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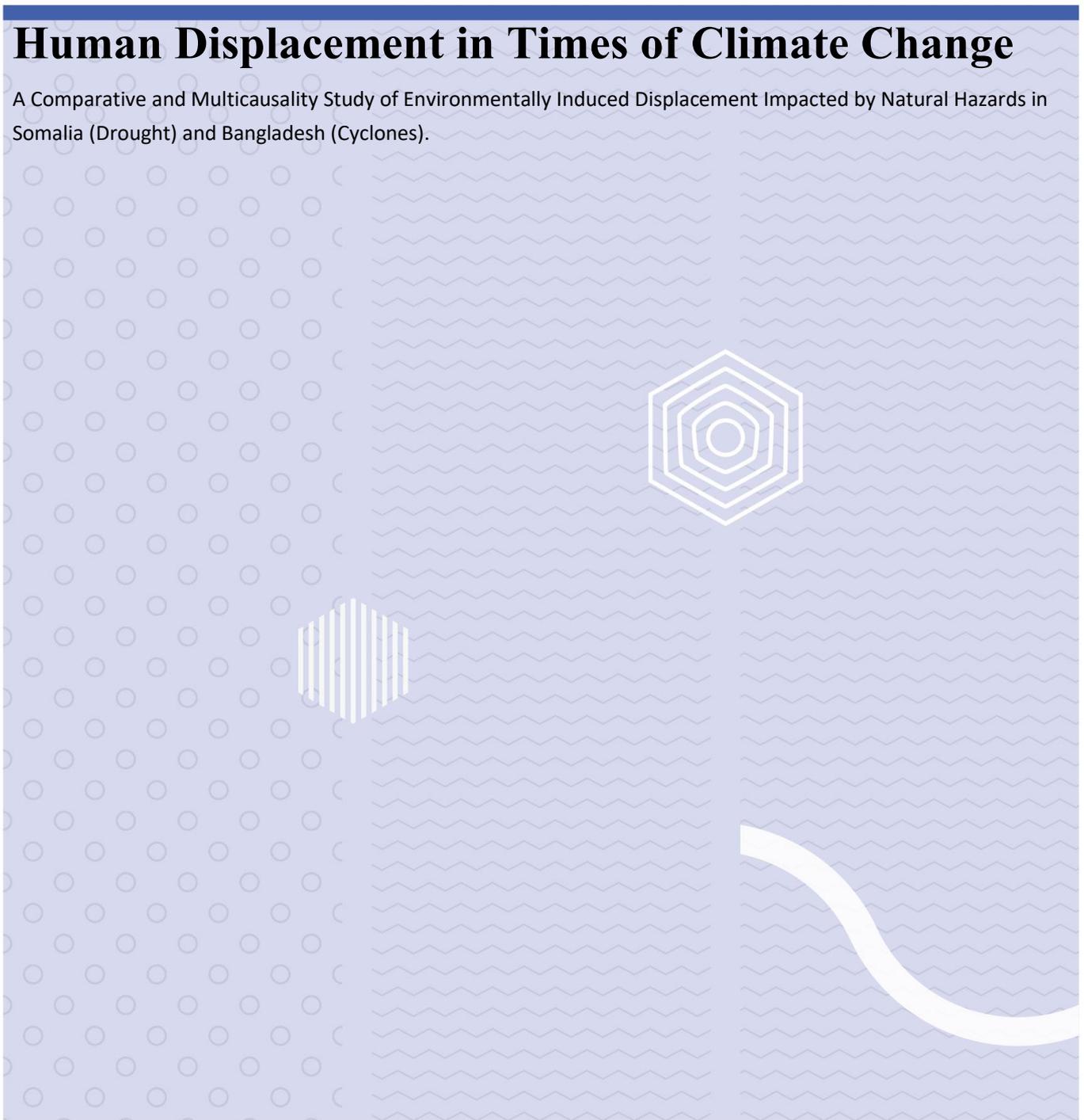
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# Human Displacement in Times of Climate Change

A Comparative and Multicausality Study of Environmentally Induced Displacement Impacted by Natural Hazards in Somalia (Drought) and Bangladesh (Cyclones).



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## Abstract

Today, more and more people are forced to flee from their homes as a result of global warming. Migration scholars, environmentalists and international institutions, have all expressed concern over the increasing social effects climate change has on human beings and their livelihood (Black, 2001; Myers, 2002; UNHCR, 2020). This thesis explores the interactions between forces and drivers of environmentally induced displacement in the context of resource-dependent livelihoods and vulnerability. The study draws on a “driver focused” framing of environmental conditions and migration (Black, 2011), and applies the concept of “vulnerability” (McLeman & Smit, 2006) and “threshold” (Hugo & Bardsley, 2010).

A secondary document analysis is adopted within a comparative case study design. Using the case studies of displaced Somali pastoralists during the 2010/2011 Drought and of the Bangladeshi fishermen and farmers in the aftermath of the Cyclones Sidr (2007) and Aila (2009), this study sheds light on different drivers and vulnerabilities that may come into play in the process of environmentally induced displacement. A re-analysis of previous studies, which this research is based upon, show the complexity of interrelated factors, both environmental and non-environmental, that lead to human displacement. Though climate change may influence these drivers directly and/or indirectly, this study argues that the phenomenon of environmentally induced displacement is not solely an environmental issue. Rather, it is highly interlinked with socio-economic and political causes.

Key words: Climate change, displacement, drivers of migration, vulnerability, adaptive capacity

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## List of Abbreviations

EDP	Environmentally induced Displaced People
FSNAU	Food Security and Nutrition Analysis Unit
IPCC	Intergovernmental Panel on Climate Change
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
IDP	Internally Displaced Persons
UNDRR	The United Nation Disaster Risk Reduction
UNHCR	United Nations High Commissioner for Refugees
UNFCCC	United Nations Framework Convention on Climate Change

## Chapter 1: Introduction

### 1.1 Setting the Scene

Wildfires in Australia, hurricanes in the United States, floods in China, cyclones in Asia – all indicate that climate change has become a rising global concern the last decades. It is often described as a long-term shift in regional or global climate patterns caused by greenhouse gas (GHG) emissions. A rise in the global temperature by 1.5 degrees Celsius results in a long-term environmental change (IPCC, 2018) and the impacts of it are predicted to affect water availability, ecosystem changes, and cause an increase in natural hazards. Such natural hazards can be divided into rapid- and slow-onset event. Firstly, climate change is foreseen to alter the intensity and severity of rapid onset-events, referring to disasters like flooding, landslides and storms (typhoons, hurricanes and cyclones). Secondly, temperature-rises are slowly increasing the frequency and magnitude of slow-onset hazards, such as sea level rise, glacial retreat, global temperature increase, land and forest degradation and droughts (IPCC, 2019).

The interconnections between global environmental change, forced migration and human rights violations are increasingly receiving global concern and have been recognized as emerging risks on the security of human beings (IPCC, 2014a). Along with the impacts of global warming becoming more severe, changes may be sudden and complex, meaning both the ecological systems and individuals face constraints on adaptation. On top of affecting the natural and managed systems (i.e., economic growth, agriculture, food production), climate change causes adverse social effects on human beings. In 1990, the Intergovernmental Panel on Climate Change (IPCC) alarmingly reported that coastal flooding, shoreline erosion, and agricultural disruption caused by environmental change continue to uproot communities and may be one of the “gravest effects of climate change” (Brown, 2008, p. 9; Myers, 1993, p. 1). The attempt to overcome dryer seasons, food insecurity and loss of livelihood, forces an increasingly large amount of people and even whole communities to migrate out of their places of origin, with decreased mobility as a direct consequence. People and societies who traditionally migrate as a coping mechanism to seasonal weather patterns now face a threshold to which they are being forced to move permanently as their homes become uninhabitable due to rapidly changing environmental and socio-economic conditions (Commission, 2012). However, environmentally induced displacement is not exclusively an

ecological issue, but is intertwined with socio-economic and political conditions. This type of movement is usually the result of a complex set of issues that tend to disproportionately affect vulnerable groups and, even in the clearest cases, the environmental factor can hardly be singled out. This multicausality has left room for much criticism, and challenges the well-known notion of the “Climate Refugee” in exchange for other terminologies, such as “Environmental Migrants” (Black et al., 2011)

In times of sudden and enormous growth in the global human population in late-twentieth century, along with and a growth in the global human population, the scale of international movement is increasing and on an unprecedented level (Hugo, 1996). Parallel to an accelerating pace of globalization processes, Adger et al., (2015) noted that the numbers of forced migrants have never been higher. The United Nations High Commissioner for Refugees (UNHCR) reported a total of 79.5 million global forced displacements caused by conflicts, human rights violations, violence or environmental hazards, at the end of 2019 (UNHCR, 2020). While the scientific basis of climate change is increasingly developing, the area involves many uncertainties and scholars are struggling to separate the role of climate change from other factors that causes displacement (IPCC, 2018). Nevertheless, research suggests casual linkages between human displacement and climate change, with the environmental (including climatic) factor being a threat multiplier (Foresight, 2011). In this sense, natural hazards instantly displace millions of people. The Internal Displacement Monitoring Centre (IDMC) reported 33.9 million new displacements in 2019 alone, of which 23.9 million were weather-related and triggered by 1,900 cases of disasters. Besides being the highest number of internally displaced persons (IDP) recorded since 2012, there are three times as many displacements caused by environmental disasters as by violence and conflict, with hydro-meteorological events as the largest trigger (IDMC, 2020). These figures are only expected to grow along with increased frequency of climatic hazards and consequently slowly erode the ability for people to provide a livelihood (IPCC, 2014b, p. 18). Even so, as this study attempts to illustrate, environmentally induced displacement is complex. Among the estimated 272 million international migrants (IOM, 2019b, p. 2), those who migrate as a direct and sole cause of environmental change currently remain few (McLeman, 2014, p. 1). Although most people who flee environmental hazards stay within national borders as IDPs (Brown, 2008; Zetter, 2008), crossing international borders may also be the case.

Environmentally induced displacement raises social and climate justice concerns, as well as posing risks on fundamental human rights. It is well recognized that effects of climate change

and natural hazards, in relation to both slow- and rapid onset events, can have generally negative effects on the realisation of human rights (Council, 2009, 2018). These are enshrined in several international human rights instruments, such as the International Covenant on Economic, Social and Cultural Rights (ICESC). For instance, a severe drought may threaten the right to adequate standard of health (Assembly, 1966b, article 12), which includes available water, food and sanitation, and the individual inherent right to life (Assembly, 1966a, article 6) due to a lack of basic facilities. By the same logic, environmentally induced displacement is likely to jeopardise enjoyment of fundamental basic needs rights. Of particular interest is the right to adequate housing, as an aspect of the right to adequate standard of living (Assembly, 1966b, article 11). The right involves living in security, available infrastructure and services, accessibility, affordability and cultural adequacy (Council, 2009 para 35). Because it protects basic needs, it is usually a prerequisite for the enjoyment of other human rights, such as the freedom of movement (Assembly, 1966a, article 12), cultural right (art. 15), the right to work (art. 6) and education (art. 13), to mention just a few. Thus, risks of suffering human rights harms by effects of climate change are linked to human mobility in two ways: 1.) climatic events contribute to vulnerability at the specific place, which can act as a driver of displacement, and 2.) there are certain impacts to the human rights of Environmentally induced Displaced People (EDP) that need to be addressed (Council, 2018, p. 4). Despite the clear link between environmentally induced displacement and human rights, EDPs do not reach the normative threshold for the entitlement to asylum in international law. As they are falling outside of the UN 1951 Convention Relating to the Status of Refugees (1951 Refugee Convention), they face a problematic legal gap in international law. It includes a lack of sufficient human rights protection at all stages in their journey when crossing international recognized borders, like access to entry and lack of protection from returning to harmful circumstances (Betts, 2013; McAdam, 2012). These shortcomings in the refugee regime involves more than a life of exclusion; they prompt pre-existing weaknesses and put those already in vulnerable situations at higher risk of being exposed to impacts of displacement.

Research on environmentally induced displacement is widely demonstrated and confirmed and becoming increasingly available with each passing year (Commission, 2012; Foresight, 2011; IPCC, 2014b; Mayer, 2015b). Previous analyses on environmentally induced displacement have, for instance, explored the relationship between socioeconomic vulnerability and displacement in the case of drought and cyclone damage, including

hurricane induced displacement in the developed U.S. Gulf Coast, through the lens of law and politics (Jayawardhan, 2017). Drought-displacement has also been investigated in the case of the “Dust Bowl” migration in Eastern Oklahoma, drawing on the concepts of vulnerability and adaptive capacity (McLeman & Smit, 2006). In the case of Bangladesh, Saha (2017) explored reasons why households migrated as a unit in the aftermath of Cyclone Aila. However, the data is still incomplete and there have been calls for more research in the field, including improved conceptual understanding (IOM, 2019b; Stapleton, Nadin, Watson, & Kellett, 2017). This thesis will depart from previous research with regard to the examination of several relevant drivers for the environmentally induced displacement and discuss them in relation to these particular environmental events within a broader framework of drivers of migration.

## 1.2 Research Questions and Purpose of Research

The context presented above provides the background from which the research questions and objective are formulated. This study aims to answer following research questions:

- How do environmental, socio-economic and political factors influence underlying vulnerabilities in the process of environmentally induced displacement affected by natural hazards in developing countries Somalia (drought) and Bangladesh (cyclones)?
- What are the impacts on the adaptive capacity and vulnerability among natural resource-dependent groups affected by environmentally induced displacement?

Through Blacks’ conceptual framework, this study will explore the interaction between drivers of displacement and how they jointly lead to environmentally induced displacement by triggering livelihood crisis in combination with underlying vulnerabilities. The research questions will address the broader relationship between environmental hazards and causes for displacement through a study of displaced Somali pastoralists during and following the 2010/11 Drought, and Bangladeshi fishermen and farmers in the aftermath of Cyclone Sidr (2007) and Cyclone Aila (2009). Thus, the study allows to explore the role of the climatic event and to provide an insight on circumstances that make people and communities flee their homes. Drawing on the concepts of vulnerability (McLeman & Smit, 2006) and different

thresholds (Graeme Hugo & Bardsley 2010) allows for reflection on vulnerable groups and reasons why some are more likely to be displaced by a changing environment than others. The relevance of this research to the field of human rights is its implementation of fundamental rights to enjoy basic need rights of EDP, as citizens not eligible for international protection as “refugees”. Along with a disproportionate number of communities increasingly facing threats posed by climate change, reflects the urgency and importance of the issue, and the need for further research on the topic.

### 1.3 Concepts and Terminologies

There are some terms that should be explained in advance, as they are important to and recur throughout the thesis. Previous attempts by other scholars to conceptualise complex terms like environmental-induced displacement and vulnerability will be reviewed in Chapter 2 within the literature review.

- **Climate Change**

The IPCC defines **climate change** as any identified changes in the state of the environment over an extended time of period (2014a, p. 39). In the United Nations Framework Convention on Climate Change (UNFCCC) from 1992, climate change is referred to as a change of climate that alters the composition of the global atmosphere and observed over comparable period of times (Art. 1). Contrary to the definition used in UNFCCC, the IPCC does not make distinctions between natural causes and human activity.

- **Natural hazard**

Terminologies in relation to climate risks varies and are being used for different purposes within different disciplines. Climate related risks tend to be created by a range of hazards. In the absence of a specific definition, a **hazard** may be described as the occurrence of a human-induced or natural event, or physical impact which may cause health impacts or loss of life, as well as loss and damage of infrastructure, property, livelihood, environmental resources and ecosystems (IPCC, 2014a, p. 5). The United Nation Disaster Risk Reduction (UNDRR) refer to the result of the impact of hazards on socio-economic systems as natural

disasters (2001, p. 2). The hazard with **natural** origin encompasses geophysical, biological and hydrometeorological events, such as tsunamis, earthquakes, cyclones and droughts, whilst those induced by human processes includes environmental degradation (Foresight, 2011, p. 15; UNDRR, 2015, p. 9). Although the divide between man-made and natural occurred hazard is difficult to draw along with climate change potentially playing a role, the hazards involve the same risks and consequences. In this study the terms of natural-, climatic- and environmental disasters, events and hazards will be used interchangeably. They overlap and refer to a climate-related event that is a source of risk and potential displacement.

- The Concept of **Environmentally Induced Displacement**

It is difficult to establish one unified definition of people fleeing environmental conditions of natural hazards, and neither international law nor academic scholars have provided one (for previous debates see Chapter 2.1.1). Broadly speaking, climate migration refers to the movement of people or communities who leave their place of usual residence predominantly due to progressive or sudden changes in the environment caused by climate change (IOM, 2019a, p. 31). Both 1.) voluntary and totally forced migration (displacement) are located within this continuum (Hugo, 1996, p. 107). Accordingly, the migration movement may be 2.) internal or internationally, 3.) temporary or permanent, and 4.) caused by slow- or rapid onset-events.

Environmental “**displacement**” is a form of forced migration which indicates dislocation and connotes a degree of lack of free will to move, and powerlessness against circumstances. This displacement may be due to violent conflict, land occupation for development projects, or extreme environmental events which threaten lives, homes and restrict access to income sources. While causes and conditions may differ, environmental displacement is commonly associated with being the option of last resort and is placed at the involuntary end of the continuum (Hugo, 1996). Displacement is usually temporary to which people return to their homes, but along with increase of natural hazards it is more likely to unfold as permanent migration (IPCC, 2014a, p. 778). These people may become refugees, though international law reserves the term for those who meet the criteria in the 1951 Refugee Convention suffering from persecution. While displacement always refer to a lack of choice, “**migration**”, on the other hand, could imply a degree of choice. People choose to migrate, traditionally to seek enhanced economic conditions when making a living becomes difficult.

Nevertheless, migration may also feature restrictedness of choice in the acknowledged forced-voluntary spectrum (Hugo, 1996). Such movement is often related to slow onset events, where the climate slowly erodes the ability to sustain a livelihood through loss of land, house, income and access to services and resources.

It is important to note that for the purpose of the study, the terms “**environmentally induced displacement**” and “**environmentally displaced people**” (EDP) will be used as primary terms despite not being globally accepted. That being said, the notion of “migration” is occasionally used as general umbrella term when referring to economic migrants, refugees and displaced people, in line with much of the wider research literature. This study considers displacement a type of forced migration, which may be both internal and international, and encompasses all causes of movement (both rapid- or slow-onset events). The crucial point is that the element of choice remains limited as environmental circumstances makes it impossible to maintain a livelihood in one’s native region.

- Migration “**Drivers**”

Migration “**drivers**” are factors which get migration going and are explained as forces leading to the inception of migration and the perpetuation of movement (Massey, Arango, Hugo, Kouaouci, & Pellegrino, 1999; Nicholas Van Hear, 2018). In this study the “drivers” refer to the five proposed factors proposed in the conceptual framework by Black et al., (2011).

- The Concept of **Adaptive Capacity** and **Vulnerability**

The effects of an environmental hazard on migration depends on more than simply the hazard itself; the impact is determined by adaptive capacity and different vulnerabilities. Adaptive capacity can be described as the function of social processes and outcomes, which entails a dynamic interplay for forces influenced by behaviour of groups or individuals, such as through human occupancy of an area where hazards can occur (McLeman & Smit, 2006, p. 35). Adaptation is the process and mechanism for a system (community, households, groups) to cope with and adjust to changing conditions (Galvin, 2009, p. 187). While people with sufficient adaptive capacity are likely to migrate temporarily, others may be unable to move back, lacking resources, and are sometimes called the “trapped population” (Foresight, 2011).

