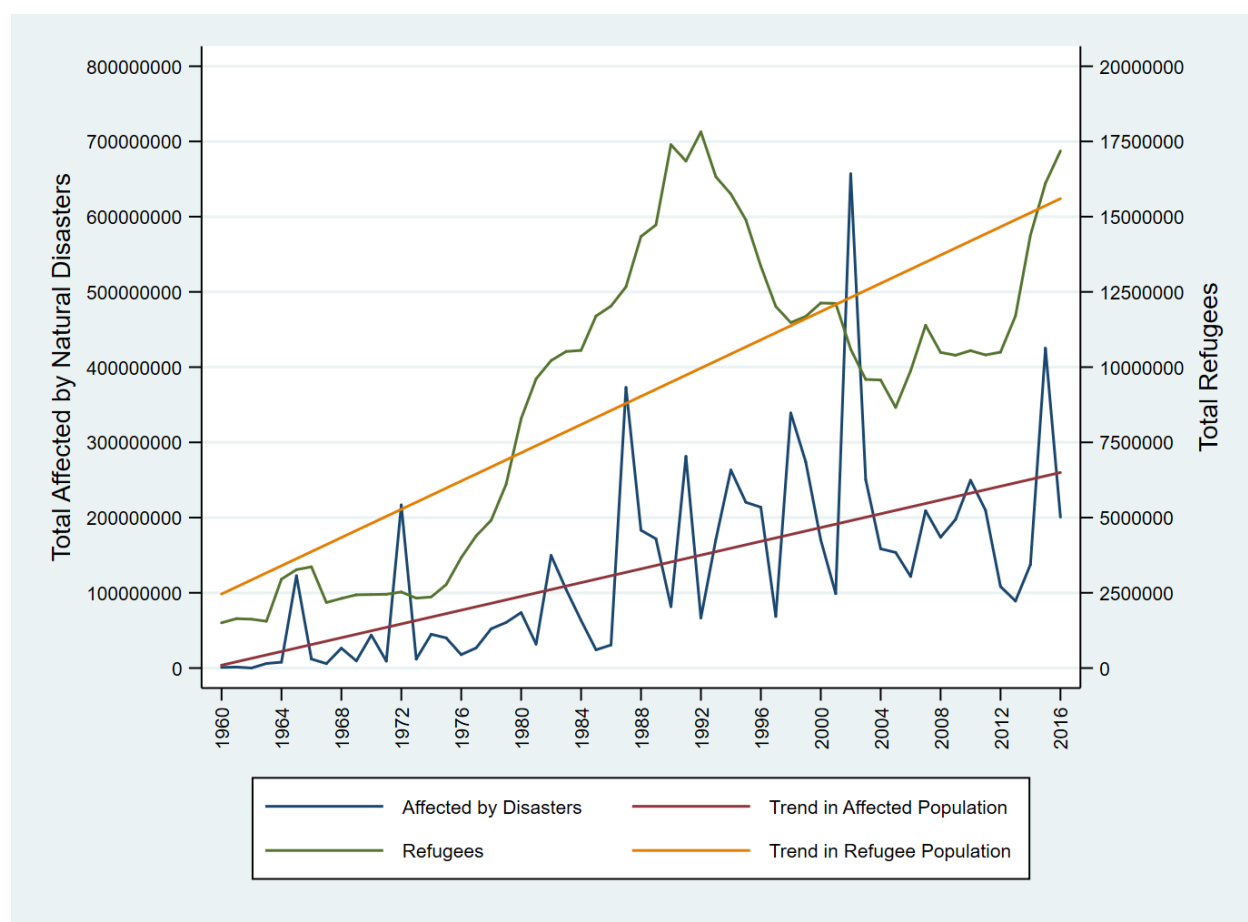


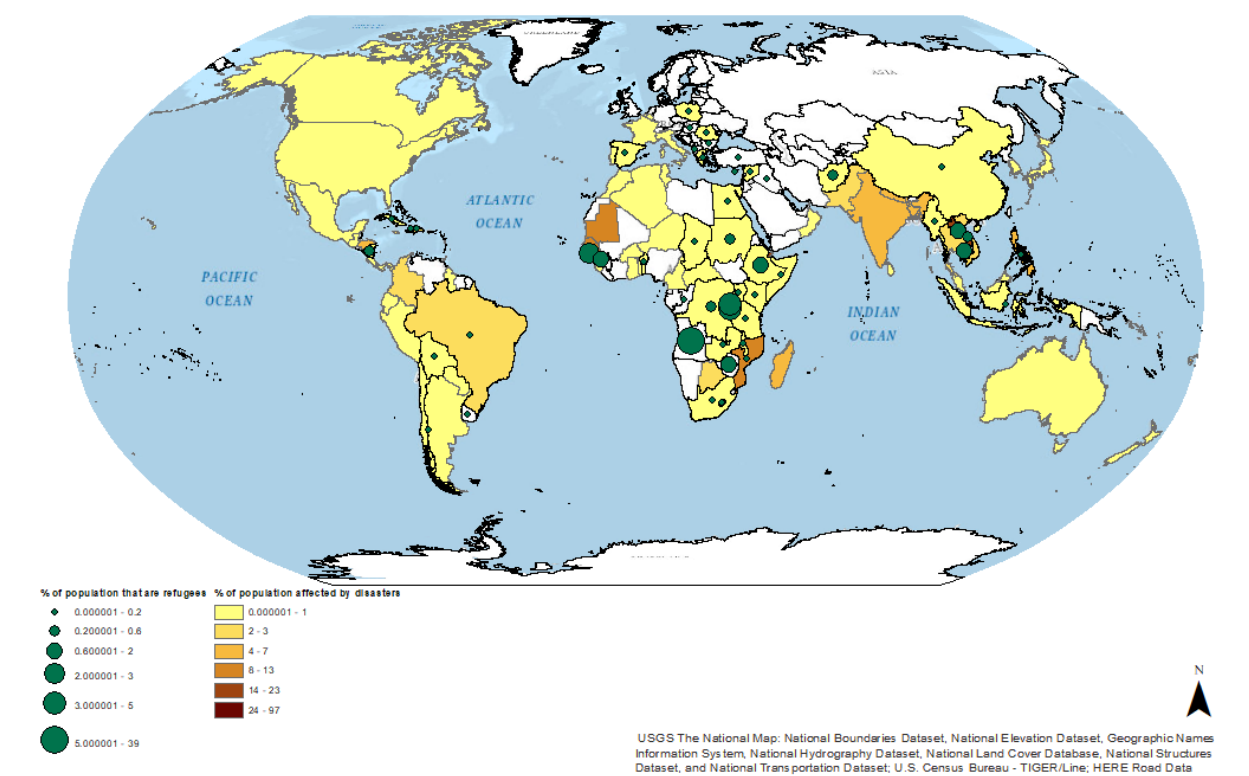