The converse to the concept of adaptation, is vulnerability. Like environmentally induced displacement, there is no universal definition of vulnerability because of the multidisciplinary research and various disciplines provide different definitions (Cutter, 1996; McLeman & Smit, 2006; Wisner, Blaikie, Cannon, & Ian, 2004). In general terms, vulnerability refers to how susceptible people, and the systems they depend on, are to suffer harm from climatic conditions and changes in the absence of adaptive capacity (Adger, 2006), deriving from an interplay between cultural, political, environmental and socioeconomic systems (IPCC, 2014a, p. 5). It leads to unequal level of power and enjoyment of rights. Social vulnerability is a dynamic and multi-dimensional condition created by the sociodemographic characteristics of a population, such as gender, age, ethnicity, religion, disability, sexuality, lack of services and unequal power systems. These factors determine the adaptation capacity and create underlying vulnerabilities (Wisner et al., 2004). Within the new framework in the report from 2014, the IPCC defines vulnerability as “the propensity or predisposition to be adversely affected” by climate change whereas it encircles other concepts, including sensitivity to harm and the lack of ability to adapt and cope (2014b, p. 5). With a human-based definition, the United Nations Office for Disaster Risk Reduction defines vulnerability as the condition determined by “physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards” (UNDRR). Instead of using the term as a “end-point” with a scientific framing where displacement is the outcome from a linear process (O'Brien, Eriksen, Nygaard, & Schjolden, 2007), these actors and other scholars interpret vulnerability as a process with a contextual “starting point” by considering various structures and processes within society (Hewitt, 2020; O'Brien et al., 2007; Wisner et al., 2004).

Because vulnerability refers to a low capacity for adaptation, forced migration occurs when this is overwhelmed by the impact. In this way, underlying vulnerability influences who is impacted by certain factors and the extent to which they experience harm. Negative impacts from climatic events can exacerbate existing inequalities (Council, 2018). Thus, a greater intensity and frequency of environmental hazards is more likely to cause displacement for certain populations with lower capacity to adapt. The adaptive capacity is not fixed and may change over time along with shifting socioeconomic circumstances or external processes (McLeman & Smit, 2006). The lower the capacity is, the more vulnerable people are. The local context determines who is affected and for how long (IPCC, 2014a, p. 799). This thesis draws on the conceptual model by McLeman and Smit (2006), which includes the elements

of exposure and adaptive capacity, and recognizes that vulnerability is context-specific that varies over time and from system to system and place to place. Thus, it adopts a contextual approach, in line with the approach taken by the IPCC and others, and will be examined at a community-based level, in contrast to a country-based analysis (Cutter, Boruff, & Shirley, 2003). The terms underlying vulnerability, susceptible, pre-existing-, and intervening factors all refer to conditions (environmental and non-environmental) that influence the adaptive capacity for particular groups. In this case, environmental, political and socio-economic factors influence the vulnerabilities for EDP to cope with on top climatic hazards. Hence, with lower adaptation capacity they are more likely to cross a threshold and forced to flee.

- **Threshold** of non-linear migration (**displacement**)

This study intends to further build upon the work of Professor Hugo (2010), and Professor McLeman (2018), who theorized on the concept of a “tipping point” or “**threshold**” in non-linear migration (displacement). This term refers to a point at which effects of environmental hazards are so frequent that existing adaptation options becomes inadequate or the socio-ecological system’s capacity to cope is breached (Bardsley & Hugo, 2010, p. 243). The concept reflects specific dimensions of human- and natural systems. While assessing vulnerability helps researcher to understand why some people are more exposed to natural hazard and environmental change than others, the study of thresholds importantly explores the patterns of displacement. The threshold is in this case crossed when natural resource-dependent communities no longer can adapt to environmental changes and cannot sustain their livelihood.

- Concept of **Multicausality**

The concept of multicausality refers to how population displacement is driven by more than one single and isolated factor. The multicausality refers to the numerous environmental and non-environmental conditions which all impacted the displacement-process, adaptive capacity and vulnerability.

## 1.4 Structure of Study

This study contains six main chapters. Chapter 1 has introduced the topic of this research with a contextual background on the current issues surrounding environmentally induced displacement, proposed research objective and questions and presentation of relevant concepts and terminologies. The beginning of Chapter 2 reviews some of the relevant areas of discussion in existing research. Then, theories of migration and displacement will be presented and utilized, building on the relevant concepts. These theories provide the theoretical framework that guides the research. The methodology the study applies is examined in Chapter 3. Chapter 4 provides a contextual background of the chosen case studies. Chapter 5 presents the findings of the research by examining the two specific case studies whereafter each case will be analysed and discussed. The last part in this analysis and discussion includes a brief comparison of the cases. The final chapter, Chapter 6, contains some concluding remarks on the research topic and provides answers to the research questions.

## Chapter 2: Theories of Migration

### 2.1 A Review of the Literature – Main Areas of Discussion

In the wake of increased awareness of climate change and its potential impact on human beings, climate change migration has received increased attention in the legal arena in the past decade and dedicated interest among politicians and scholars (Betts, 2013; Black, Kniveton, & Schmidt-Verkerk, 2011; McAdam, 2012; Myers, 2002; Piguet, Pecoud, & Guchteneire, 2011). Efforts have been made to try to address the link between climate change and migration by conceptualizing and contextualizing the topic through a political, legal, cultural, etc. lens. Discussions have particularly revolved around questions of “*who*,” “*how many*” and “*why*” people are migrating, and to what extent it is forced or voluntary (Hugo, 1996), including legal categorization (McAdam, 2011; Zetter, 2008). In this chapter the main areas of discussions concerning climate migration are examined, including relevant research on environmentally induced displacement in Bangladesh and Somalia. Finally, the theoretical framework that guides the research will be presented.

#### 2.1.1 Conceptualizing Climate Refugees

Previously, the terms “Environmental Refugee” and “Climate Refugee” were frequently used in media and politics (El-Hinnawi, 1985; Myers, 1993, 2002). Some scholars continue to use these terminologies with the argument that they have the potential to provide legal urgency and legitimate protection toward the affected people, due to the global moral connotations of protection associated with refugees (Biermann & Boas, 2010, p. 67). Even so, the term “Climate Refugee” has become devalued, remains legally vague and is met with resistance and caution from scholars (Black, 2001; Castles, 2003; Piguet et al., 2011). First and foremost, “refugee” is a legally protected term belonging to those who fulfil the criteria set up in the 1951 Refugee Convention. The Convention defines refugee as people who flee from a “*well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion*” (Assembly, 1951, article 1 A(2)). Since fleeing from environmental conditions remains uncovered by the definition, the term has been thought of as legally problematic (Kolmannskog, 2012). Moreover, “refugee” is argued

to be misleading and one-sided, as it indicates a direct link with environmental hazards and refers to an international border-crossing displacement (Castles, 2003, p. 15). By contrast, empirical research emphasises a wide spectrum of movement events, and illustrates the difficulties of separating the causes and singling out the individual “Climate Refugees,” - such as was found by the EU-funded research project *The Environmental Change and Forced Migration Scenarios Project* (EACH-FOR)(2012) and the UK Foresight Project on Migration and Global Environmental Change (Foresight, 2011). As a result, other terminologies are preferred today by scholars and actors, such as “Environmentally induced Migrants” (IOM, 2008), “Forced Climate Migrant” (Brown, 2008), “Involuntary Migration” (Oliver-Smith, 2011), and “Environmentally induced Population Movement” (Piguet et al., 2011), to mention some.

### 2.1.2 Rethinking Migration Flow

In light of globalization and increased mobility, another area of heated debate in this field has been in the estimations and assumptions of potential migration flow. On one side, the normative literature is dominated by environmentalists claiming a near future of mass-displacement, with climate change explained as the primary or mono-cause of movement (Myers, 1993; 2002). Such “alarmist”, or maximalist, approaches dominated the early policy debate on climate migration, used as a strategy to raise awareness on the potential impact from climate change, including human security. Holding an alternative view, some migration scholars, the “sceptics” or minimalists, challenge the idea that climate change will lead to mass displacement (Black, 2001; Castles, 2003; Piguet et al., 2011). Without denying the relevance of environmental conditions, they argue it is only one of many “push” factors by distinguishing between types and reasons of movement as a response to climate change (Black, 2001). The alarmist figures can also be criticized for not taking into account different levels of vulnerabilities to climatic change (Adger et al., 2015; Black, Arnell, Adger, Thomas, & Geddes, 2012; McLeman & Smit, 2006). Therefore, the focus should strive around understanding the links between environmental and non-environmental factors in exposed societies (Castles, 2002). In other words, underlying vulnerability of people. Even though these opposing positions remain relevant within the present body of research, particularly in the areas of law and policy, the debate has largely faded, and there is an increasingly shared

recognition that human mobility related to environmental change is a complex phenomenon caused by several different drivers.

International research programmes, such as Foresight (2011) and EACH-FOR (2012) have also contributed to the expansion of scientific evidence on climate migration. Scientific reports from IPCC's Fifth Assessment Reports (2014a) have helped to analyse environmentally induced displacement framed around issues such as human security (Adger et al., 2014), livelihood and poverty (Olsson, Opondo, Tschakert, Agrawal, & Eriksen, 2014), and as an emergent risk (Oppenheimer et al., 2014). Along with the growing causal links discovered between climate change and displacement, scholars view migration as a potential adaptation strategy, one that may enhance the capacity of communities to adapt to changes (McLeman & Smit, 2006; Webber & Barnett, 2010). Therefore, an emerging literature are now focused on investigating forms of immobility, the role of thresholds (Adger et al., 2015; Borderon, 2019; McLeman, 2018), mitigation, and resilience building (Adger et al., 2014; McAdam, 2011). All of which are in service of a call for action to better protect EDPs. Bringing up this rights narrative, scholars have attempt to fill the legal protection gap with different proposals. Whilst some call to expand the refugee-definition in ad hoc protocols, specifically tailored to the needs of the EDPs (Docherty and Giannini, 2009; Biermann and Boas, 2010;), others are critical to a stand-alone treaty based on the assumption of being non-effective due to lack of political will and difficulties to isolate climate change from other factors (McAdam, 2011, 2012). Instead, a soft law framework is suggested (Kolmannskog, 2008; Zetter, 2008). However, some also reject the labelling and call to grant protection to all crisis migrants (S. F. Martin, Weerasinghe, & Taylor, 2014), survival migrants (Betts, 2013) or to the most vulnerable individuals (Mayer, 2015a), which may not necessarily mean EDPs in particular.

### 2.1.3 Previous Research Dealing with Environmental-Induced Displacement

Earlier studies on environmentally induced displacement have mainly focused on investigating each natural hazard separately within a context-specific approach. These studies have found that movement of migrants varies within different countries, among groups and in relation to different hazards, such as temperature increase (Mueller, Gray, & Kosec, 2014),

storm surges (Bullard & Wright, 2009) and droughts (Gray and Mueller, 2012; Warner, 2010).

Research have also suggested that in response to slow-onset events- like droughts, communities seek to adapt in situ (at their original place), whereas following rapid-onset events internal displacement is usually the outcome (Koubi, Spilker, Schaffer, & Böhmelt, 2016). Other studies, however, found that environmental stress coupled with drought can lead to long-term displacement (Mueller et al., 2014). For example, Gray and Mueller (2012) suggested in a series of studies across the Global South that drought can both decrease and increase population mobility. Also, in examining the link between environmental factors and migration, he found that in Uganda migration was significantly higher in places with better soil quality, but in Kenya it was lower. Hence, diminished soil quality pushed people to diversify income (Gray, 2011). Additionally, whilst national and local migration flows increased in Ecuador along with decreasing agricultural harvest, cross-border migration remained the same (Gray, 2009). Movement in response to slow-onset events is usually temporary labour migration, and a strategy to diversification (McLeman & Gemenne, 2018). Another study from the Horn of Africa explored the interlinked impacts of severe drought, finding that the interplay of civil order-breakdown, excessive state oppression and political conditions together reduces the ability of populations to adapt to climate change and its effects (Warner, Afifi, Govil, & Sakdapolrak, 2012). Along similar lines, McLeman and Smit (2006) investigated long-term migration as a response to drought, finding that the inability to adapt was caused by various vulnerability-factors, such as the nature of land tenure, occurrence of crop failure, and extent of social connection (p. 46). In this regard, it is widely recognized that poor or marginalized populations are disproportionately affected by the impact of slow-onset climate change, where their level of vulnerability, socioeconomic class, ethnicity and race are relevant factors (IPCC, 2014a, p. 1002; Tacoli, 2009; Wisner et al., 2004). In pastoralist areas, for instance, economic and political marginalization coupled with inadequate development policies constrain mobility, and limitations in income diversification and low access to basic services contribute to changes in traditional migration routes.

Other studies have found that event-driven displacement, such as in the aftermath of a cyclone, is usually short term and temporary as people tend to return home where this is possible (Foresight, 2011, p. 48). Likewise, in these situations, hazards become disasters specifically when they affect vulnerable populations. In 2005, for instance, Hurricane Katrina struck New Orleans and disproportionately affected poor Afro-American communities

(Bullard & Wright, 2009). Relevant was lack of social support and the conditions and locations of their houses. Such reflects the aspect that not everyone is even able to migrate due to socio-political factors. Similarly, a study on the impact of heavy monsoon rains in Bangladesh found that the displacement rate of 3000 migrants a day was due to the lack of effective aid relief (IRIN, 2007). In contrast, displacements of Bangladeshi were minimal in the aftermath of a 2004 tornado as food markets were supported and aid properly distributed (Paul, 2005). Likewise, mass migration never occurred in the aftermath of the 2004 Indian Ocean tsunami partly due to diaspora groups' substantial mobilizing and a swift humanitarian response (Naik, Stigter, & Laczko, 2007). To what extent coping strategies by the government are executed effectively impacts displacement rates as well. Illustrative is the eruption of Mount Pinatubo in 1991, where many of the Filipinos displaced remained displaced after several years; on the contrary, among the 300,000 people displaced by an earthquake in 1995 in Japan, all but 50,000 had returned home within a couple of months (Tacoli, 2009).

Despite rich empirical evidence, the relationship between human displacement and environmental events is still not always clear or straightforward. To sum up the literature on this topic, research suggests that displacement patterns have the potential to be influenced by a changing climate condition. In these cases, the movements tend to be internal, either temporary or long-term migration or through sudden displacement. Nevertheless, research also indicates that environmental degradation and effects of climate change do not necessarily lead to displacement.

Following the mass-displacement during the 2010/11 drought in Somalia, there have been several attempts to explain the famine (Hillbruner & Moloney, 2012; Maxwell & Fitzpatrick, 2012; Maxwell et al., 2014), mainly based on technical information from the Food Security and Nutrition Analysis Unit (FSNAU) in Somalia. While some scholars focus solely on the environmental conditions and lack of rainfall through meteorological analysis (Nicholson, 2014) others have, with a minimalist view, critically discussed the environmental factor being the sole cause for mass-displacement (Lindley, 2014; Maxwell & Fitzpatrick, 2012). With the aim of unfolding the causes for the mass-displacement, scholars have examined key forces that mediated the situation and identified underlying risk factors for pastoralists (Ginnetti & Franck, 2014; Lindley, 2013; Majid & McDowell, 2012). By critically reflecting upon the political context, emphasises have been put on the role of counter-terrorism legislation (Bradbury & Kleinman, 2010; Pantuliano, Mackintosh, Elhawary, & Metcalfe, 2011), failure

of humanitarian aid (Menkhaus, 2012; Seal & Bailey, 2013; Slim, 2012), and the effectiveness of the early warning system (Hillbruner & Moloney, 2012; Haan, Devereux, & Maxwell, 2012). Other aspects of the displacement studies have been clan structures and their social capital (Maxwell, Majid, Adan, Abdirahman, & Kim, 2015), as well as the harsh safety conditions EDPs were facing (Achour & Lacan, 2012; Lindley, 2013). Such may be from the perspectives of the humanitarians (Haan et al., 2012) or the ones most affected by the crisis themselves (Maxwell et al., 2015).

In the aftermath of Cyclones Sidr and Cyclone Aila in Bangladesh, scholars investigated both the environmental impact on infrastructure (Hossain, Islam, Sakai, & Ishida, 2008), as well as coping strategies and non-compliance with evacuation orders for communities (Paul & Routray, 2011; Saha & James, 2017). A vast amount of the literature has focused on pre-existing vulnerability factors among rural livelihoods (Hossain, Minar, & Shamsuddin, 2013; Saha, 2015; Shameem, Momtaz, & Rauscher, 2014). This literature looked at the political context to examine the effectiveness of migration measures and current governance (Hossain & Paul, 2018; Nadiruzzaman & Paul, 2013; Naser, Swapan, Ahsan, Afroz, & Ahmed, 2019), vulnerability through an economic lens (Kartiki, 2011), and by highlighting the relevance of socio-economic vulnerability and access to public services (Islam & Hasan, 2016; Shameem et al., 2014).

This research will draw on the analyses of the majority of these studies. They will be discussed more in detail in the examination of this thesis's case studies. The main themes of the literature examined above are relevant in terms of understanding the emerging focuses of the topic and its place within the larger migration theories. The following section therefore seeks to outline the key theories of human movement that drive this thesis, as well a more detailed description of Black's conceptual framework on migration drivers, which forms the basis of my own theory.

## 2.2 Theories of Migration

*Voluntary migration, forced uprooting, globalization, multicausality, new forces for migration and vulnerabilities* – all of these are relevant terms that provide further insight into environmentally induced displacement in present times. Environmental factors were

recognized early on as a “push” factor for mobility (Lee, 1966). However, until recently it has been a marginal area in migration research. The widespread ignorance of environmental conditions is partly explained by the rise of the economic paradigm in migration theory during the 20<sup>th</sup> century which emphasised labour migration and social mobility. In times of urbanization and globalization, the world has become more mobile overall, and as such the nature of displacement has changed. Along with the traditional causes for movement becoming more blurred and increasingly mixed reasons for fleeing, the undisputed links between the political and environmental theories is illustrative of the ways people are crossing borders based on a range of different factors.

Through Foresight’ and Black’s conceptual lens of a broader framework within the traditional drivers of migration this study is better able to discuss the proposed research questions, and consequently it will be used as the core of the theoretical framework. As a guiding concept, it offers a wider understanding of present human movement by including new drivers for migration, such as climate change. The effects of climate change, like more frequent droughts, for instance, are an increasingly dominant issue which support Black’s framework. Similarly, this study adopts the work of Hugo and Bardsley (2010), who suggest that displacement is explained when a particular threshold is reached. Thus, livelihoods are no longer feasible due to the function of vulnerabilities (McLeman & Smit, 2006).

### 2.2.1 Theories of Migration Behaviour

With a fairly high level of agency, people have for decades chosen to leave their place of origin to seek better material conditions. While several schools suggest different theories of migration, providing a more complex picture, there is still no unified theory explaining this multifaceted occurrence (Piguet, 2018). Among the theories who take the economically motivated approach is the well-known and generalized “push-pull” model developed by Lee (1966). The theory holds that some identified factors (demographic, environmental, economic) in the country-of-origin act to “push” people to migrate, meanwhile other factors attract (“pull”) the migrants to a destination country. The movement is statistically likely to be from low-income to high-income areas, based on the expectations of better employment and higher wages. The limitation of this static theory is that it tends to portray migrants as passive people with a lack of agency, as well as providing little clarity on the role of other

factors. Finally, the model fails to account for changing circumstances or motives as it presents migration as one particular action instead of a process (Haas, 2011, p. 8). Another explanation for why people migrate that has been proposed at the micro-level is the “new economics of labour migration” (NELM), which in this researcher’s opinion made a conceptual improvement on the existing theories. It suggests that the decision to migrate is made by the household unit, rather than the individual alone, with the purpose of overcoming market failure (Stark 1991). Parallel to a change in the times, with new understandings and knowledge emerging, some models are not as well suited for today’s understanding of migration as they once were. Push-pull and neo-classical theories, for instance, are criticised for being a historical- and failing to consider structural forces on the macro-level, like power inequality, policies, labour market and states (Haas, 2011, p. 8). Consequently, alongside contemporary theories of globalization and a change of the length and scope of migration (going from temporary [seasonal and circular] to permanent), there has been a shift in theories where the connections between different types of flows are now recognized (economic, cultural and social). It is noted by McDowell and De Haan (1997) that migration is not just about the movement but also about linkages between place of origin and place of destination and highly determined by familiar and social structures. For example, movement may be conceptualized as transnational when the migrant stays connected to their network at the place of origin, instead of a “once-and-for-all movement” (Piguet, 2018). In this context, for more recent theories and at the meso-level, the network approach has been highlighted as essential for migration (Boyd 1989). This approach includes aspects of cultural disposition, social network and chains, and is rooted in older concepts such as social capital. Social capital refers to collected resources tied to membership in particular groups, and a common security they can be relied on due to the obligations of those social relationships (Bourdieu, 1986). According to McDowell and De Haan (1997), the connection between sending and receiving localities and communities may be long lasting and strong. Network-based theories hold that networks of friends and family impact a migrant’s choice of destination and the ability to integrate as it may provide support, conflict, facilitation, and information. However, while they contribute to a more nuanced understanding of group-dynamics, the aspects of structural forces, like poverty, as a shaping factor is still limited in these theories (Van Hear, Bakewell, & Long, 2017).

A broad reading of the theories above suggests a common basis for migration; the decision to migrate– or not – is taken with a level of agency and shaped by cultural, social and economic

processes. Yet not everyone cross borders of their own free will, and some feel they are obliged to migrate. This is the case for EDPs and refugees. In this way, the cumulative process of migration has allowed other theories to come into play.

### 2.2.2 Forced Migration

Contrary to theories of voluntary migration, other theories suggest that the options people have to freely migrate are frequently constrained by societal structures. Such forced movements tend to occur in context of war, danger and violence, and “unruly” refugee-flows such as regime-changing, arbitrary state decisions, or other unpredictable events (Zolberg, 1983). The low level of control such migrants have over their movement reflects a high degree of vulnerability. As a response to being exposed to conditions of instability and insecurity, people are increasingly fleeing danger, seeking safe haven in other countries (Betts, 2009). Being at the margin of forced migration studies. There are limited of theories of reasons why people are forced to flee their place of origin. Yet, some attempts have been done with a few theories being developed (Kunz, 1973; Richmond, 1993).

On a macro-scale, Zolberg (1983) introduced a theory which sought to explain the creation of a nation state for victims of forced migration, seeing it as push factor. The twofold process, creation of a new state followed by the creation of a nation-state, includes some elements of violence and exclusion as migrants attempt to create a national identity. The flights share the same feature of being caused by historical event. On a micro-level scale, Hirschman’s “exit, voice and loyalty” (1970) concerns the individual refugee themselves and their agency. It holds that the flight from a native land in some circumstances is made by choice. As an attempt to explain the increase in refugee-flows at the end of 20<sup>th</sup> century, Castles (2003) proposed a theory concerning the political economy within the context of the sociology of forced migration and global social transformation. He argues that the global changes we’ve experienced have undermined the traditional mechanisms for regulation, economic inequalities have increased, and human rights abuses. All of which lead to different types of migration, forced included (Piguet, 2018). In keeping with this idea, some authors have claimed that the option to make migration-decision is restricted by dimensions of the global capitalist economy which also creates specific migration-patterns for mobile laborers (Massey et al., 1993). McDowell and De Haan (1997) noted that forced migration theories

that concerns structural forces alone (poverty, conflict, shortage of land, unemployment-in-origin/employment-in-destination) provide a useful starting point for migration-research but are inadequate to explain patterns and dynamics of migration. Therefore, Piguet (2018) argued that refugee flows and international flight should all be understood in the context of all the above-mentioned theories.

### 2.2.3 Towards a Blurry Line

It is in this context that environmental explanations increasingly were supported by academics and activists, and “Climate Refugee” became a pressing issue (Myers, 1993). By portraying these migrants as forced to leave their home countries for environmental reasons, the issue was brought to the policy agenda, fostering an alarmist attitude rather than an attention to empirical evidence. Studies on these global changes further recognize the links between traditional theories of migration behaviour on one hand and forced migration on the other. There has been a change in the broader nature of displacement as these new factors have come into play alongside ongoing conflict and war. An emerging phenomenon of people fleeing environmental and developmental conditions in their native regions causes difficulties in the effort to categorize migrants. The separation of voluntary movement from involuntary migration as “pure” and homogenous categories have become difficult along with new motivations, leaving the distinction to be of little constructive or clear use. Consequently, the conventional forced versus voluntary migration dichotomy, or structure versus agency (Bakewell, 2010) dualism in migration has been challenged, and increasingly referred to as “mixed migration” (Carling & Talleraas, 2016). The mixed migration movement involves all types of migrants, who travel together and are faced with the same challenges, despite different motives. Hence, it reflects the issue of labelling EDPs as “Climate Refugees,” as well as the importance of linking forced migration research within a broader framework for change and social structures (Castles, 2003).

Parallel to the need for a broader framework of drivers of migration, comes the limitations of the international migration regime. After World War II, the 1951 Convention on the Status of Refugee and the 1967 protocol of the UNHCR, which became the cornerstone of a global effort to support refugees, set attention to those fleeing from conflict and political pressure. As the characteristics of migration flows have unquestionably changed since 1950’s and 60’s

in line with global social transformation, new concerns invite us to question the regime's status quo. With a comprehensive approach, Betts (2017) argues that the original focus of the 1951 Convention, to provide refugees access to safe haven from classical persecution, do not reflect the current reality of displacement. Factors that do not fit into the original driver categories, such as food insecurity, generalized violence and environmental conditions, are increasingly driving people out of their native regions. Despite having different motives, these migrants are all fleeing with a simple common aim; to seek safe haven from danger (Betts, 2013). Because the current global regime lacks the framework to capture these diverse needs for protection, instead espousing a narrow and specific cause, the social suffering imposed upon refugees is currently claimed to be legally sanctioned (Skillington, 2015, p. 290).

### 2.3 Drivers of Migration Within a Broader Framework

In the midst of the alarming projections of future refugee flows and with increased recognition of these new sources of displacement, scholars have been urged to develop new and more nuanced understandings of forced migration within a broader framework (Black et al., 2011; Castles, 2003; Hugo, 1996; McLeman, 2014; Van Hear et al., 2017). Their approach sought to incorporate the multidimensional nature of movement and overcome the limited dualism by building in established patterns of behaviour, structural constraints, autonomy, recursiveness and cultural underpinning, such as land attachment and uniqueness (McDowell & De Haan, 1997). McDowell and De Haan (1997) suggested that migration as a coping strategy is more common than first presumed with the earlier theories. It reflects a shift of discourse since the 2000s. Instead of perceiving migration as an exception to normal patterns in society by highlighting the forced nature of climate migration and security threats that comes with it, the shifting approach emphasizes migration as a possible adaptation mechanism. Hence, it recognizes migration as a livelihood option of households in rural livelihoods, both as a long term- and short-term mechanism to adapt to environmental conditions. In risky environments, seasonal migration is a well-known coping mechanism to diversify income as well as reduce risk with less people to feed, for instance during dry seasons (Foresight, 2011; McDowell & De Haan, 1997; McLeman & Smit, 2006).

In line with the new approach, migration scholar Richard Black (2011) introduced a now globally accepted conceptual framework for climate migration as a part of the Foresight project (2011), drawing on previously recognized predisposing conditions (Richmond, 1993). The Foresight report on migration and global environmental change was a study conducted by the UK government with the aim to consider how migration drivers may affect patterns and volume of migration. The objective was to help create policies on a national and international level that are more resilient to the future. While its conceptual approach holds that climate change does influence migration, the aim was to abandon the narrow view of the environmentalists that climate change influence migration in isolation – a monocausal “push” factor – in favour of a broader understanding. In line with the minimalistic approach, Black’s framework holds that migration is driven by five recognised drivers: political, economic, social, cultural and environmental. The environmental factor, which includes climate change, influence the displacement-process both directly and indirectly through these other drivers. Due to the fact that Foresight (2011) builds upon the same conceptual model as Black et al. (2010), this study refers to both as a theoretical framework. One aspect of Black’s framework is that it disputes the argument that migration is a failure to adapt in situ, rather demonstrating how migration is often an effective adaptation mechanism to climate risks, referring to the concept of migration as adaptation. The analysis further implies that migration movements not only depend on the existence of these drivers, but also on the household and personal characteristics of the migrants as they create or deprive coping capacity, referring to people’s vulnerabilities. A limitation with the framework is, however, ways in which it fails to consider key dimensions of migration. Firstly, it does not include social well-being or the agency of migrants during the whole displacement-process (prior, in transit and at host destination). Secondly, it ignores the level of agency that are afforded to “would-be migrants” during the process (Parrish et al., 2020, p. 12). Finally, it fails to provide a fine line between voluntary and forced migration. Rather, it uses migration as an umbrella term that includes both displacement and voluntary migration.

Additionally, this theory claims that climate change itself does not displace people, and by including other compulsions, its role has been labelled as an additional “stressor” (Adger et al., 2015) to which a “tipping point” or “threshold” is reached (Hugo & Bardsley, 2010). Along the same lines, several studies recognize the ways in which social and economic conditions influence environmentally induced displacement, in addition to the climatic event itself (McLeman & Smit, 2006; Raleigh, 2011; Tacoli, 2011). Other studies later introduced

more nuanced conceptual frameworks than the Foresight, such as the “push-pull-plus” model which distinguishes between predisposing and proximate drivers to understand how a combination of these shape the nature of movement (Nicholas Van Hear, 2018). This study, however, is concerned with ways in which the five proposed forces are all acting together, both in isolation as well as influenced by climate change. It was found to be a suitable theoretical framework in this study as it explains how the environmental events impacts groups’ livelihoods and, as a result, prompt displacement.

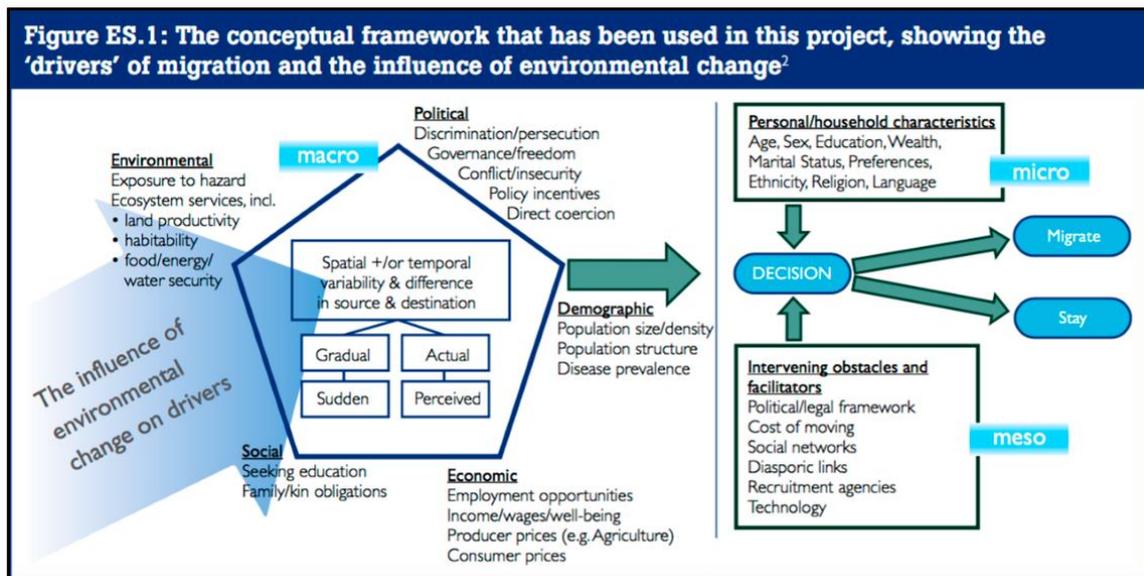


Figure 1: The conceptual framework for the “drivers of migration” (Black et al., 2011; Foresight, 2011)

The first driver, the *political*, is often viewed as the bridge between human security (referring to entitled rights), and the responsibility the governance of the affected state has toward its citizens. This driver covers discrimination, security and political instability within the country, including the quality of protection citizens will enjoy. Links between violent conflict and environmental displacement remain unproven and contested. Conflict does, however, create conditions which make people more exposed to natural hazards (Adger et al., 2014; Raleigh, 2011). Conversely; a lack of rainfall can put more pressure on available resources, which may increase conflict between pastoralists and farming communities (Tacoli, 2009). The ability of a state to provide sufficient social protection, as well as its responses to disaster, is essential to displacement mitigation. The absence of an adequate policy on disaster risk management, relocation, and a long warning-times, puts communities at even higher risks when facing environmental threats and their consequences. Marginalization and discrimination may also influence displacement (Foresight, 2011, p. 44). For instance, by

excluding some groups access to vital support necessary to remain in place. To illustrate one of the ways that climate change can interact with the political driver, a survey conducted by McLeman (2006) serves as a good example. In his study on the “Dust Bowl” migration of 300,000 people in Oklahoma, he investigated the interaction between environmental changes in drylands and other changes occurring at the same time. The droughts in 1934 and 1936, combined with flooding in 1935, lead to the widespread crop-failure of cotton, a major agricultural industry in Oklahoma. Based on tenancy agreements, tenant farmers were not able to continue residing on these farms because of the unsuccessful harvests. Through the legal-political basis for land tenure, rural populations (with the majority being tenant farm families) were forced to change place of residence (p. 44).

The second driver, concerned with *economics*, covers employment opportunities and income differentials. The economic status of a population is relevant when unusual or devastating climatic conditions occur as indebtedness or lack of financial resources can cause difficulties in rebuilding homes or continuing to work in industries (such as farming/fishing) which provide income. Communities with low economic status lack of a financial buffer and are more vulnerable to hazards and their consequences. It is one of the primary causes of migration (Raleigh, 2011). A characteristic of communities or areas most vulnerable to climate change, is their loss of primary livelihood systems. It is recognized that climate change is likely to make communities poorer over time (Foresight, 2011), and with poverty comes the lack of ability to respond to threats, regardless of type, which then may cause displacements.

Next, the *sociocultural* driver, or “social capital,” refers to the family and friends, cultural and social practices, and education opportunities. The volume of the social capital is determined by the presence and size of this network, which again influences the available assistance, persons are likely to receive. The extent of the networks of those affected and their ability to mobilize resources determine how well individuals are able to cope the environmental hazard. Thus, it influences the outcome and the likelihood of being displaced (Maxwell et al., 2015, p. 4). Weak social networks may lead to lack of information and hazard warnings, as well as access to people in power or with influence that can be utilized during and in the aftermath of a disaster. Since they provide important support in securing employment and accommodation, the absence of an established network (for newly displaced persons, for instance) can deprive them of the ability to cope with the event (Tacoli, 2011, p. 120). Similarly, grounded in the migration theory NELM, the decision to migrate made by

the whole household could be motivated by risk-spreading. The extra income that comes with migration can make households less vulnerable to environmental impacts and provide security in terms of a buffer (Castles, Haas, & Miller, 2014). On the other side, migration of some household may also lead to greater vulnerability for those left behind to manage the households, which are usually children and women (Stapleton et al., 2017). In terms of this study, the social and economic drivers are treated together, socio-economic, and concern the interplay between a social class and their financial situation.

The *demographic* driver refers to the population structure, such as age and density, and draws on the traditional idea of population pressure being a root cause of movement. A change in this driver, for instance aging in a society, may make the population more vulnerable in the case of a climatic event such as a drought. However, the assumption today is that demographic pressure, the pressure of groups, is more likely to influence the other drivers, and is relevant for whether and how people who are displaced return (Foresight, 2011). In another example, Henry, Schoumaker, and Beauchemin (2004) investigated the impact of rainfall conditions on human mobility in the drylands of Burkina Faso. They found that the movement was caused by the combination of socio-demographic conditions (rural households depending on pastoralism) and environmental factors (unfavourable rainfall variability).

Lastly, and of particular interest for this study is the *environmental* factor, which refers to food/water/energy security and land productivity, including infrastructure. Poor housing and infrastructure that are not well-equipped to cope with large displaced populations or made by non-resilient materials, may put exposed groups more at risk in times of a hazard (Tacoli, McGranahan, & Satterthwaite, 2015). Moreover, global warming and changes in the climate may affect access to, the stability of and the availability of ecosystem services. As they provide water, shelters and food, they are essential for human settlements, and thus vulnerable to changes in the climate. A lack of resources will likely impact communities and lead to livelihood instability, particularly those with economies dependent on fisheries, forestry or agriculture. In this way, ecosystem services contribute to place utility and in agricultural-dependent economies the determining factor is whether a threshold is crossed, coupled with land degradation and a lack of opportunities (Adger et al., 2015, p. 10). Although climate change is the key factor for changes in the environment, such factors may occur independently and influence other factors (like pollution, urbanization, changes in land use and overexploitation of natural resources). Due to these pressures, the environmental

factors are more likely to act as a proximate cause in the displacement-process (Hugo, 1996, p. 125).

This discussion of Black's five drivers reflects the view that environmental issues should be understood as a part of a broader processes of societal change, rather than an isolated factor (Castles, 2002). The discussion also leads us to conclude that climate change does not displace people alone but exacerbates underlying vulnerabilities. This vulnerability may be associated with the places migrants are located, the political governance of, their nations or socioeconomic situations. Even if people are being exposed to the same environmental event, vulnerabilities among them are not equally distributed due to different capacity to cope. In this way, social, political and economic policies and restrictions determine how groups are able to access knowledge, resources, rights and services (Wisner et al., 2004). Therefore, the impacts are felt unevenly among certain groups within a population. It also varies whether the climatic event is a direct driver or indirectly causes the migration through the other drivers. During extreme situations, where people are fleeing their homes for survival, the natural event (like a cyclone) appears to directly cause displacement. But when it comes to slower process events like droughts, the changes tend to indirectly drive human movement out of affected areas due to the absence of citizens' ability to maintain a livelihood (IOM, 2019b, p. 261). Regardless, the role of the event may cross a "threshold" where in situ adaptation is no longer feasible as a result of underlying conditions (Bardsley & Hugo, 2010; McLeman, 2018). Displacement would then be a secondary movement, either internally or cross-border. In certain places where migration is the normal livelihood adaptation-strategy, for instance in pastoralist areas or places where temporary labour migration is common (like in Bangladesh), the threshold is crossed when these "normal" migration-strategies become inadequate and consequently there is a change in destination and timing of the movement (2018, p. 325).

In conclusion, this study builds on the approach that environmentally induced displacement is a multicausal phenomenon driven by several different drivers. These are intertwined, act together and includes environmental conditions such as climate change. Some groups are more likely to cross a tipping point than others and are forced to uproot due to the underlying vulnerabilities and conditions that these drivers may cause.

## Chapter 3: Methodology: Secondary Document Analysis as a Method

This chapter consist of the research method and design the study has adopted. To provide an expanded understanding of the environmentally induced displacement process, the study analyses two cases which are comparable. To answer the research question, the study applies a qualitative method, that will be illustrated further.

### 3.1 Research Design – Comparative Case Study

The focal point for this study, the interplay of climate change and displacement, is based primarily upon two case studies from developing countries that will be analysed and discussed. Namely, the Somalia drought in 2011 and Cyclone Sidr (2007) and Aila (2009) in Bangladesh. The cases and countries in question are not chosen necessarily for representativeness, but to elucidate and exemplify ways in which environmental events serve as a tipping point on top of other factors. As climate change and natural hazards affect countries all over the world, the chosen case studies were among several potential countries and hazards. However, these two case studies were selected on a basis of the countries' high vulnerability to environmental threats, human displacements and their regularly experiences of natural hazards.

Despite contrasting type of hazard and ecological areas, these cases share the similarity of being located within exposed areas, where their populations are at increased risk of being displaced. By virtue of the complex nature of the issues examined, the chosen research design narrows the focus to an analysis of two selected case studies. This method was found suitable as it allows us to engage in a detailed and intensive assessment of causality for each case with variable-oriented studies, instead of merely a statistical analysis of many cases. However, the examination of more than one case provides a better position to establish the emergent theory in the findings.

## 3.2 Research Method - Secondary Document Analysis

A research method is like a tool for the researcher where a particular strategy is applied. The research strategy may be either quantitative or qualitative. While the quantitative research emphasizes measurements and generalization, the qualitative research is concerned with words and in-depth analysis with the objective of understanding a phenomenon (Bryman, 2016, p. 33). Some of the main methods that the latter strategy involves are interviews and document analysis (primary and secondary).

To answer the research questions, this study applies a secondary document analysis (SDA). This method entails collecting relevant empirical data and through an analysis of these, developing a follow-up study. SDA may involve either qualitative and/or quantitative data (2016, p. 309). While this study will mainly consist of an examination of qualitative studies on the drivers of environmental-induced displacement, quantitative research is also included in the data collection as some are directed towards variable-oriented methods. Hence, it relies on original survey data as well as online publications and reports produced by international and governmental organizations.