Figure 2

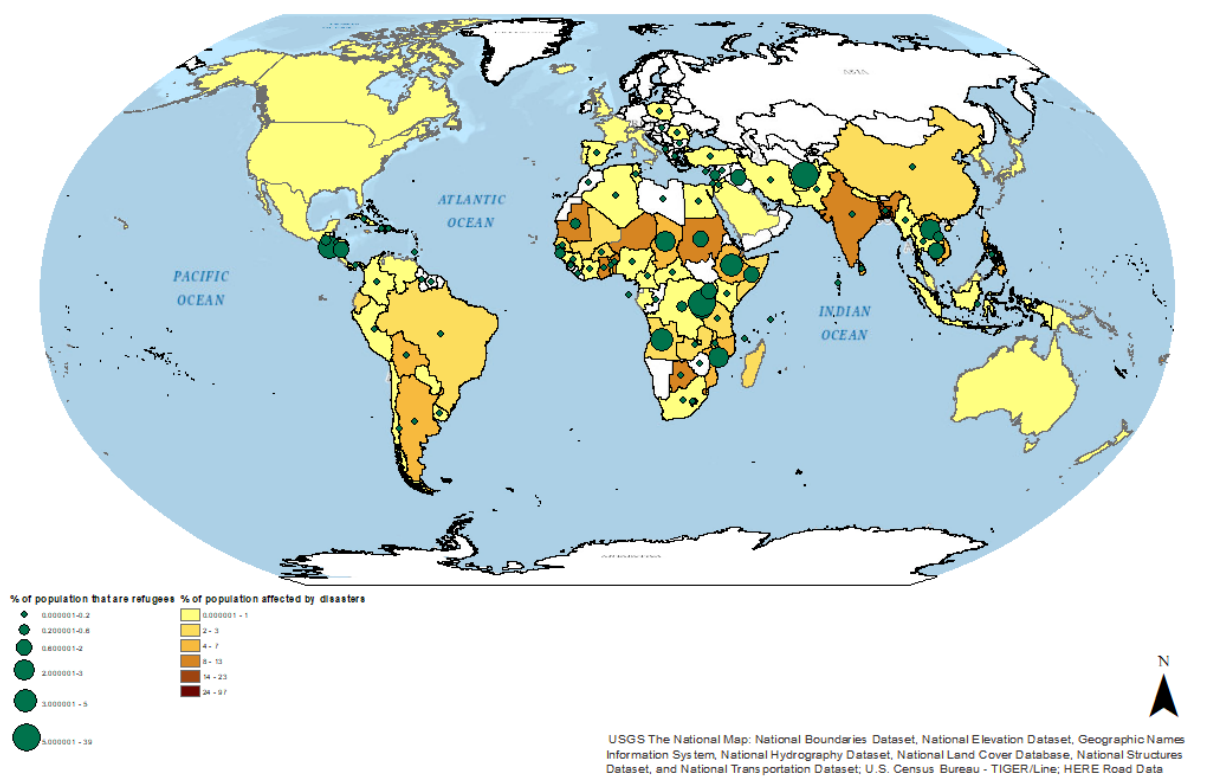
Figure 3