A document analysis is suggested to be a realistic and viable approach as a research method and their documents, with “immense value”, make the method useful as a stand-alone strategy as well (Bowen, 2009, p. 29). Because qualitative data are rich in details and emphasize context and rich descriptions of the setting, event and people of study, the use of this type of data offers valuable insight and information for the researcher. Document analysis is therefore said to be well-suited for a qualitative case study as previously conducted studies have produced rich and detailed descriptions (Bowen, 2009). In this way, the method provides researchers with an ability to understand the behaviour of members of a particular social group, which serves as a preoccupation in qualitative research (Bryman, 2016). Using SDA as a method for this research project was found to be suitable for several reasons. Firstly, it offers the advantage of access to a vast amount of pre-existing data, as opposed to the researcher carrying out the data-collection herself. On top of being cost and time efficient, the available data is usually also of high-quality. It is gathered by experienced researchers and institutions, who tend to apply well-established control procedures to make sure the data is good quality. Another advantage of SDA is that a reanalysis of collected quantitative data may offer new and different interpretations, as well as objectivity (Bryman,

2016, p. 312). These public documents and empirical research have already been made, and are produced under natural conditions in a sense that the collected material is not affected by secondary researcher and their positionality (Karppinen & Moe, 2012, p. 6).

The process of SDA includes collection of primary data followed by an analysis of skimming, reading and interpreting the data collected. For the analytical framework, this study will adopt a method that involves elements of both thematic and content analysis. A thematic analysis involves applying a thematic content approach to existing research in a specific domain, which refers to the process of organizing and sorting information into categories closely connected to the research question (Bowen, 2009, p. 32). Among the central themes established during the data collection for this research were *population displacements, mobility, vulnerability factors (environmental, socioeconomic, political)*, within the specific context of the case studies. The overall aim is to collect evidence which examines the causality of environmentally induced displacement. The collected data were therefore chosen based on their relevance to the focus of the research. This approach, is one of four suggested approaches in SDA (Ruggiano & Perry, 2019). The data points were found relevant if they highlighted one specific dimension which could be linked to the displacement. They were also found relevant if the research participants were themselves directly affected by the natural hazard, rather than being outsiders. Where several studies investigated the same aspect of the displacement, the selection was based upon the numbers of references and the overall impression of quality.

It should be noted that in terms of handling data, a critical and careful examination is crucial. And due to the lack of first-hand knowledge of data, it may be favourable for researcher to spend some time of familiarization of different aspects of the data collected (Bryman, 2016, p. 313). Thus, it is particularly important to investigate the validity of those documents when conducting research based on digital document sources. For this research, several criteria were taken into considerations when evaluating the data. With a critical lens, it was clarified who wrote it, for what purpose and whether it can be trusted or not. Also, the credibility of the documents is a relevant criteria to examine. It refers to what extent they are free from errors and carried out according to principles of good practice (Bryman, 2016, p. 385). Though researcher can never be completely sure that the documents are totally free from any errors, it is reasonable to believe that the documents collected for this study are accurate, as they were all official and prepared for these purposes.

### 3.3 Methodological Principles - Epistemological and Ontological Foundations

A project's methodology includes its underlying principles for research and analysis. Thus, it is not identical with the method applied. In a qualitative research design, the relationship between research and theory is usually inductively arrived at (Bryman, 2016). Meaning that by conducting the research with an inductive approach, the concluding theory is arrived at and developed from the data collection and through the analysis. This research project adapts such an interpretivist position. The study concerns document analysis, and thus, an interpretation of previously conducted studies involves a contextual understanding of the social world. With a contextual interpretation, the analysis aims to reflect the meaning of the text in its specific context. This study further adopts a constructionist ontological position. It holds that social phenomena are accomplished by social actors, meaning that knowledge about the social world is socially constructed. This approach is antithetical to objectivism as it challenges the view of social actors being external and without having an influencing role (2016, p. 29). With people being the subject of study, the literature highlights ways in which it is a feature of qualitative study design to interpret the social world "through the eyes of the people being studied" (2016, p. 392). However, this research relies on how the collected and interpreted studies are produced. To what extent they manage to interpret the social world from the perspective of the EDPs varies along with their use of different research strategies.

### 3.4 Ethical Considerations and Positionality

In all phases of the research process, from choosing the area of research until the end of the analysis, the values of the researcher are likely to impact the choices in the study. Research is a social activity, and as such the data and methods chosen relate to researchers' ideas about what is important. Bryman (2016) refers to the issue with these presuppositions as a "moral vacuum" the researcher is never able to achieve when conducting research (p. 141). When making sense out of the data collected, factors such as dispositions, biases and personal positions may influence the process. Therefore, it is important to be aware of how and in what ways the ethical integrity of the researcher could influence the outcome of the research. Or, in other words, the quality of the research.

Basic ethical considerations, such as anonymity, confidentiality and risks to informed consent, are derived from the source materials used, as this study is based upon empirical research conducted by others. Bryman (2016) writes that during SDA the consent of the participants may have been excluded in some documents. Moreover, the identity of the institutions conducting the research could be hard to conceal due to the rich contextual details (p.595). Parry and Mauthner (2004) argue that because the data is not created by the researcher alone, but is a “joint endeavour between respondent and researcher,” – re-using the data poses ethical concerns in terms of disregarding the ownership respondents have over their contributions (p. 141). Accordingly, it is useful to be aware of some of the risks that SDA’s in-depth nature raises when de-identifying it for the purpose of sharing it. While details allow readers to potentially identify respondents in a survey, removing these descriptions could weaken the quality of the data (2004).

The positionality of the author in the context of the research is another area of interest, as it may have implications for how the data is collected and analysed. Although the aim should be to conduct objective research, their position, political and legal stances may influence their area of focus. When it comes to the topic of this research project, the author deeply cares for the environment and has a high level of concern about global warming and its future impacts. The choice to investigate one of the social effects of climate change, displacement, derives from an interest in human security, justice, and human rights. Accordingly, with a human rights-based approach, the researcher wish to advocate for more rights, a higher level of protection for EDPs, and to inspire sympathy towards their situations. As these topics are of great importance to the author, they have thus shaped the positionality of the research. Being aware of these aspects and their potential influence on the study, the aim is still to be as objective as is possible.

However, the author is an outsider from the perspective of the study’s object and setting, which is another ethical consideration to be aware of in this research. The background and worldview of the author may intrude on the research’s neutrality. Being a Norwegian born and raised in a Western Welfare State, where the effects of climate change are not felt as strong nor issues of environmental displacement, the investigation therefore takes places within an unfamiliar field for the author. The role of an outsider, with its difficulties identifying with the population affected (the environmentally induced displaced) could be problematic when interpreting data if the author were to do fieldwork as a part of their study. However, as this study is based on pre-existing research, the role as an outsider will not cause

many weaknesses in the study. Similarly, as an attempt to overcome the potential issue of ethnocentric bias in the selection of research, the data collection involves studies conducted by both Western and non-Western researchers and institutions.

### 3.5 Problems and Limitations

The choice of using SDA does come with some weaknesses and limitations. Firstly, due to the place-specific nature of the two case studies, conclusions and findings made in this paper may only be applicable to a limited extent. Another point of criticism relates to the methodological rigor. There is a risk of inconsistencies between how the researcher uses the data from studies and the original aim of their authors, and key variables may be absent. While most of the selected studies had their focus on human displacement, most only focused on one dimension of it with a specific context. Also, a few studies applied a political or legal approach with a completely different focus than this study. In this way, the original aims were not identical to the aim of this study.

Ruggiano and Perry (2019) highlight the fact that a re-interpretation of subjective data from an earlier time, especially when there has been a change of social, political and cultural norms, may have implications for how the original data should be analysed. Most of the data in this study was collected shortly after the 2010/2011 drought and the cyclones in 2007 and 2009. As this was more than 10 years ago, there may be findings from the data that are not as relevant today as they were back then. Hence, the possibility of a change in the context may have made an impact on the collected data. Accordingly, Bryman (2016) notes that the findings may not always meet the secondary researcher's needs, as they are collected with a different objective than the original authors (p.595). As the data in this study have been presented by others, they should be examined in lines with the context in which they were produced. Hence, their findings need to be recognized for what they are and within their intended purpose (p. 561). Although the authors' background and methodology applied were carefully examined, there were difficulties in some studies knowing to what extent it was of high-quality.

In both case studies, the exact numbers of displaced people were difficult to examine. The data relied on different statistics with various location of study. Accordingly, the choice of Somalia as one of the case-studies came with some limitations itself, with less research being

conducted in the area. While there were some first-hand empirical studies, most of the available data were in this case articles and international reports. Due to security restrictions, the access to reliable data and affected people were recognized to be an issue. Therefore, some of the data relied on interviews of the humanitarian or governmental actors and not the affected people themselves. It was also reported difficulties to obtain data of pastoralists than other EDP-groups as they are nomadic as well as census data on livestock.

Another drawback of this methodology, is the absence of “triangulation,” the combination of different methodologies in the same research project (Bowen, 2009, p. 28). Triangulation may reduce risk of potential bias because researcher is able to corroborate the findings across the various sets of data. As this study is only based on SDA, other research strategies, such as participant/non-participant observation and interviews have not been part of the data collection. Hence, the absence of this could cause blind spots in the analysis. Nevertheless, by carefully examining the studies in the context in which they were produced, the issue of being biased can be largely avoided.

To sum up the, the qualitative method presented in this section provide a better contextual understanding of the interconnection of drivers of displacement following a drought and a cyclone. By exploring the drivers within a comparison case study between two varying nations illustrate roles of the drivers may have within different groups in the population.

## Chapter 4: Background of Case Study

This chapter contains a description to provide the context of the mass-displacement during and following the 2010/2011 Drought in Somalia and the displacements in the aftermath of the Cyclones in Bangladesh. First, it provides an overview of the country background, followed by an explanation of the natural hazard. Order wise, this will first be described in the case of Somalia, then Bangladesh.

### 4.1 Case one: Drought in Somalia

#### 4.1.1 Country Background

Somalia is a nation highly exposed to climate change and its impacts, particularly due to its location in the arid and semiarid dryland. In the region of Horn of Africa, which includes Somalia, drought is suggested to be the most significant hazard (Ginnetti & Franck, 2014, p. 11). The area's dependency of rainfall to sustain natural resources, coupled with issues of land degradation make the region particularly vulnerable to agricultural production and global warming (Niang et al., 2014). Moreover, Somalia is experiencing population growth, a double since 1970, as well as an absence of technical food production improvement (Majid and McDowell, 2012, p.38). In light of these circumstances, food insecurity has been an issue in the country the past two decades (Hillbruner & Moloney, 2012).

The impact of climate change in Sub-Saharan Africa is yet not agreed upon due to the natural variation. Hence, it remains uncertain whether the drought in 2010/2011 and the following displacements were a direct cause of it. Nevertheless, there are observed more droughts in the dryland of Sub-Saharan Africa every 4-5 years in recent past, with the last one from 2016 to 2017 (Foresight, 2011, p. 68). Recent review of state-of-the art impacts of droughts suggests that droughts tend to be increasingly frequent, more severe and longer in East Africa (Haile et al., 2019). In their newest report on Climate Change and Land, the IPCC estimates with medium confidence that climate change causes increased drought frequency and severity (2019, p. 10). Besides, changes in the rainfall regime and prevailing temperatures have exacerbated other environmental stresses, such as land degradation, desertification, expansion

of semi-arid land and flooding in the Saharan dryland. It may affect water quality and security, land productivity, agriculture income, as well as the well-being of people by increasing the frequency of crop-failure (Foresight, 2011, p. 52). Thus, environmental conditions in Somalia undermine productive areas and livelihoods of its population.

Parallel to the main economy in Somalia coming from small-scale agriculture and pastoralism, the majority of the Somali people are nomadic pastoralists (Lindley, 2014). Pastoralism is a type of lifestyle involving seasonal mobility where the main livelihood activity is livestock rearing. When it comes to system of land ownership tenure, they usually grant equal rights for pastoralists to exploit resources. However, practise show differently in Somalia, and regulations of grazing land areas are regulated within and between tribes in Somalia (Ginnetti & Franck, 2014). Somalia is featured by a clan system of social network that is highly linked with political negotiations (Devereux, 2006). The lack of political power and social status are likely to translate into higher level of vulnerability, and to what extent pastoralists are vulnerable depends on personal social relationships, international geopolitics, and available assets. Thus, the vulnerability changes along with political instability and social change within the nation. Some of these conclusions are also applicable across the population in Somalia as a whole, and the interplay between clan, politics and livelihoods within Somalia is crucial to an contextual understanding of the 2010/2011 crisis (Majid & McDowell, 2012).

Somali pastoralists are a relevant group of people to study in the context of environmentally induced displacement as this population heavily rely on the environment for their livelihood. The main source of income comes from sales of livestock and their products, which is closely related to land production and agricultural resources. Because of their dependency on natural resources, they are recognized as a key vulnerable group to the impacts of climate change (IPCC, 2014a). Traditionally, pastoralists have lived in the harsh semi-arid environment of The Horn of Africa for years, and adopted a livelihood-strategy to overcome rainfall variable and unpredictable climatic conditions by moving their livestock across long distances (Galvin, 2009). Nevertheless, droughts and warmer conditions test their adaptive capacity and have become a challenge for the pastoralists. Less access to water and pasture leaves fewer opportunities to relocate and threaten their livelihood in a way that they are forced to range far distances in search for accessible resources. It is recognized that changes in climate variabilities are affecting “normal” adaptation strategies, like temporary migration (Galvin, 2009). Also, increased violence since the state collapse in 1991, have mediated more

“routine” mobility and displacements within the nomadic pastoralists to become more apparent (Lindley, 2013).

The drought in 2010/11 took place within heavily militarized and politicized context featured by an unstable government and violence. Somalia, the “failed state”, has been suffering from insecurity and civil war with an ineffective and weak national governance since the fall of Siyad Barre’s regime (Achour & Lacan, 2012, p. 87). Between 2007 and 2011, the Islamist militant group Al-Shahaab was under control of southern Somalia. There was an on-going war between Al-Shabaab on one side, and the African Union Mission in Somalia (AMISOM) and Transitional Federal Government of Somalia (TFG) on the other. Historically, the conflict took a regional dimension in 2006 when Ethiopian troops, backed up by the U.S, invaded Somalia with the aim of driving out the Union of Islamic Courts (ISC) from power and consolidate the TFG. Two years later, in 2008, and with a global dimension, the US put Somalia on the terror list with a purpose of undermining Al-Shabaab. It resulted in a shut-down of food aid and a “global war on terror”. The use of anti-terrorism legislation from the US caused a pull-out of crucial food aid programs before a famine was declared in 2011. After the famine was declared, violence and armed conflict have since embossed the country (Maxwell & Fitzpatrick, 2012).

The role of socio-cultural resources, like religion, kinship and diaspora, have for the Somali pastoralists increasingly played a prominent role (Lindley, 2014). Movements of family from rural to urban areas or internationally, and contributions from networks are central part of their ability to cope with and recover from climatic stress. Thus, an important coping strategy in times of drought. It involves components of “risk-smoothing” as it provides assistance in terms of exchanging basic services and a source of cash remittance (Maxwell et al., 2015, p. 7). However, along with a temperature-rise and less available crops, the common strategy to distribute portions of herds to their networks with purpose of assisting those who struggle, have though become more difficult (Galvin, 2009). Consequently, this population is also at risk of being displaced alongside usual migration patterns being distributed. The determining point of displacement is whether a “critical threshold necessary for subsistence” are reached, referring to a minimum amount of livestock (Ginnetti & Franck, 2014, p. 25). Pastoralism is not sustainable when the herd size falls below this threshold. The 2010/2011 Drought is an example where this threshold was reached for many Somali pastoralists.

#### 4.1.2 The Drought

During late 2010 and early 2011, southern Somalia experienced a severe drought where the UN declared a famine on July 20<sup>th</sup> 2011. The failure of the Deyr rain in October-December 2010 and poor Gu rainfall April-June 2011, severely affected ecosystem services, leading to water shortages, a decrease in crop production, and higher mortality rates among livestock. Dried up waterpoints and wells led to a pasture condition being below normal which severely affected the cattle-rearing pastoralists. The conditions prompted food insecurity and threatened both the livelihood and survival of Somali communities.

The rainfall in this most affected region in the country was at its lowest recorded in 50 years, being 50 %-75 % below normal (Nicholson, 2014, p. 61). The significant reduction of crop production and increased mortality rates among livestock, decreased available food in the nation. It also affected the most common source of income; livestock sales (Maxwell & Fitzpatrick, 2012). The Food Security and Nutrition Analysis Unit (FSNAU, 2011) reported a loss of 50 % to 70 % of the livestock holding at the time, and a decline in cattle price of 60 % (p. 48). Accordingly, the agricultural sector experienced its worst crop production in 17 years (FSNAU, 2011). Due to limited available labour among the southern urban poor, the drought rapidly declined the economic activity. These were also the people worst affected. At the time, the FSNAU (2011) reported a “very critical” nutrition situation among the pastoralists in the southern Somalia (p. 52).

As opportunities were “drying up” in Somalia, many pastoralists were forced to cross border to Kenya. However, although the lack of rainfall obviously had significant impacts, it was not solely what made pastoralism unsustainable. Like researcher Levine (2011) argued; a humanitarian crisis like in 2010/2011, will unlikely happen in pastoralists areas unless there are other issues involved. Including failed rain, Somalia experienced at this period of time rapid increase in food price. The FSNAU (Food Security and Nutrition Analysis Unit) (2011) reported an increase in cereal prices in the country up to 135 % higher in March 2011 compare to the year before (p. 24). Because Somalia relies on imported food, the increase in international prices affect food security even in good rainfall years. At the same time, an unfortunate drop in income was caused by the loss of livestock combined with a decline in labour opportunities. The drop in entitlements severely affected the agro-pastoralists as they highly rely on it (p. 6).

The Famine Early Warning Systems Network (FewsNet) and FAO-managed Food Security and Nutrition Analysis Unit (FSNAU) successfully warned about extreme conditions and increase in “distress coping strategies”, like massive movements to neighbouring countries of Ethiopia and Kenya (FSNAU, 2011, p. 65). Despite their accurate reports, the humanitarian field failed to provide timely assistance for the EDPs due to the turbulent political circumstances. By the time the drought hit, and along with the rise of Islamic activity, Somalia was found to be one of the most dangerous places for humanitarian workers. The nations was from a view of a humanitarian an insecure and “ungoverned land” (Bradbury & Kleinman, 2010, p. 16). As a result, several food-aid programs had pulled out of the state between 2008 and 2012 and the humanitarian space were closed down for years (Maxwell & Fitzpatrick, 2012). Achour and Lacan (2012) noted that 1.7 million Somali did not have access to humanitarian aid and another 4 million lacked access to basic food 2011 (p. 87).

During the Siyad Barre’s regime and the early years of the conflict, marginalized groups in areas that suffered the most from malnutrition had been pushed out of the best grazing- and productive land areas by more powerful people. In addition to a shift in control of land, rangeland became increasingly out of reach to which these groups were forced to remain in marginal land areas degreasing grazing- and water resources (Maxwell et al., 2012, p.8). According to FSNAU (2011), there had been observed several resource-based conflicts due to disputes over ownership of water points and grazing land (p. 19). Along with the governmental collapse, there was a breakdown in infrastructure and access to basic services, like education, healthcare, and agricultural extension. These services would either be provided through humanitarian aid, which was highly limited due to the insecure area, or privatized. Thus, the services were most limited for the poor and marginalized pastoralists being unable to pay for them (p. 8). Including limiting peoples’ access to public services, Al-Shabaab imposed taxation methods, restricted access for humanitarian space, which deprived people access to emergency assistance and limited access to extensive land areas, to water sources and to pasture (FSNAU, 2011, p. 19). The conditions affected four million people and led to the worst flight since the previous famine in 1992-1993 (Maxwell & Fitzpatrick, 2012). While some remained within national borders, a vast amount fled to neighbouring countries like Kenya and Ethiopia. From a number perspective, by the time the famine was declared, more than 200,000 had recently crossed borders (Maxwell et al., 2015). The UN Refugee Agency UNHCR reported in their Global Report 2011 a number of 290,000

displaced Somali people seeking refugee in Ethiopia or Kenya and an additional 1.3 million internally displaced in 2011 (2012, p. 95). According to Maxwell et al. (2014), there were reported 480,000 Somali refugees in Kenya by May 2012 (p. 23).

Although drought-related displacement is usually temporary labour migration, the case of Somalia illustrates that this type of movement may also be long term displacement, both internally and internationally. The cross-border flight in Somalia to Kenya reflects the reality of drought displacement, the interplay between the classical drivers of migration and the environmental, and the weakness of current refugee regime. It serves as an example of times where the legal framework for EDPs is on the edge. The EDPs' flight from insecurity caused by the combination of these forces can be described as a type of "survival migration" (Betts, 2013). While it is easy to blame it on the drought itself, it is argued that the role of a weak government cannot be underestimated. Betts (2013) put the emphasis on the existential threat which leads to movement. Instead of blaming the displacement solely on climate change, the definition broadly refers to a flight from danger from several conditions, such as conflict, insecurity, human rights abuses, and climatic conditions. The proximate factors, in terms of the more obvious causes, have all been mediated through a state that are either unwilling or unable to ensure protection and rights for its citizens. It may be referred to as a "global disorder" whereas those seeking refugee are not solely fleeing from poor governance and state fragility, rather they are fleeing from harsh circumstances in a collapsed society. It refers to a collapse of traditional livelihood, hunger, environmental conditions and poverty – all of which are under-researched forms of forced migration (Betts & Collier, 2017). Climate change, state fragility, globalization and urbanization can all be linked to this type of movement and a source of danger.

## 4.2 Case two: Cyclone Sidr and Cyclone Aila in Bangladesh

### 4.2.2 Country Background

Bangladesh is a nation highly vulnerable to climate change and is recognized as the most cyclone-prone country in the world (Hossain & Paul, 2018). The low altitude, topographic and geographical location make the country particularly prone to the impacts of climate change, especially its coastal zone. This area is on the front line of climate change and particularly exposed to sea level rise and rapid onset events like cyclones. As elsewhere, these two shocks are two out of five suggested ways environmental change will influence human movement (Black et al., 2011). For good reasons, the nation is “a country made for natural disasters” (Poncelet, Gemenne, Martiniello, & Bousetta, 2010, p. 212). Considering its exceptional vulnerability to tropical cyclones, the coastal area of Bangladesh has been a focus of environmentally induced displacement research.

It remains unclear whether climate change itself affects the activity of cyclones. The IPCC concluded in their Fifth Assessment Report from 2014 with low confidence that it increases the cyclone activity on a global scale. However, it is suggested that along with annual temperature rise and a rising sea level, cyclones are likely to become more severe in the future with an increase in their intensity, while their frequency may decline or remain unchanged (Foresight, 2011, p. 77). Also, newer scientific projections from the IPCC correlates well with these findings (Collins & Sutherland, 2019, p. 602). When it comes to Bangladesh, the nation has experienced about 36 cyclones the last 40 years, with one severe on an average of every third year (Hossain & Paul, 2018, p. 55). The impacts of climate change on human mobility in Bangladesh remains disputed. Nevertheless, changes in the patterns are observed, particularly during dry season or during floods, whereas people increasingly flee to urban areas to maintain their livelihood (Poncelet et al., 2010, p. 215).

Most of the coastal communities in Bangladesh make a living by farming and fishing. An estimated 140,000 – 160,000 households are depending on fishery-based livelihood, which make up the main occupation in the area (Hossain et al., 2013, p. 117). Similarly like the Somali pastoralists, the livelihood of the fishermen relies on ecological services and are therefore particularly vulnerable to changes in the environment. The cyclones caused heavy damage on the coastal area to which its pre-disaster situation is relevant. Besides being

exposed to sudden shocks, the coastal zone has a high population density, leaving a high number of people and communities at risk to impacts of natural hazards (Paul & Routray, 2011). The area has been suffering from inadequate infrastructure. Houses have been poorly constructed and made of weak materials, like mud, and embankments, that aim to protect agriculture, may be weak and not properly maintained since previous cyclones have made landfall (Saha, 2017). Accordingly, some of the houses are located nearer to the coastal areas (3.5 meter), than what have been recommended (4 meters) (Mallick, Ahmed, & Vogt, 2017). Other environmental issues, such as poor water quality and environmental degradation, are causing bad soil condition and influencing the well-being and people's job opportunities (Poncelet et al., 2010).

In Bangladesh, migration from rural to urban areas has been a strategy to maximize income of rural households to support family and kinship. The majority of them are coming from landless families (Afsar, 2002). However, parallel to severe impacts of climate change, environmental disruptions have increasingly forced movement of Bangladeshi people (Martin et al., 2014; Martin et al., 2017). Thus, migration serve also as a crucial strategy to survive in the face of a environmental hazard (Hugo, 1996; Paul & Routray, 2011; Saha, 2017; Wisner et al., 2004). Following flooding during monsoon season, for instance, circular and temporary migration in Bangladesh is commonplace. In the case of small scale fishing communities, they have long been adapting to climate variability and the impacts of it by temporarily moving. In light of increased impacts of climate change, additional adaptation is being recommended (Islam, 2013). In cases where seasonal migration is a form of adaptation, the “fourth threshold” is reached when “normal” strategies are inadequate due to substantive changes (McLeman, 2018). Such turn from temporary to permanent displacement was the case for some Bangladeshi following both cyclones.

#### 4.2.1 Cyclones Sidr and Aila

On November 15<sup>th</sup> in 2007, a category 4 cyclone, Cyclone Sidr, struck the southwest coast of Bangladesh. It caused 3363 deaths, damaged 1.5 million homes and 2.5 million acres of farmlands (Mallick et al., 2017). The livelihoods of 8.7 million got affected among the 30 districts that were hit (Poncelet et al., 2010, p. 214). In the 12 most affected areas, the cyclone caused enormous displacements, both initially (9 million) and over a significant period of time (3.5 million) (Nadiruzzaman & Paul, 2013, p. 167). Less than two years later, on May

25<sup>th</sup>, 2009, Cyclone Aila, a category 1, made landfall in the same area. Although the strength of Aila was only a third of Sidr, the cyclone spent more time over-land which increased its impacts. Besides destroying many acres of cropland, killing 100,000 of livestock and destroying thousands of kilometres with road and embankments, this cyclone also severely affected human beings. 4 million people were affected and 2 million were displaced (Islam & Hasan, 2016). Among them were 375,000 displaced in two of the most affected districts, half of them still displaced 5 months later, and forced to live along embankments or on elevated roads (ECHO, 2009). While the displacement rate was higher from Cyclone Sidr, the period of recovery was longer in the aftermath of Cyclone Aila. The latter cyclone caused economic and social devastation on vulnerable communities from which they had not yet recovered from the first one. Affected communities suffered from limited of access to food supplies and basic services. For instance, the majority of those who became EDPs in the aftermath of Aila in the survey by Islam and Hasan, (2016) lacked access to public services, such as safe drinking water (97 %), basic health services (88 %) and education services (93%). About 2 % of the EDPs left their place within 5 days, whereas the majority (89 %) left between 15 days and 2 months (2016). Moreover, many were uprooted from existing reliable social network through mass-displacement, both temporary and permanent, which damaged their social capital (Saha, 2015).

In a climate change vulnerable country like Bangladesh, an effective disaster management, such as pre-disaster preparedness, evacuation, and cyclone warning, is crucial to lessen the negative impacts from natural hazards. By the time the cyclones struck, the nation had improved its disaster prevention and preparedness along the coast since the previous major cyclone struck in 1991. One example is the recommendation to the government to reconstruct houses with a “Build Back Better” approach in their housing programmes to improve livelihoods and safer housing (Nadiruzzaman & Paul, 2013). Nevertheless, corruption has previously been recognized as an underlying governance failure in Bangladesh, which impacted the effectiveness of the disaster measures (Saha, 2015). Early warnings had been provided and most people received both warnings and evacuation orders ahead of the cyclones. In the survey by Mallick et al. (2017), for instance, 78 % of the respondents received early warnings 6 hours before the cyclone made landfall. However, the mitigation activities taken were still found inadequate and influence by inefficient personals and improper implementation (Hossain & Paul, 2018, p. 63). Both regional and international NGOs aided in the aftermath of Cyclone Aila in terms of food- and housing assistance, and

employment schemes. Nevertheless, the aid was featured by giving priority based on political, social and religious status of the communities (Mallick et al., 2017).

Cyclones Sidr and Aila are the two most devastating cyclones striking Bangladesh in recent times (Martin et al., 2014, p. 93). Most affected were those districts located in Lower Ganges delta, a low-lying area with high population density which make up about 80 % of the nation (Bangladesh, 2008, p. 8). Besides causing social damage, they severely impacted the environment on the coastal area. Ecosystem services and crucial infrastructure, such as fishing boats and nets, were washed away, and coastal embankments had burst. In the aftermath, areas suffered from openness to tidal flow from Bay of Bengal because of the broken embankments. Saline water intrusion damaged crops, agricultural production, household assets and available ecosystem services, like water. Ponds, the main source of drinking water, became unstable and contaminated with saline water causing water scarcity. Hence, communities were forced to rely on tank water provided by the government, or to travel to other water sources. Some groups had limited financial resources to do (ECHO, 2009). Along with cultivable land being under saline water, devastation on crops and shrimp farms severely affected the occupation of many fishing communities and made it difficult to continue their profession – their primary and only source of income. Among the 32 displaced households interviewed in the survey by Saha (2017), all but three had their agricultural land submerged of saline water in the aftermath of Aila. Accordingly, 80 % of her respondents had lost their livestock and suffered from water scarcity. Along with the damage from water intrusion, people took on investment loans as an attempt to counteract the income-losses (Kartiki, 2011). Both cyclones had significant impact on groups along the coast in several ways. As a result, forced migration due to substantive changes in the environment is particularly interesting to study and illustrate when the “fourth threshold” is reached due to a lack of ability to recover from climatic stress.

Rapid-onset displacements caused by hazards like cyclones, are usually internally, as people flee short distances and like to come back. Contrary to the mass displacement in Somalia, the EDPs in Bangladesh did not cross borders, and most people remained within national borders. These EDPs were legally protected through the Guiding Principles on Internal Displacement introduced the UNHCR in 1998. The framework protects those forced to flee their homes as a result of “natural or human-made disasters”, such as cyclones, and who has not crossed an internationally recognized border (22 July 1998, p. 5). Although the principles

set forth minimum safety nets and relevant standards for the protection of people, a key issue is that they are not legally binding on the nation of Bangladesh, only guiding in nature. Hence, the EDPs still suffered from rights violation in the aftermath of the cyclones. Without a further examination of this dimension, the case of Bangladesh illustrates another aspect of the need of a coherent institutional and legal approach in favour of EDPs.

## Chapter 5: Analysis and Discussion of Case Studies

In this chapter the analysis and discussion of empirical data from the two case studies will take place. To perform the analysis, Black's model of five drivers of migration and Hugo's concept of threshold are utilized to reveal how environmentally induced displacement are a multicausal phenomenon. The chapter includes causes for the displacements, first in the case of Somalia following by Bangladesh, then a brief comparison of the two. The discussion is divided into smaller topics in lines with the research questions as the author found this more orderly. The following factors will guide the analysis; 1.) environmental, 2.) socio-economic and 3.) political conditions for the displacement.

The chapter allows for comparison of both cases based on causes that previous research found relevant. To achieve a full contextual understanding of the refuge, the criteria when choosing the data was to collect studies that revealed different aspects of this flight, including underlying conditions and vulnerabilities. Hence, the analysis reflects key conditions that are relevant before and during a natural hazard to shed light on their interplay. Thus, it addresses the research questions, investigating the role of the climatic event in the case of Somalia drought and cyclones in Bangladesh, and exploring relevant factors that makes some groups more at risk of being displaced than others (see chapter 1.2).

### 5. 1 Somalia - Causes for the Displacement

In light of the context provided above, the question is now what made pastoralism unsustainable and as such crossed the threshold to flee their place. Most of the studies applied a minimalist approach, suggesting the displacement was multicausal and dominantly in response to two conditions: the drought and a political contested area. In relation to the latter, some of the data emphasized the delay in national and international response (Haan et al., 2012) and failed humanitarian space (Seal & Bailey, 2013). Accordingly, some of the data collected included less publicized narratives, such as high food prices (Maxwell & Fitzpatrick, 2012), the extent of social connections (Maxwell et al., 2015) and more hidden dimensions (Majid & McDowell, 2012). Among others, these will be analysed next.

### 5.1.1 Environmental

Maxwell and Fitzpatrick (2012) analysed the different causes for the mass-flight and distinguished between “proximate,” “underlying” and “complicating” reasons. They suggested that among the “proximate” causes for the flight were the 1.) the drought, 2.) the war, and 3.) a rise in global food prices (Maxwell & Fitzpatrick, 2012). Considering the complex nature of human displacement today, it is about impossible to identify EDPs. Thus, it is difficult to untangle those who fled solely because of the drought, from the other causes. In a technical paper of displaced Somali during the 2010 Drought, Ginnetti and Franck (2014) revealed numbers from UNHCR reports and showed that among the total reported displacements, about 1/10<sup>th</sup> identified drought as the primary reason for fleeing (Figure 2) (Ginnetti & Franck, 2014).

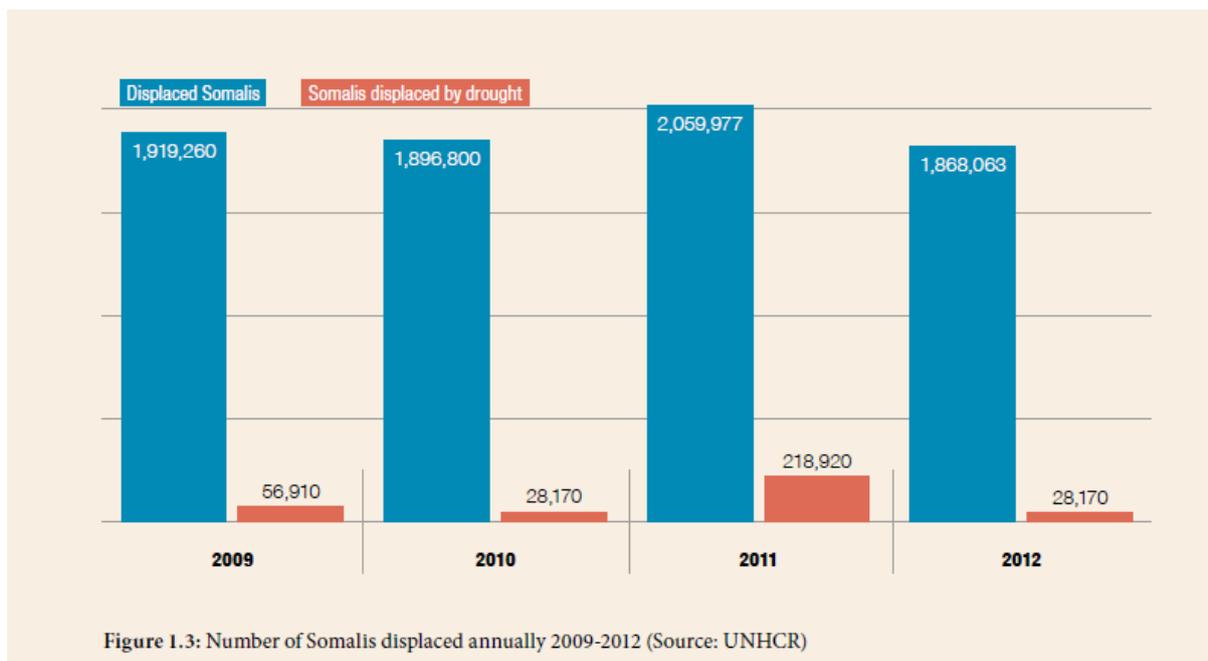


Figure 2: Number of Somalis displaced annually (2009-2012) (Ginnetti & Franck, 2014)

Figure 2 should though be used cautiously. People who are registered in UNHCR records are only permitted to list one reason for fleeing. Consequently, the statistic obscures the multi-causal dimension of the crisis. People may not list “drought” as a reason even if it deprived their socioeconomic situation. However, as Figure 2 reveals, the numbers of displacements caused by the drought did significant increase in 2011 compared to 2010. Conversely, they decreased in 2012 when there was a successful rainfall.

A previous conducted survey by Devereux (2006) provide useful findings of livelihood vulnerabilities among pastoralists in the Somali Region. He noted that drought was identified as number one source of risk to the livelihoods in rural areas among his respondents (p. 14). The failure of the 2010 Deyr and 2011 Gu-rain have been recognized as one of four “key drivers” for the mass-displacements in Somalia (Hillbruner & Moloney, 2012). Similarly, Maxwell et al (2012) suggested that the lack of rainfall was a major trigger of the crisis. Along with the dry conditions affecting crop-production and available land- and water resources, the livestock was heavily impacted and herd-sizes decreasing (p. 6). Also, Lindley and Haslie (2011) noted that the drought was one out of two major causes of the displacements. The EDPs were forced to move to places where they could access food aid as a response to hunger and loss of their livelihood (p. 10). Finally, the study by Ginnetti and Franck (2014) found a clear link between displacement-rates and the lack of rainfall. With some limitation in data, they suggested that as a response to the decline in rainfall, the number of livestock declined (Figure 3).

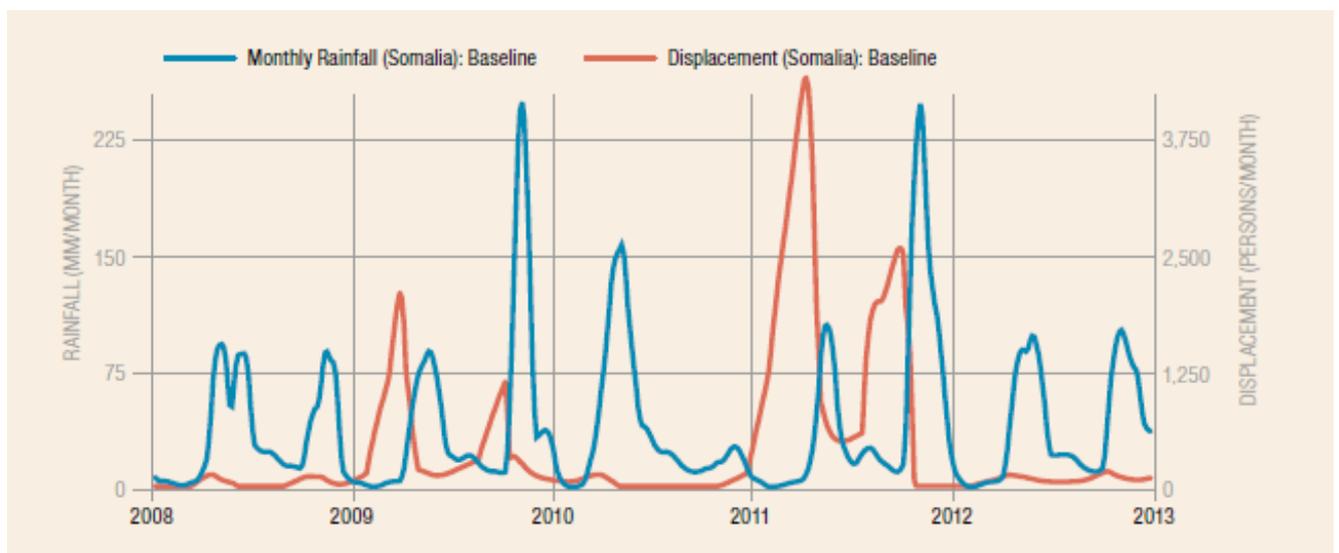


Figure 3: Historical monthly rainfall in comparison with displacement rates in Somalia caused by drought (Ginnetti & Franck, 2014).

Figure 3 reflects a connection between the lack of rainfall with the higher displacement-rate during the drought. The displacements did not occur immediately following the failed rainfalls but was delayed along with the impacts slowly becoming more severe. The graph replicates a quick drop of people listing “drought” as their reason for displacements in response to a successful rainfall-season late 2011. As this figure includes only pastoralist in

the southern area, it does not completely correspond with the scale in the UNHCR-statistics, as it includes all Somali EDPs in the whole country (2014 p. 29).