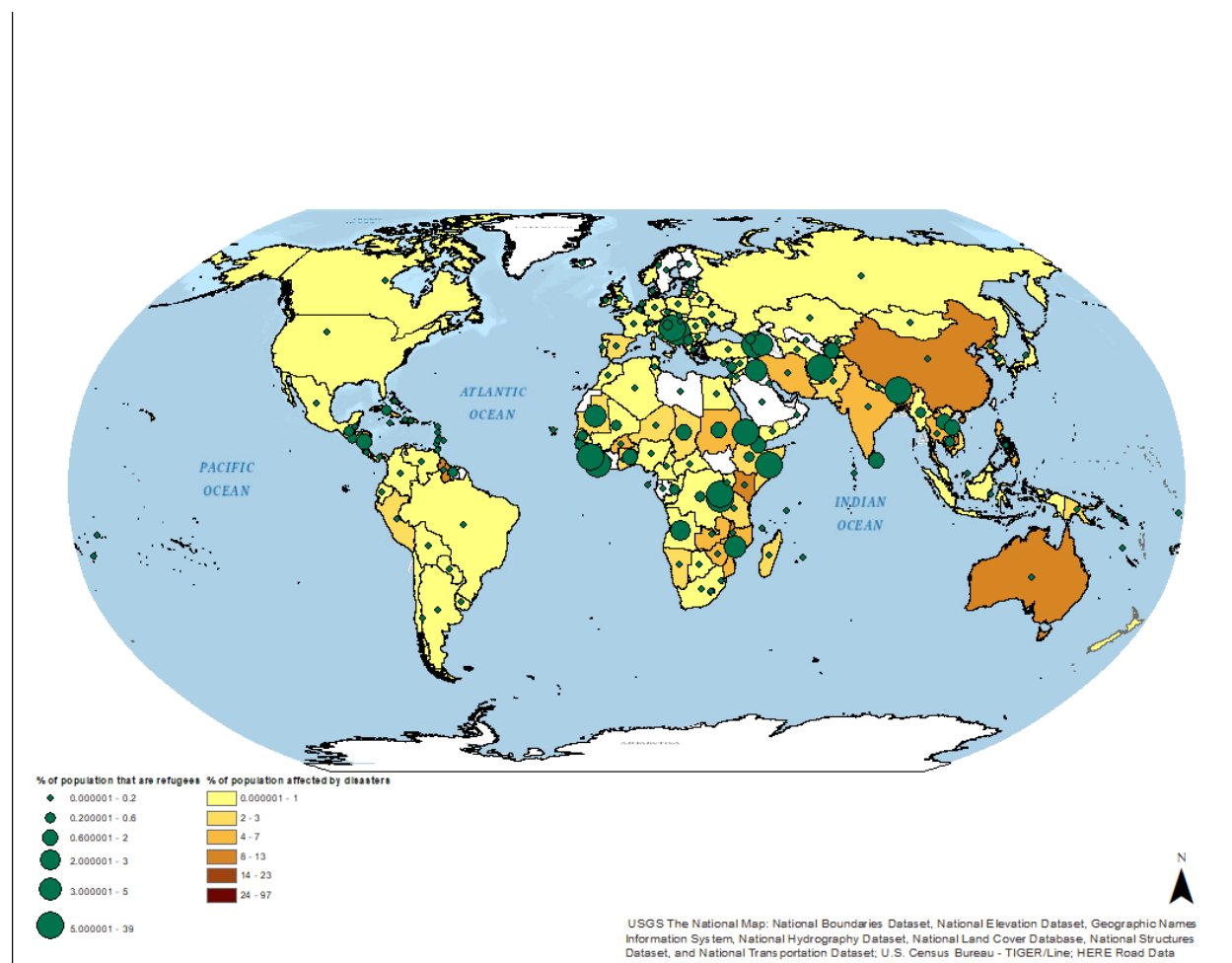
Figure 4