In the context of this study, the data suggest a causal relationship of delayed rain in the displacement-process of the EDPs. Along with the lack of rainfall directly declining available natural resources, pastoralists were “pushed” cross-borders to Kenya. Moreover, the drought gradually declined the ability of pastoralists to sustain an adequate standard of living by undermining livestock- and, crop production, agricultural labour, and the opportunities for herding simultaneously. The lack of available water and cereal stock, and overgrazing of land areas, decrease their herd-size, which caused instability and reduced the viability of their natural resource-dependent livelihood. Hence, the impacts of a lack of rainfall were multidimensional on rural livelihoods and influenced in different ways. In lines with the Foresight (2011) framework, the drought indirectly undermined their economic basis by forcing the pastoralists to find available resources for income other places. When the herd size became too small, pastoralism became harder, which prompted pastoralists to migrate further distances in search for available ecological services. Moreover, the drought indirectly affected their culture alongside with livestock rearing being an important cultural practice for the pastoralists. On that account, environmental conditions interacted with both the environmental and cultural driver (Foresight, 2011).

Maxwell and Fitzpatrick (2012) suggested that “underlying” factors contributed to the mass-displacement, referring to conditions that made the EDPs more vulnerable when the drought hit. Including prolonged insecurity in the country, particularly in the south, a breakdown of infrastructure and services, and a lack of access to basic services were found to be among the key factors that had a negative impact on the situation. In this regard, FSNAU (2011) reported that the difficult situation was aggravated by “chronic underlying factors”, such as household food insecurity and inadequate access to safe water, sanitation and health facilities. In terms of pre-existing environmental conditions, Devereux (2006) noted that Somali pastoralists are more exposed to impacts of droughts than previously. This was partially due to environmental degradation and increased demographic pressure on natural resources within the nation. Along with people adopting coping mechanism, such as fencing off land, there were less available space left for livestock to graze (p. 98). In similar lines, Majid and McDowell (2012) noted that the rise of population, in combination with a lack of diversification, left the Somali people highly exposed to impacts of the drought (p. 38).

The data reveal that the pastoralists were already physical, or asset-based, vulnerable by the time the drought hit. Including pre-existing issues of environmental degradation declining the capacity of the soil to be productive, the lack of available basic services was crucial for resistance to the well-being of pastoralists and their livelihood. A worsening of underlying conditions made the EDPs physical vulnerable, and as such causing difficulties to withstand the harsh environmental conditions. Nevertheless, their coping capacity and livelihood were gradually eroded by conditions that were not only environmental. Rather, the displacements were found to be partially caused by human-made structural factors (Maxwell & Fitzpatrick, 2012). On that account, Maxwell et al. (2012) noted that the lack of rainfall was not too dramatic, but “compounded the harm” (p. 6). Meaning that its effects, like a decrease of agricultural production, exacerbated the already harsh conditions in the nation. The displacements were not solely caused by the lack of rainfall, but a “multi-layered” crisis whereas other causes were relevant as well. Thus, the medias and politicians labelling of “drought displacement” are misrepresentative and can be criticised (Lindley, 2014).

### 5.1.2 Socio-Economic

Maxwell and Fitzpatrick (2012) proposed another “proximate” cause, a rise in global food prices. Despite being less dominating within the literature, they noted in their analysis that it was of “equal importance” as the drought (p. 6). As Somalia relies on imported food, the high prices were unfortunate for a nation already scarce on available food sources. Such findings implies that non-environmental condition of high food prices played a role in triggering the livelihood-failure. As the prices were high on a global level and the drought was a local concern, indicates that they were two separate factors, and that drought itself did not influence the food prices in the nation. Nevertheless, Maxwell and Fitzpatrick (2012) found that the lack of rain declined local crop production and prompted a collapse in the agricultural labour market. Such contributed to an increase in local crop and water prices, and a decrease in livestock-prices. In this way, the drought declined labour opportunities, deprived the income of rural people, and thereby influenced access to food and a collapse of entitlements. The combination of high global- and local prices created difficult economic conditions of poorer pastoralists and their ability to remain in place.

FSNAU (2011) reported that those worst affected by the situation were the poor populations in the southern part, particularly pure farmers, agro-pastoralists and cattle-rearing pastoralists (p. 34). Isolated set, the economy of the pastoralist sector was reported to be less affected by the war than the cropping sector, with its fixed assets (Majid & McDowell, 2012). Because of its clan-based trading system, it is more adaptable and flexible, and Majid and McDowell (2012) considered that it is within the wider political environment that they remain vulnerable. Such implies that the ongoing conflict had lower impacts on the pastoralists' adaptive capacity, and as such more hidden structures played an influential role. Even so, Majid and McDowell (2012) noted that the Ethiopian invasion in 2006 had a "knock-on" impact on social network and trade which were to be considered as an economic shock that diminished income opportunities (p. 40). Furthermore, the impacts from the drought were found to play a big role on the pastoralists economy as well, as they are heavily dependent on the agricultural sector to sustain an income (Majid & McDowell, 2012).

Along with the collapse of cereal production and the labour market, a rise in prices, and a deepening of the drought, the options remained fewer for the pastoralists, and as such distress migration or displacement became the option of last resort (Majid & McDowell, 2012). Based on previous reports, Majid et al. (2012) suggested that population growth coupled with lack of technical and economic improvements in poorer areas in Somalia, were among the "underlying" factors for the displacement (p. 38). They argued that in absence of livelihood diversification, communities were left more dependent on traditional assets. On a general basis, the vulnerabilities of the pastoralists were reinforced due to lack of diversification of traditional livelihoods in other comparable areas of dryland in Africa (p. 38). Along with a growing demand for the same resources, yet, using traditional production system, ecological resources became scarce in pastoralist areas. In the same line, Devereux (2006) found that the lack of diversification made the pastoralists particularly exposed when drought hit the nation. Although the study was conducted before the 2010 Drought, it provides useful insights into livelihood-vulnerability within the Somalia pastoralists and sheds light on relevant factors which impeded a regeneration of pastoralism. In terms of impact from the drought, they found that the previous 2004 Drought negatively affected education services in Somalia. Their respondents reported that both children and teachers failed to attend school due to hunger. Such was unfortunate as education was perceived as a crucial mean to access sources of income outside traditional pastoralism that would not be affected by environmental conditions (p. 160).

In the matter of this study, the data reveal that there is a close connection between climatic factors, cost of food and livelihood-crisis among rural communities. They also reflect one way that the political landscape, the Ethiopian invasion, may interact with environmental stress and decline income-opportunities. Along with the drought impeding education for the pastoralists, they were deprived access to valuable knowledge in alternative ways to cope with livelihood-stress when livestock rearing become difficult. Such findings support the assumption that the poorest households with lowest socio-economic status are often unable to diversify sources of income as they face constraints that better-off households may not face (Maxwell et al., 2015, p. 5). Thereby, the drought exacerbated their socio-economic vulnerability, which illustrates the potential of climate change to affect the socio-economic driver in the nation, yet, influencing the displacement-process (Foresight, 2011).

Including the dominant explanatory narratives; the drought, war and increase in food prices, evidence reveal that other structural factors were relevant drivers as well during the mass-displacement (Majid & McDowell, 2012; Maxwell et al., 2015). The low socio-economic status, or the “privileged gap” (Menkhaus, 2012, p. 34), of the pastoralists influenced the extent of formal assistance they received during the drought. It means that assistance and humanitarian aid from the international community and national authorities were only provided to particular privileged groups, whilst other clans were excluded. Maxwell et al. (2015) suggested that historical process of political marginalization was a relevant factor during the drought. By the same token, Majid and McDowell (2012) identified the less powerful groups of agro-pastoral Reewin and riverine Bantu. These groups were disproportionately affected on account of social hierarchy within the Somali community. Due to their lower status at the social hierarchy, more powerful groups hindered access to resource-rich areas and productive assets. In terms of international support, Majid and McDowell (2012) argued that a lack of international remittance was a “underlying” factor of the inability of minority pastoralists groups to cope with the drought. Although their social network is strong, it is less internationalized, meaning that these groups are less embedded in established international remittance networks. Because of their “landlocked” position and restrictions from Al-Shabaab, the international community provided very limited and late external assistance during the drought (p. 37). Holding a critical approach, Majid and McDowell (2012) considered that these clan dynamics were insufficient addressed in FSNAU figures during the drought. Baked into his analysis seems to be the argument that early warnings could have more successfully prevented effects from the drought, such as crop

failure and market labour collapse, if these dimensions were integrated. In this way, the different vulnerabilities of the EDPs could have revealed the risks they were facing. Thus, the recognition of vulnerabilities of all groups in analysis and statistics are essential for the international community to adequately respond to and prevent mass-displacement.

The studies illustrate that there is a link between political instability, clan dimension and pre-disaster measures. When fundamental coping-mechanism and access to land were deprived, pastoralism became more difficult. In terms of pre-disaster measures, the studies recognize that livelihood and food security analysis are likely to exacerbate vulnerabilities of certain groups. This became particularly evident in those areas worst affected in south where most of the population belong to the Somali minority-groups.

When it comes to the internal response, FSNAU (2011) found that contributions from social networks, in terms of food aid to the household-consumption in central and southern Somalia, were “minimal” (p. 40). In comparison to the Northern part, that was not as badly affected, the contribution to household income from safety nets were found to be equivalent to 1-7 %. Empirical data revealed that if the extended family was not able to help, people will turn to their institutional support that their clan provides (Devereux, 2006). A survey by Maxwell et al. (2015) investigated the social capital, including the support from the clans of the EDPs. Their study is based on 350 interviewees conducted between 2012-2014 from the perspectives of those most affected in both Somalia and Kenya. Maxwell et al. (2015) noted that social connectedness, in terms of norms within their clan-based identity, were crucial to be able to cope with harsh environmental conditions in times when the humanitarian aid failed. Moreover, they found that the crisis in 2010/2011 resulted in a collapse of the identified “second circle”, a circle that provides important social capital. This circle had already been weakened by the time the drought hit, by Al-Shabaab’s taxations and their claiming of resource-rich land areas. The value of having “someone to cry to”, meaning assistance from someone else in their clan, was widely recognized as fundamental to cope with the circumstances among the interviewees (2015 p.10). In the same line, Majid and McDowell (2012) suggested that the effectiveness of social support as a mechanism to cope with large-scale shocks, like drought, was limited during the crisis. Alongside with dry conditions reducing numbers of wealthy households, the strength of the social network of people declined simultaneously (p. 41). Similarly, Devereux (2006) found that informal social support system within the clans had been eroded during previous severe droughts. Including being exposed to the same environmental shocks and equally badly affected,

everyone in the community had the same level of income. Previously, there used to be some better-off who were able to help the others in the clan. Nevertheless, the present droughts, such as the 2004 Drought referred to as “the Equalizer”, had setback people in the community of being in the same unfortunate economic position. Hence, the ability to call on each other within the clans remained limited (p. 136). Finally, Maxwell and Fitzpatrick (2012) found that land ownership tenure in certain areas had implications for those groups with lower socio-economic status. They were forced to remain longer on already marginal land, which degraded water resources and rangeland (p. 9). These exclusive activities predominantly occurred in the areas of Juba and Shabelle Riverine.

In the context of this study, the studies suggest that there is a connection between pre-existing climatic factors, social capital and displacement. As a result of the political instability in the nation, coupled with a decline in crop production and livestock, the social capital of the pastoralists decreased. Maxwell et al. (2015) does not downplay the relevance of the drought and other environmental conditions. Rather, they seem to hold that less publicities condition during the drought, the internal response, was a part of shaping the displacement-process, thus, should be acknowledged as well. Because the international community failed to response, people had to rely on their own mechanism and network. Along with the worsening of environmental issues, the support from kinship deteriorated as members within a network of rural economy faced the same harsh conditions. The absence of network and internal assistance to provide vital support, had implications for the ability of people to sustain pastoralism. Consequently, the poor communities were already spatial vulnerable by the time the drought hit. This reflects the connection between how political and environmental factors may influence the social capital, which again determine the adaptive capacity of exposed people. Another aspect which becomes evident, is the connection between unequal power relation and displacement. The socio-political approach that these studies hold provide a more holistic picture of group-dynamics and why certain groups were worst affected. They reflect the reality of political and social life in Somalia and shed light on a complex interplay between clans and social groups, politics and pastoralists livelihoods. Moreover, it is drawn a link between underlying forces, such as social structures and hierarchy, to environmentally induced displacement. While powerful clans influenced control of the grazing land, other clans were excluded access to resources and crucial land areas. In such a way, marginalized cattle-rearing pastoralists were less able to cope with their livestock losses during the drought and to continue sustainable livestock-rearing due to structural forces that deprived access to

resource rich-land. When located in insecure and rural areas, and suffering from land exclusion, the minority groups had less access to necessary humanitarian aid. Not surprisingly, the exclusive activities were particularly evident in areas worst affected by the displacement-crisis. Hence, several socio-economic and environmental factors caused a breakdown in normal coping strategies of weaker groups within the Somali society, as they were stripped of their assets during the drought. Accordingly, the harsh environmental conditions were exacerbated by a contested landscape.

### 5.1.3 Political

Finally, Maxwell et al (2012) found that fighting against Al-Shabaab on one side, and the TFG with its Ethiopian allies on the other side, was the last “proximate” cause of the mass-flight. Although it was noted that the fighting did not particularly intensify during the drought, Maxwell and Fitzpatrick (2012) argued that it still impacted the civilians by restricting movements and limiting access to land areas (p. 6). Moreover, they acknowledged that the change in the nature of the conflict, by counter-insurgency legislation and “global war on terror”, impacted the possibility of the international community to mitigate to the situation. The lack of response severely affected the EDPs. Similarly, Lindley and Haslie (2011) suggested that the second major, yet intersecting cause, was the direct threat posed by political violence in southern Somalia. The shifting frontline and clash between the military actors, coupled with ongoing shelling of civilian areas, caused movement of people in their search of safety (p. 10). Also, Ginnetti and Franck (2014) demonstrated that the conflict directly influenced the displacements of pastoralists. Accordingly, they found that the conflict indirectly influenced the displacements of the EDPs as a result of a lack of access to resource-rich land areas, livestock marketing and mortality (p. 17). In terms of the drought, FSNAU (2011) reported conflicts over resources, which caused livestock raiding and displacements in pastoralists areas (p. 20).

In the context of this research, the studies imply that climatic conditions have the potential to affect the political driver through causing resource-based conflicts. The drought declined available ecological services and hampered crop-production, which caused tension and more competition over remaining resources to those relying on them. However, more prominent

within the literature seems to be a focus on how the conflict isolated set changed the adaptive capacity of the pastoralists.

In addition to being a proximate driver, Maxwell (2012) suggested that war and political conditions, such as insecurity, a challenging humanitarian space, and restrictions from Al-Shabaab, were all “complicating” factors worsening the situation. The Foresight report (2011) recognizes conflict as one of the contributors to vulnerability and this is particular evident in “poor and high-risk environment”, including drylands (p. 73). It is the second major source of vulnerability among Somali pastoralists (Devereux, 2006). Moreover, Devereux (2006) noted that activities from government agents often exacerbate the vulnerabilities of the Somali people (p. 15). Policies of Al-Shabaab and restricted humanitarian space were not only two “complicating” factors, but also among four “key drivers” of the displacement-crisis (Hillbruner & Moloney, 2012).

Despite timely and accurate warnings of the 2010/2011 Drought, preventative measures were ineffective and there was a slow response, in terms of funding, from the international community. This severely affected the EDPs ability to remain in Somalia (Hillbruner & Moloney, 2012). Haan et al. (2012) argued that restricted access and insecurity caused a crisis that was “managed remotely”, referring to a delay in national and international response. They suggested that inaccurate early warning information, inappropriate policies, and late food-aid delivery were all major drivers of the crisis (p. 77). Holding a focus on the lack of action from the international community, Haan et al. (2012) emphasised how the crisis could have been prevented if the response was adequate. Instead of waiting till the FSNAU declared a famine, the response should have been scaled up parallel to the drought and conditions getting worse. With a minimalist approach, the study by Seal and Bailey (2013) provide useful insights of the humanitarian space and areas in need of improvement. While criticising the notion of “drought displacement”, they argued that the drivers of the mass-displacement were multicausal, but a “key factor” was the politics (p. 3). Despite recognizing other causes, such as the use of anti-terrorism legislation, an increase in food prices, and “other long-standing, structural factors”, they found that the crisis was predominantly caused by “multiple acts of politically motivated omissions and commissions” (p. 4). Thus, lack of effective and timely action from both the international humanitarian space and national authorities were partially to blame. In this sense, five reasons were identified for the inadequate response; 1.) the lack of presence for the humanitarian aid, 2.) their inability to access the population in areas (particularly in south), 3.) absence of adequate funding, 4.) the

lack of operational capacity to provide sufficient services for those in need, and 5.) absence of legal protection for their operation. Seal and Bailey (2013) does not mention drought or other environmental conditions as factors that prompted the crisis, rather blames the situation solely on the insecure political situation. By the same token, Slim (2012) investigated the effectiveness of the humanitarian response as a cause of the crisis. By personal observations and interviews, he found that the failed response was due to poor quality of state governance. Moreover, he suggested that proper and good-quality national safety-program, in terms of climate policies, could have contributed to prevent the crises if they adequately included pastoralists areas (p. 15). The lack of protection of livelihood production left pastoralists without any water- and livestock security and a buffer that would have secured them when the drought hit.

In the context of this study, these interpretations of causalities connect political forces and a lack of humanitarian aid to displacement. Clearly, the contested political condition seems to be highly relevant during the 2010/2011 Drought. Moreover, they suggest that inadequate disaster risk-management and poor climate politics impeded providing rural pastoralists fundamental assistance during the drought. The unstable and insecure landscape did not only cause a delay in internal social network, as revealed above, but external international responses were also negatively influenced.

In terms of the restrictions of Al-Shabaab and their imposed taxes, Seal and Bailey (2013) noted that these amplified the nations' food insecurity. As the taxation methods distributed ability to trade, they affected access to markets and importation of food. The hindering of livestock trading and restricted access to resource-rich land areas, deprived the pastoralists crucial access to crops and water resources, to which their livestock responded by higher death rates. Impeding available pasture is negatively influencing the vulnerability of the pastoralists and disturbing patterns of displacement (Ginnetti & Franck, 2014). Fewer livestock and a decline in the herd size of the pastoralists put constraints on their ability to maintain an income. Hence, the policies did not influence the environmental condition, but restricted access influenced the ability to cope with the climatic factors and to continue pastoralism. Accordingly, the movement restrictions of Al-Shabaab lowered the quality of crop production data in areas hardest hit by the drought. This, coupled with underestimations of the impacts of their taxation and exclusion of clan-dynamics, weakened the food security analysis among the poorer households (Hillbruner & Moloney, 2012; Majid & McDowell, 2012). A better access to those areas could have strengthened the ability to triangulate the

data which again limited the effectiveness of early warnings of the crisis. Hence, the warnings could have provided more adequate response from the international community and assistance to the pastoralists.

As well as hindering food assistance from the international community, the restrictions of Al-Shabaab deprived the countries' ability to produce cereal. Consequently, the country experienced an increase in local food prices which was unfortunate in combination with the high global prices (Maxwell & Fitzpatrick, 2012). It implies that the food insecurity, which was partially what the EDPs fled from, were caused also by political processes, in addition to drought. Their analysis reflects an intertwined relationship between human made processes and non-human made conditions, and how it may unfold in different ways.

The absence of food aid agencies and restrictions from Western donors during the drought, were also factors "complicating" the situation (Maxwell & Fitzpatrick, 2012). Al-Shabaab's blocking of humanitarian aid to remote areas in south, limited the ability of people to enjoy emergency assistance and impeded neutral response from humanitarian space in favour of marginalized clans (Haan et al., 2012). Lindley (2013) noted that the humanitarian regime is essential for the EDPs and a driver to limit the insecurity they fled from (p. 305). In this sense, Western donors were widely criticised for being the cause of the slow humanitarian response during the drought (Maxwell & Fitzpatrick, 2012). Their restrictions, coupled with other counter-terrorism laws and Al-Shabaab's policies, limited the extent of available funding and food aid. Clearly, such financial resources are critical for a country like Somalia, particularly during harsh conditions. Maxwell et al. (2012) acknowledged that these restrictions and slow response from donors "compounded" the situation (p. 9). Nevertheless, as the demand for funding did not seem to increase, rather decrease, during the 2011 drought, they seem to mostly blame the policies of national authorities for allowing the situation to get out of hand. If there had been more funding requests, Al-Shabaab would maybe not have allowed activities in areas that were under their control (p. 10). Maxwell et al (2012) put a lot of emphasis on the effects from the long-time civil war in Somalia. The lack of a strong and central government caused implications when pastoralists were restricted to use traditional coping-mechanism or to receive necessary assistance. Hillbruner and Moloney (2012) noted a "normalisation of crisis", which is characterized with an acceptance of higher level of vulnerability and first described by Bradbury (1998), was partly reasons for the long international response. Meaning that the repeated food insecurity within Somalia made decision-makers being used to the situation. The failed rain and high levels of malnutrition

were in other words nothing from the usual, and the situation did not seem much different than a “typical dry year” in the Horn of Africa (p. 25). Food security maps were misleading and did not reflect the actual situation. Thus, it negatively impacted the effectiveness of the early warnings and emergency action.

A study conducted by Lindley and Haslie (2011) between April and June 2011 investigated the relationship between the ongoing conflict, patterns of governance and the displacements during the crisis. With a “bottom-up” perspectives from the displaced, they interviewed EDPs in Kenya and Somaliland. Among the key features of the situation that the participants highlighted, were new and multiple displacements. They argued that the intensification of the conflict and rapidly changing frontlines. The EDPs would cross borders to Kenya in search of safety, to access emergency assistance. Another feature that was noted by the interviewees, was that previous coping strategies were inadequate. It was suggested that this was partially due to the restrictions and delay in international aid, an assistance many EDPs had previously relied on during crisis (p. 11).

In the context of this study, the above-mentioned studies illustrate how the war and governance of Al-Shabaab compounded climatic conditions and causing difficulties of the EDPs’ ability to remain in place. They suggest that there is a dynamic between unequal power relations, post-event measures and displacements. Although the policies of Al-Shabaab aimed to benefit the population in south, they seemed to mostly increase their vulnerabilities. In various ways, their restricted policies deprived them of the ability to cope with, respond to and adapt to the drought. This may explain why areas under their control, those were worst affected by the crisis. In a time where agricultural production was declining and food-resource already scarce, the absence of food aid obviously deteriorated the situation. Along with people being deprived access to adequate food, their vulnerability increased. The deprivation of necessary basic services, by Al-Shabaab policies and political marginalization, had dire effects of the ability to cope in combination with environmental stress. The long term unstable political environment further limited peoples’ accountability on a national support. On that account, the studies shed light on one of the ways political governance has the potential to influence a refuge border-cross to Kenya. Accordingly, they reflect the connection between political management of a natural hazard, both internationally and national, and to environmentally induced displacement. Effective and adequate preventive measures are essential during a drought to response to the existing vulnerabilities in the

country, and in absence of such policies may prohibit the EDPs to remain in place. Thus, the vulnerabilities of the pastoralists were partially developing from structural factors.

The studies illustrate that there is a relationship between state fragility, human-induced factors, and environmentally induced displacement. As a result of the contested and insecure area without any national nor international assistance, the EDPs suffered from a lack of protection. It becomes evident that the lack of a well-functioning institution and legitimate authority to protect and assist its population, are relevant factors within the displacement-process. They reveal that failed humanitarian aid and restrictions posed by key instances in the country during the drought, contribute to mass-displacement. Humanitarian assistance are often needed in cases of mass migration coupled with environmental hazard (Black, Bennett, Thomas, & Beddington, 2011). The case of Somalia is no exception. Al-Shabaab's blocking of humanitarian space lowered the EDPs adaptive capacity by depriving access to necessary basic resources. Such hindering of food provision and safe passage for aid workers will likely reinforce the vulnerability of the EDP (Wisner et al., 2004, p. 144). Like Haan et al. (2012) implicit suggested; climatic shocks go hand in hand with political shocks, therefore, providing humanitarian aid in disasters is crucial in times of hazards.

Another aspect that can be drawn from the studies, is the relevance of a polarized political situation and how conflict are likely to impact peoples' adaptive capacity. The war caused instability, making pastoralists less resilience to tackle the harsh environmental condition. Their cross-border flight was not solely caused by the late Deyr rainfall nor unavailable pasture access, but in combination with insecurity where socio-economically differentiations unfolded. Media has labelled it as a "drought" displacement, which gives an indication that the environmentally induced displacement was solely caused by the drought itself. Nevertheless, although the lack of rainfall obviously made pastoralism tough, the evidence reveal that the harsh conditions the EDPs were fleeing from, were evoked by a range of factors. The threshold was crossed in a combination of these, and the environmental condition was only a contributing factor, or a tipping point, making pastoralism unsustainable.

## 5.2 Bangladesh - Causes for the Displacement

In the same way as the Somali pastoralists, the fishermen in Bangladesh faced a similar situation in the aftermath of the two cyclones, when their previous way of living became infeasible and forced them to leave their place of origin. The Bangladeshi EDPs left their homes immediately as a temporal measure to recover from the damage of the cyclones. Most of them returned to their villages, whilst some, particularly farmers and fishermen, did not return, both in the aftermath of Cyclone Sidr and Cyclone Aila. Who leaves and what make people not want to return to a place, depends upon the environment and underlying political, social and economic conditions (Foresight, 2011, p. 44). When examining the drivers of the displacements, there were more empirical evidence available in this case, in contrast to the case of Somalia. Research suggest that following environmental hazards, Bangladeshi people are likely to be uprooted from their traditional place of origin on a permanent basis, due to a lack of income as a result of loss of crops and other essential assets (Islam & Hasan, 2016; Poncelet et al., 2010; Saha, 2017). Pre-existing vulnerability-factors triggered the movement, such as environmental issues (Shameem et al., 2014), low socio-economic background (Islam, 2013) and insufficient political act (Hossain & Paul, 2018), among others. Some of the factors of what made the livelihood of farmers and fishermen unsustainable will be examined below.

### 5.2.1 Environmental

Saha (2017) investigated reasons why households became displaced as a unit following Cyclone Aila from one of the most affected regions, Khulna District. Among her 32 respondents, 27 of them listed destruction of houses and shrimp ponds as a “push” factor for fleeing. These were followed by other environmental issues, like food-shortage (17 respondents), lack of or submerged of agriculture land (10 respondents) and water scarcity (8 respondents) (p. 516). This type of movement of the EDP following the cyclones were allocated by immediate survival and the lack of choice (p. 522). Similarly, Islam and Hasan (2016) investigated Cyclone Aila affected EDPs in Khulna District, and found that a lack of housing and loss of physical resources were among the stresses that they were fleeing from. The majority (54 %) of the respondents mentioned that the “prime cause” for fleeing was

damage of cultivable land and homestead, followed by a lack of working opportunities (37 %) and a damage of houses (13 %) (p. 1061).

In context of this study, the findings suggest that the losses people suffered from in the aftermath of the cyclones, had direct impact on the displacement-process. Environmental damage influenced the ability to cope with the cyclones, such as a decrease in available safe water, the damage of houses and infrastructure, and ruining of livelihoods. The saline water intrusion severely affected income opportunities at the time and in the future. Water supplies, which were limited even prior to cyclones, became even more scarce by the saline water intrusion in ponds. Accordingly, it deprived the possibility for agricultural and fishing production. By a result, communities struggled to maintain their livelihood and a potential economic recovery and income. Relevant in this context, is to explore the root causes of the displacements, the underlying factors that exacerbated the vulnerabilities of the EDPs and made it difficult to regenerate an income.

Pre-existing environmental conditions were influencing the displacement-process. In terms of the built environment, referring to infrastructure and houses, Kartiki (2011) argued that the EDPs were physical vulnerable and badly affected by the impacts from Cyclone Aila because they were settled on embankments along the delta river in houses made from clay. After experiencing infrastructural damage from the Cyclones and salinity intrusion, her respondents were afraid to move back in case a new cyclone would appear. Also, slower environmental changes in the coastal area contributed to increase the vulnerabilities of the EDPs (Shameem et al., 2014). In an empirical research, Shameem et al. (2014) identified key climatic stressors and their interactions, along the coastal Bangladesh based on fishing and shrimp aquaculture. They pointed out that the three ecological changes; cyclonic storm surge, a change in land use (from agriculture to shrimp farming), and an increase of salinity intrusion, affected access to income. The stresses influenced directly, through damaging physical capital and infrastructure, and indirectly through changes in ecosystem services, causing food and water insecurity and increased inequality in land ownership. Even social capital and networks were recognized to be affected by environmental issues, by causing conflicts and land-grabbing practice (p. 85). Thus, the study clearly illustrates ways in which climate change is likely to affect all the five drivers of displacement (Foresight, 2011).

This physical vulnerability impacted the displacements, and Poncelet et al. (2010) suggested that environmental stress, such as soil degradation, overfishing and coastal erosion, partially

determined whether people came back or remained displaced in the aftermath of Cyclone Sidr. They found that among the reasons for fleeing, were unavailable croplands and poor livelihood conditions. After Cyclone Sidr destroyed their occupation, land degradation made it difficult to create new ways of making money (p. 218). Along similar lines, Kartiki (2011) found that climate change and increased environment stress along the coastal Bangladesh, were additional burden on the EDPs resources. Although environmental factors were “aggravating existing problems”, she recognized the relevance of other forces as well (p. 28). An increase of the population limited available land-areas in the agricultural sector, and as such, the saline water intrusion from the broken embankments was putting an additional constraint on available resources.

In terms of this study, the surveys shed light on the role of environmental conditions in environmentally induced displacement. Long-term climate change and poor environmental conditions amplified the physical stress that the cyclones caused by decreasing available productive ecosystem services and the ability to regenerate productive land areas. Along with the worsening of the environmental condition, people were more likely to remain displaced. Thus, the natural system and a change in the ecology are part of shaping the livelihood vulnerability of rural communities (Foresight, 2011). The infrastructure had slowly been weakened in response to environmental stress. Thus, the environmental driver, including climate change, acts as a “push” factor in the process of displacement, in combination with more traditional socio-economic drivers.

### 5.2.2 Socio-Economic

The socio-economic status of those displaced was relevant in terms of who remained displaced in the coastal area. Like the drought displacement in Somalia, the majority of the EDPs in Bangladesh were poor and landless, both those affected by Cyclone Sidr (Poncelet et al., 2010), as well as by Cyclone Aila (Mallick et al, 2017, ). Findings suggested that those worst affected by the cyclones were the fishermen and farmers because of a lack of safety equipment and limited alternative income opportunities in the aftermath (Saha, 2015). In the survey conducted by Saha (2015) of vulnerability-factors within the coastal communities, it was noted that the damage of working opportunities exacerbated an already scarce economic capacity, and as such resulted in “forced migration” (p. 740). Mallick et al. (2017) studied communities’ socio-economic condition within the coastal region among communities both

affected by Cyclone Sidr and Cyclone Aila. They found that the high-income groups were less likely to become EDPs, compared to the lower income groups. In their survey of 1555 households from 45 villages affected by both cyclones, 81 % of those displaced had a pre-event monthly income of less than US\$60, whereas those who earned more than US\$60 had a migration rate of 18 % (p. 9). The study by Islam and Hasan (2016) showed that about 80 % of the EDPs were from poor or extreme poor backgrounds. And most of the respondents of Saha (2017) were day labour with low socio-economic status, with two thirds of them having an income of less than US\$ 80. In her survey, all but one of the displaced households did not have money to rebuild their homes. The combination of destroyed houses and no or reduced income, appeared to be their main reason for being forced to migrate (p. 517). Finally, Kartiki (2011) found that the shrimp-farming loans caused an additional pressure on the EDP, making them more vulnerable, as they were forced to seek alternative ways to repay the loans along with their livelihood being damaged. Hence, the lack of economic security forced households to move as the damage from the cyclones slowed down the post-event recovery (p. 30). On the other side, only three of the respondents in the survey by Saha (2017) identified repayment of loans to their relatives as a stress-factor. Such indicates that economic pressure may contribute in the displacement-process in various ways.

As a part of the EACH—FOR project, Poncelet et al. (2010) studied environmentally induced displacement in the aftermath of Cyclone Sidr and found that the main reasons for fleeing on a permanent basis, were inadequate income and employment issues. Those fishermen who did not have job opportunities back home because of damage from the cyclone, were likely to stay at the new place as long as they had a job there (p. 217). Similarly, Saha (2017) found that the main reason for migrating was no or reduced income after Cyclone Aila, followed by environmental stress on fishing on farm labour. Those who would return to their villages would only do so if there were work-opportunities back home (p.516). Relevant “push” factors were food and water shortages, submergence of land, and lack of landownership, whilst a common “pull” factor for all was work-opportunity. Along the same line, Mallick et al (2014) explored the causes of population displacement in the aftermath of Cyclone Aila from 12 villages in southwest coastal Bangladesh. They suggested that the displacements were a response of the search of alternative income. The poorest respondents, those who were totally depending on daily income through labour, left right away in the aftermath of the cyclone due to the damage it caused. The lower middle class EDPs, on the other hand, first left after a couple of days, when their adaptive capacity were overwhelmed by the impacts

from the cyclone (p. 208). Holding a socioeconomic focus, Kartiki (2011) observed the movement of people in the aftermath of Cyclone Aila from five villages in the coastal zone, and conducted interviews from households with recent history of migration. Her study revealed that people were predominantly uprooted by economic reasons, the absence of access to “profitable” form of livelihood. (p. 29). The EDPs became permanently displaced if they could not survive on the received wages in the villages nor had access to any profitable form of income. Although the casual point was land-damage in the survey by Islam and Hasan (2016), almost all the respondents mentioned work opportunities and income as a dominant reason for moving.

The studies signify the intertwined correlation between the economic and environmental driver in the process of displacement, and that environmental stress is likely to influence the occupation of people. What becomes clear is that the loss of land by the saline water intrusion by the cyclones were highly related to and impeded income opportunities. This was particularly evident for the farmers and fishermen along the coast. Hence, the environmental damage from the cyclones played a significant role in the displacement-process. Directly, they caused environmental stress and “pushed” people to flee, and indirectly, though economic reasons, contributed by “pulling” toward more desiring locations. Thus, there is a clear link between a lack of economic resources and environmentally induced displacement. The poorer communities were in a weaker position to recover from the damage and the absence of an financial buffer deprived them of the ability to re-generate the occupation.

In terms of social support, Saha (2015) found that in most cases, households did not migrate as a unit, rather there was an out-migration of one or two family members to work and seek an income. Consequently, the remaining household were still as ecological vulnerable as before the cyclone. Such adaptation was, though, not the case for households who migrated as the last resort, becoming displaced. Accordingly, she noted that the EDPs were more physical vulnerable of becoming displaced due to the weakened strength of their social networks (p. 742). By the same token, Kartiki (2011) reported that those respondents who lacked social and financial capital, were less likely to consider migration as an option due to the costs involved. The other way round; social capital would be a displacement-driver in the case of long-distance voluntary migration. The EDPs moved because they were “compelled” to (p. 31).

What can be drawn from these studies it that the lack of remittance and social support deprived the adaptive capacity of the farmers and fishermen to remain at their place of origin following the destructions from the cyclones. Without network to rely on, the lack of social cohesion and togetherness impeded crucial information and assistance. Furthermore, the low socioeconomic status of the fishing communities were found to play a significant role in pre- and post-events measures taken by the government (Hossain & Paul, 2018; Mallick et al., 2017).

### 5.2.3 Political

The act from the government negatively influenced the adaptive capacity of the fishing communities in the aftermath of the cyclones. Alongside a fall of income, their dependency on financial assistance, external relief and alternative income sources increased (Saha, 2015). Hossain and Paul (2018) investigated vulnerability factors and the role of effectiveness of disaster management in two villages which had both been severely affected by Cyclone Aila. Pre-disaster mitigation measures taken from the government were found to be insufficient and played a “significant role” to lessen the impacts of the hazard (p. 55). Important factors were difficult access to and inadequate conditions of cyclone shelters, lack of access to weather forecast, insufficient interpretation of evacuation orders, and lack of participation in disaster training. Later Mallick et al (2017) found that the combination of cyclone shelters being located further away from the rural communities and the exposed population being from the deprived class, these groups had less access to cyclone-shelters, compared to the social supreme class. Although the majority of the respondents received early warnings, only one third among them were able to understand and interpret the messages. As a result, most EDPs were not able to take necessary preparing measures, such as tying up roofs (p. 11). The short warning time had implication for the ability of people to respond to it and leave ahead of time. These were factors that all made rural communities more susceptible to the impacts of the cyclones.

The studies showed that a main cause for such noncompliance with Cyclone Sidr evacuation order, was a lack of trust in cyclone warnings. Paul (2012) suggested that the absence of education among the affected groups explain why only one third of his respondents complied with the warnings. Those who were more educated, evacuated. Moreover, the government of

Bangladesh had built refugee-shelters strategic closer to those with higher socio-economic status, which inhibited poorer coastal residents from responding properly to orders. Kartiki (2011) reported that the limited amount of available cyclone shelters and inadequate sanitation facilities, appeared to be a concern among the EDPs, and as such impeded later return (p. 35). Nadiruzzaman and Paul (2013) noted that the “Build Back Better” approach was absent in the national housing programs in the aftermath of Cyclones Sidr, which later showed to have implications for the resistance of infrastructure. The houses of community of study were not able to withstand the much weaker Cyclone Aila. They argued that along with the housing program being in control of the local elites, and the requirement for housing scheme was to purchase a small piece of land, the prices were higher than the market price (p. 173). Accordingly, the houses of the affected people were highly exposed to cyclones as they were located closer to the coastal area than recommended (Mallick et al., 2017, p. 10). By the same token, Saha (2017) found that the late reconstruction of embankments limited the protection quality of agriculture land and the ability to regain crop production. Accordingly, poor housing conditions were identified as a cause of livelihood stress among her respondents (p. 521). Also Kartiki (2011) established that the governmental negligence of upkeeping the embankments appeared as a major concern for her respondents and as such impeded return (p. 35).

In terms of this study, these surveys portray some relevant aspects of the socio-economic status of fishing communities and relevant pre-existing issues by governmental policies. They reveal that inadequate housing program, lack of education, location of cyclone shelters and late reconstruction of infrastructure made the fishing communities physical vulnerable when the cyclones struck. If the above-mentioned conditions had been properly addressed by national authorities before the cyclones made landfall, less people may have been severely affected. In this sense, there is a connection between socio-economic status, poor infrastructures, and political disaster mitigation practice. The majority of the EDPs were both spatially vulnerable and socio-economic vulnerable. Spatially because of the space and strategic location: the fishermen were living in places where the government did not properly maintain infrastructure to withstand cyclones, like houses, embankments, or evacuation shelters. And socio-economic; by being poor, less- or non-educated, and lacking an income buffer. Alternative employment opportunities remained limited as the EDPs were located along embankments and marginal lands. Clearly, both pre-existing issues and governmental activities pre-event play a role in the displacement-process. Although the cyclones with the

flooding was the initial cause of displacement, political issues caused livelihood stress in which the displaced communities failed to cope with.

Along the same line, also post-cyclone conditions seem to influence the vulnerabilities of the EDPs in particular ways, referring to assisting activities in the aftermath of the cyclones to help recover from the damage. The lack of social support can again be linked to insecurity, which are found to be a influencing factor in the displacement-process (Islam & Hasan, 2016). Islam and Hasan (2016) explored the links between permanent displacement and the access to local public services for those EDPs' who had taken shelters in the aftermath of the cyclones. They suggested that those who did not have access to basic services, suffered from insecurity of livelihood and life. Along with the absence of these, the possibilities to recover from and regenerate an income remained limited. Hence, they were likely to become permanent displaced.

Mallick et al. (2017) suggested that a lack of access to community services, including unavailable loans, are crucial means of the ability to restore livelihood in the absence of any alternatives. In their survey, their respondents believed that almost all the relief goods provided by international and governmental institutions in the aftermath of the cyclones, were mismanaged and unevenly distributed. In this regard, Hossain et al. (2018) found that two thirds of their EDP respondents suffered from a lack of financial support from the governmental assistance (p. 63). Similarly, most of the households in the survey by Saha (2017) were forced to flee when there was a stop or a decrease in the relief activities that actually did happen in the absence of work opportunities (p. 520). Her respondents did also report unjust distribution of resources for rebuilding and rehabilitation and material goods from disaster management training and rehabilitation programs (2015 p. 742). On that account, the reconstruction-activities in the aftermath of the cyclones were highly locally politicised, and as such the "social supreme" blocked access to underprivileged groups in the community and manipulated the development (Mallick & Vogt, 2014). As a result of these inadequate post-disaster measures, the social support in terms of waning mutual trust, was undermined leaving people more vulnerable and at risk. This trend has been referred to as a disaster maximizes "exclusion" for original community, and pressure for "inclusion" to new community, referring to the societal changes that occur due to displacement (Islam & Hasan, 2016; Mallick & Vogt, 2014).