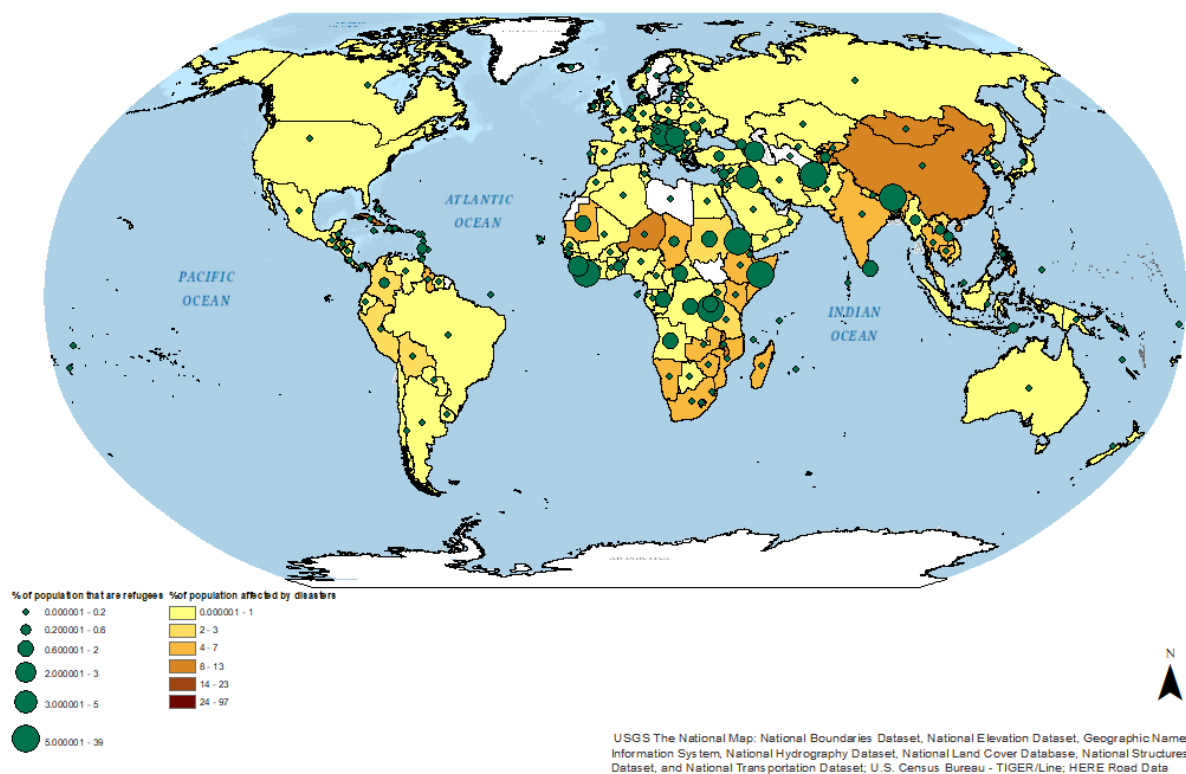
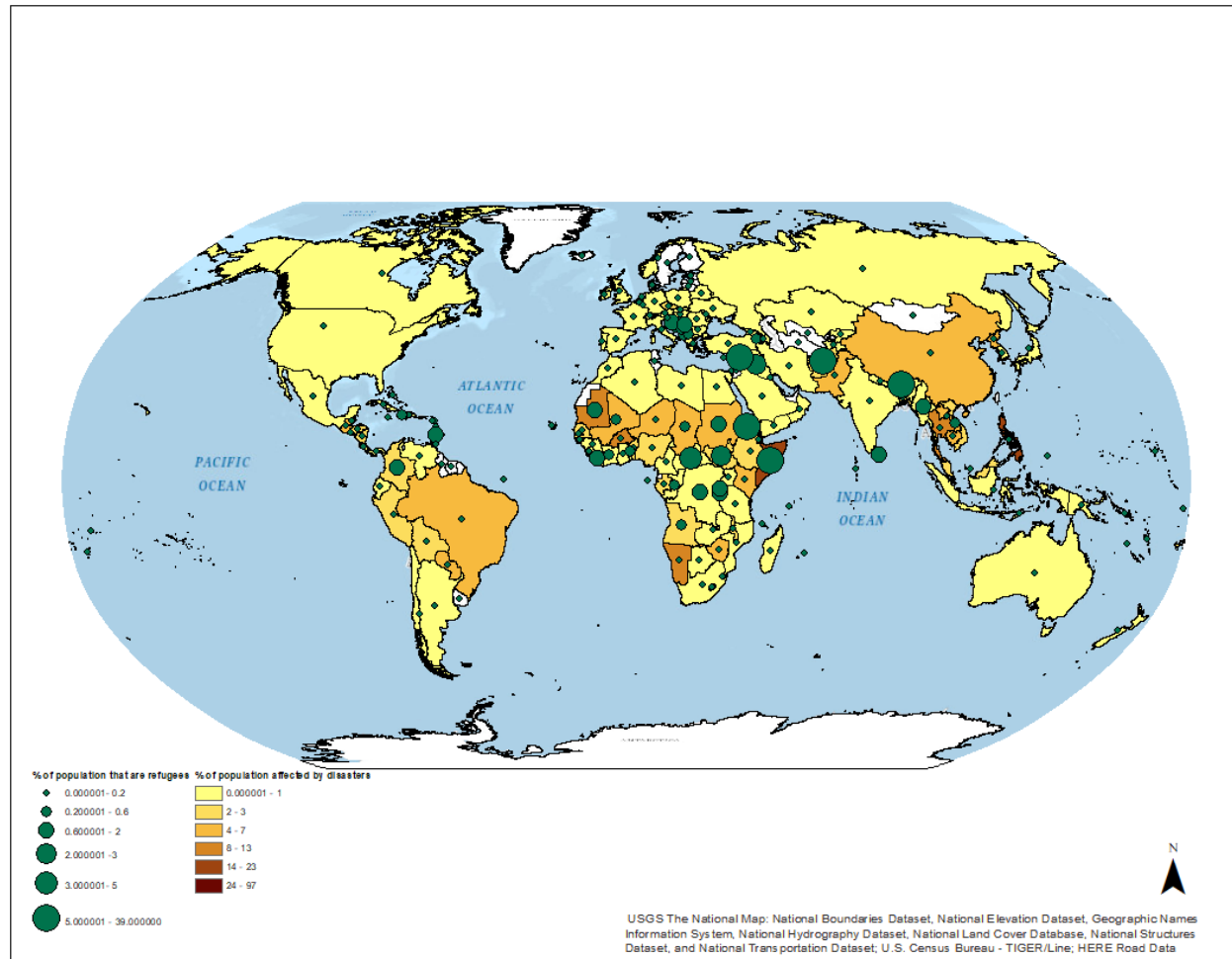
Figure 5

Figure 6

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