The findings illustrate a strong link between political assistance, social support and displacement. They recognize ways in which external support from national or international forces following a natural disaster are crucial of the ability to cope with the impacts. Emergency support was essential for the capacity to maintain a livelihood, but when it ended, economic pressure forced movement of people. What becomes clear here is ways in which lack of political support, corruption of relief distribution, economic pressure and environmental stress are interlinked. Coupled together it becomes difficult to sustain livelihood (Foresight, 2011). Such findings correlates well with what Mallick and Vogt (2014) and Saha (2015) noted being the main factors in household vulnerabilities; community support, individual capacity and lastly, economic resources (p. 209). The surveys further imply that a limited access to available public services and inability to receive assistance, hinder marginalized communities to adopt disaster preparedness measures which may exacerbates the vulnerability and causing livelihood insecurity.

Furthermore, the access was found to be determined by political forces which were based upon the EDPs socio-economic status. Hence, the link between power relations within local elites and rural communities in Bangladesh becomes evident, and the significance of power networks in relief and displacement. While local elites influenced disaster mitigation planning, marginalized communities became more vulnerable as they were deprived essential services and resources from national authorities. Thus, political power and systems contributed to deprive communities' adaptation capacity, causing stresses that the displaced communities failed to cope with. The livelihood of the farmers and fishermen were no longer feasible due to a function of the revealed underlying conditions, and their threshold was crossed when normal migration-strategies of temporary labour migration, became inadequate.

## 5.3 Comparative Analysis

### 5.3.1 Environmental

The natural hazard played a role in the environmentally induced displacement process, both directly and indirectly. Facing that the drought slowly impacted the pastoralists' well-being and livelihood, the cyclones, on the other side, instantly caused mass-displacements and

appeared more prominent in Bangladesh. Hence, the role of the hazard was somewhat divergent depending on whether it was a slow- or rapid onset event.

Pre-existing conditions and ecological vulnerabilities deprive the adaptive capacity of the EDPs to cope with the natural hazards and its effects. This was found evident in both cases. Despite different ecological zones, both groups of EDPs were located within areas where impacts of hazards put more pressure on their vulnerable livelihood condition. In Bangladesh, the fishing communities were settled along low-lying coastal zone, an area subject to flooding, cyclones, and erosion effects, and exposed to degradation of coastal and marine ecosystems. In Somalia, the lack of rainfall in the dryland area gradually declined the available ecosystem services necessary to produce crops and continue livestock rearing. Environmental change, like land degradation, negatively affected available water and ecosystem services, thus, reducing the reliability and productivity of pastoralism. Clearly, and in line with the findings in Foresight (2011) their vulnerability increased alongside their place of location especially exposed to impacts of climate change.

The data and interpretations of causalities suggests that the natural environment and the provision of ecosystem services do play an important role in the process of environmentally induced displacement. Not surprisingly, their impacts become particularly significant within natural resource-dependent livelihoods, such as fishing, farming, and pastoralism. In both Somalia and Bangladesh, the inability to sustain an income was a dominant cause in the displacement-process as both the drought and cyclones devastated ecosystem services vital for their livelihoods. Both groups had their threshold crossed, and as such, their usual income becoming unsustainable alongside environmental disruption jeopardized an already scarce ecological condition. When the environmental hazards deprived the access to, the stability of and availability of ecological services, those groups who relied on them was heavily affected.

The finding of this study implies that a change in ecosystem services, both through slow- and rapid onset events, influences the displacement-process in terms of affecting the well-being of people and their ability to meet needs and aspirations. In a study on mobility in the forest region of Cameroon, there was found a direct link between a decline in ecological services and an increase of the population movement. The determining factor was the extent of access to extract timber and forest (Ruitenbeek, 1996). Similarly, Kartiki (2011) noted that alongside experiencing frequent environmental stress, people are likely to leave their place of origin, despite being provided external and internal support (p. 33). In the same way, McLeman and

Smit (2006) found that during the economic depression in Oklahoma in the 1930s, the limited ability of people to earn wages had an impact on the movement of people. As the main economic source was cotton farming for most people, the production failure led to scarce money. Consequently, the tenant farmers, relying on a good harvest for their livelihood, were obliged to flee their place of origin. Due to immigration restrictions in California on Mexicans immigrants, the labour shortages “pulled” Oklahomans there (p. 44). Lastly, Henry et al. (2004) illustrated how drought in the drylands of the Sahel region may cause environmental issues to the rural population that are depending on pastoralism. Their study revealed that people from drier areas were more likely to move from their place of origin, compared to those coming from wetter areas. Supporting the findings of this study, they found that poor rainfall directly forced people to flee short-term, and indirectly depressed their socio-economic situation. Their survey were later refined within Black et al. (2011)’s conceptual framework by De Longueville, Zhu, and Henry (2019). These findings suggest that EDPs are forced to leave their traditional habitat when environmental disruption jeopardized the existence of natural resources that severely affect their quality of life and occupation. Even though the environmental factor has previously not been considered as a dominant driver in the process of environmentally induced displacement, it seems to be an emerging recognition of its potential role (Foresight, 2011, p.48).

On the other hand, one should bear in mind that these findings may only have limited of relevance and are contextual in terms of country and regions. In both Somalia and Bangladesh, the close connection between ecological-dependent livelihoods and vulnerability to natural hazards becomes particularly evident. In these less developed countries, the income of households and their subsistence, are usually closely linked to agriculture and land productivity. A financial buffer may be absent as well. Contrary, high income countries tend to diversify their income sources with the purpose of minimizing risks in vulnerable areas, for instance by adapting new crops or off-farm labour. Thus, people become less dependent on ecological services and less exposed of impacts of climate changes. The poorer households, on the other hand, are usually unable to adopt diversification strategies as they face liquidity or other constraints that other better off households do not face (Maxwell et al., 2015, p. 6). From this point of view, the role of the natural environment as driver of environmentally induced displacement can be argued to play a different and varying role depending on the place. Ergo, to what extent climatic changes affect the economic driver is sector and place specific (Foresight, 2011).

Another aspect relevant to discuss when it comes to the environment as a driver of displacement, is the role of pre-existing environmental issues. In both Somalia and Bangladesh, environmental degradation reduced available income opportunities to the EDPs. Accordingly, demographic stress and population growth, particularly evident in coastal Bangladesh, pressured the exploitation and available natural resources, which complicated the ability to control such land degradation. The conditions of infrastructure, such as houses, roads, and shelters, influenced to what extent people were at risk pre-event, and post-event in terms of their ability to cope with the following effect. Such becomes particular evident in the case of rapid-onset events like cyclones. In these events the damage and following effects are highly connected to the level of hazard-resilient infrastructure. Unlike in Somalia, poorly constructed houses, cyclone shelters and the weak condition of embankments made the fishing communities in Bangladesh more physical vulnerable when the cyclones struck, as well as depriving opportunities to regenerate fishing-activities. The finding suggests that in places with poor infrastructure not well-equipped to cope with devastating cyclones, the damage becomes more severe and impede affected people to return home after being displaced. Hence, the lack of basic infrastructure increases the exposure to hazards. To support this view it is relevant to point to Tacoli et al. (2015). Bearing in mind that she refers to the urban poor, she argued that the lack of access to adequate housing, services and infrastructure increases the vulnerabilities of events in lower-income countries, both environmental and socioeconomic. The recognition of infrastructure as an essential factor of vulnerabilities is further acknowledged in the Sendai Framework for Disaster Risk Reduction 2015-2030. Among the seven global goals, Target D aims to “*Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030*” (2015). Though being aware of the term of critical infrastructure refers to interrelated systems like energy, water and transportation, and not necessarily and solely individual houses. In the case of Bangladesh, such improved infrastructure is argued to be an particular important mean to prevent future environmentally induced displacements (Mallick, Rahaman, & Vogt, 2011). As both groups of EDP rely on the environment for income, climatic factors like hazards and the built environment like infrastructure, clearly influence socio-economic conditions (Foresight, 2011). Henry et al. (2004) suggested that long-term displacement seem to be less related to environmental conditions than short-term movement (p. 455). It implies that other factors may also give rise to displacement.

### 5.3.2 Socio-Economic

The cases of Somalia and Bangladesh illustrate how the natural hazards indirectly prompt displacement through the economic driver, by reducing agricultural productivity and ability of rural communities to maintain and regenerate their occupation. The drought progressively weakened the pastoralists' ability to continue livestock rearing with a decline of available crops and water ponds. Similarly, although the cyclones in Bangladesh with the following flooding was the initial cause of the displacement, the threshold of the fishermen to not return can be traced back to both economic (lack of income) and political reasons (insufficient disaster management). When crucial assets are being deprived, money becomes scarce, and people are forced to seek alternatives. This finding correlates well with empirical suggestions of environmental change as likely to influence the economic driver the most in comparison to the other four drivers (Foresight, 2011, p. 52).

Not everyone suffers equally in disasters, and environmentally induced displacement is partially determined by the socio-economic status of EDPs. In both Somalia and Bangladesh, a lower socio-economic standing reduced the adaptive capacity when the hazard occurred, by being in a weaker position to recover from the following damage. In the absence of an economic buffer, access to and available ecological services became essential to maintain an income. The coping mechanism among certain pastoralists groups (Somali Bantu) in the southern area was affected by restricted access to land, political instability, and historical marginalization among more powerful clans. By the same token, the poorer fishermen in Bangladesh had been strategically placed in areas exposed to risk, owned houses that were less resilient, and received unequal assistance in the aftermath. All of which impeded return and regenerating of fisheries. Obviously, their socio-economic status impeded necessary assistance due to policies of national authorities. The cases contrast, however, in terms of who exercised the marginalization. In Bangladesh, the national government executed insufficient pre- and post- disaster mitigation strategies, whilst the exclusion of certain groups in Somalia occurred between clans.

This study suggests that ecological vulnerability is connected to unequal power structure and marginalization. Thus, it sheds light on which groups and communities that would be more at risk of being displaced than others. To what extent the finding can be generalized within a

broader scope, “outside” if low-income countries, can thus be questioned. However, previous studies suggested the same conclusion within higher-income countries. In the U.S for instance, when Hurricane Katrina struck New Orleans, marginalized groups, who were disproportionately affected, were located in low-lying areas most vulnerable to flooding due to segregation laws (Bullard & Wright, 2009; Jayawardhan, 2017). Similarly, in 1992 when Hurricane Andrew struck southern Florida, the minority of black households were forced to occupy slums or urban war zone and owning poor-quality houses. Therefore, the disproportional damage was linked to their spatially vulnerability (2009, p. 764). On that account, disempowered and poorer groups have fewer resources and less capacity to cope with environmental threats during a hazard. Such may in fact raise climate injustice issues as well, a separate area of discussion.

Another dimension relevant to discuss in relation to the socioeconomic status is the social capital. In both Somalia and Bangladesh, those groups who suffered from the lack of social capital, were less able to withstand the impacts of the crisis, and yet, more likely to become displaced. Nevertheless, the cases contrast in the way the hazard declined their social capital and how the social capital would be helpful. The 2010/11 Drought slowly declined the “second circle” to which assistance from clan homelands by migrating became difficult, whereas in Bangladesh the Cyclones rapidly caused displacements and disconnectedness from previous existed network, which impeded economic assistance.

The findings support the argument that along with the environmental hazards disrupting social structures, peoples’ adaptive capacity decline. Remittances may assist people to adapt to environmental changes, and a lack of this may prompt the threshold to be crossed. The importance of social connection is illustrated by the study of McLeman and Smit (2006). He found that the Eastern Oklahoman were more exposed to impacts of the drought in the absence of any strong local network to assist during the harsh conditions. Those people with extended family tended to remain in place, as they were provided economic assistance, residences and help to obtain short-term credits. Contrary, those who lacked such capital were forced to leave their place of origin (p. 44). Thus, good social standing facilitated the ability to stay in place and improved adaptive capacity. The Foresight Report (2011) also support the view that social capital is a relevant driver. It is stated that social and economic factors are recognized to have the “greatest effect on the volume and patterns” of the movement of people and tend to be cited as dominant drivers by individuals (p. 44). Thus, the findings reveal an interconnection between environmental damage and socio-economic

conditions, and changes in the climate can influence such capital. Clearly, the low socio-economic situation deprived their adaptive capacity to which the threshold of unsustainable livelihood was crossed. Moreover, the findings suggest that it was not only environmental issues nor the socio-economic status of the EDPs that appeared to contribute to the displacements, and political causes proved to be highly relevant. Although the political driver was less influenced by environmental change than the previous mentioned factors, as it usually is (Foresight, 2011), it contributed as an isolated driver in both cases.

### 5.3.3 Political

Finally, environmentally induced displacement is influenced by political conditions in a nation. Good governance in different ways reduces livelihood vulnerability, such as providing safety nets, social protection, and maintaining peace and security. Conversely, the findings support the view that weak and ineffective governance usually exacerbate vulnerability (Foresight, 2011). According to Stern (2007), will the amount of displacements or forced migration depend upon the “level of investment, planning and resources” in a nation by providing access to food aid and public services (p. 129). Activities, such as improving infrastructure, provide social protection and effective disaster mitigation measures, seem to be fundamental of the ability to remain in place during environmental stresses.

The lack of relief from national authorities were a common concern in both cases. Despite different nations with divergent political characteristics, political factors caused insecurity to the livelihoods of the EDPs. In Somalia, the ongoing war, and policies of Al-Shabaab constrained crucial access to resource-rich areas and assistance from humanitarian space. The pastoralists’ limited access to crops and water resources deprived their economy and forced movement further distances. Although the link between conflict and climate change events remain disputed, it is claimed that those communities that are subject to these climate variations are likely to become poorer, which again decrease the coping capacity in times of war and drought (Raleigh, 2011). Such support the assumption that when communities live in chronically vulnerable areas that are featured with political instability, environmental degradation, and destruction of primary livelihood system, environmentally induced displacement becomes more likely (Foresight, 2011).

Along the same way, the marginalized and poorer fishing communities suffered from lack of support from national authorities, in terms of inadequate mitigation measures, pre- and post-event of the cyclones, and poor access to assistance and public services. Stern (2007) argued that public services are crucial to cope with climate change and its effects. However, these may often be poorly provided and have received weak attention in developing nations that suffer from poor governance, including corruption, and inadequate resources (p. 113). Just like in the case of Somalia and Bangladesh. The “bridge” between security and responsibility were insufficient for both exposed groups as the EDPs were deprived essential security in times of inadequate governance.

The cases contrast in ways the political conditions played a role. Unlike in Somalia, there was no violent conflict in Bangladesh that caused instability for the exposed population, rather insufficient policies. Although data reveal that national safety-program in Somalia were insufficient as well, the insecurity in the nation played a more dominant role. On that account, the studies reflect ways in which political vulnerability can play out differently and influence displacement through several pathways (Foresight, 2011). Either it is through war and political instability or national policies. Regardless, the socio-economic status partly determined the extend of national assistance. In times when goods, services and aid are unequal distributed within particularly groups and communities in the country, power relation has the potential to be an underlying driver that affects the ability of a community or social group to meet their basic needs. In this manner, political instability, poor governance and marginalization put constrains on the ability to restore livelihood and attribute to environmentally induced displacement by a lack of access to resources and national assistance. These constraints may neither be environmental nor natural but related to politics and policies. Through this discussion of the various factors that may stress livelihoods, what becomes apparent is that these stressors are highly interlinked, exacerbate the communities’ vulnerabilities, and together deprive adaption capacity, and as such a threshold is crossed.

#### 5.3.4 A Multicausal Phenomena with Different Reasons

There are many “layers” of displacement and this study suggests that environmentally induced displacement is a multicausal phenomenon. It is caused in combination of environmental hazards from (most likely) climate change, ecological vulnerability and non-

environmental factors, such as poor governance, lack of state resources and welfare distributions, and socioeconomic vulnerability. This multicausal relationship holds true in both drylands and low-lying coastal zone, and the causes are further summarized in Figure 4. Some of the drivers were influenced by environmental changes or natural hazards, others were not. In Somalia, the on-going war, breakdown of governance, global high food prices and restricted humanitarian space, coupled with environmental stresses and collapse of social capital caused difficulties to remain in place. Pastoralists flew borders to find available crops to their herds and sought assistance from international agencies as refugees. Like Levine argue: the last straw may have been the failed rained, but it was non-environmental conditions “which broke the camels’ back” (Levine, 2011). In the wider sense, the threshold was crossed in a combination of these conditions and the severe lack of water and enduring drought were only contributing factors or tipping points.

Similarly, the studies from Bangladesh revealed that the permanent displacement was a response of multiple pressures, such as environmental degradation, absence of proper infrastructure, public services, and economic sustainability. However, in contrast to the case of Somalia, featured with war and instability, the prominent factors in the case of Bangladesh were the environmental damage and economic factors. The damage of houses, shrimp farms, and land, were the initial causes of displacement, whilst the farmers and fishermen remained displaced in the absence of unavailable natural resources, landlessness, and a lack of work and income opportunities.

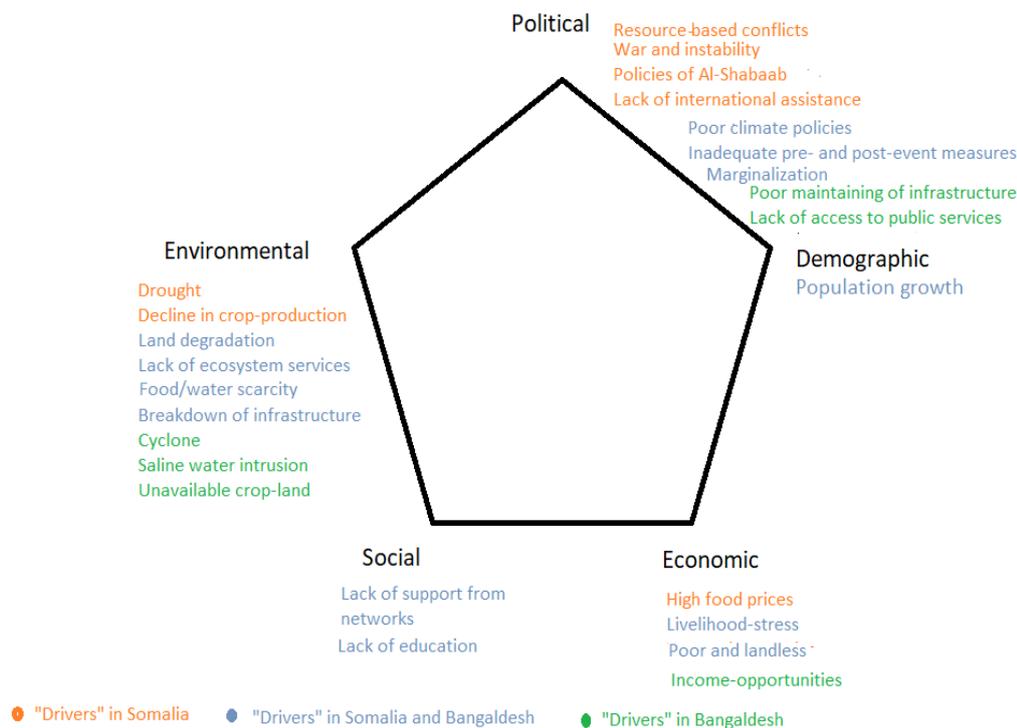


Figure 4: “Drivers of migration” in the case of Somalia and Bangladesh made by the author and based on (Black et al.,2011).

In both cases the lack of a choice prevails as a dominant feature and a common concern of a search of a safe environment in response to an environmental hazard, seeking refuge for survival of lives and livelihood (Betts, 2013). The fishermen and farmers were forced to seek work-opportunities whilst the Somali pastoralists sought safe haven cross-borders to Kenya in response to both political and environmental conditions. On the other side, the dominant reasons for fleeing and to which places, were divergent. Instead of fleeing to urban areas for income opportunities in Bangladesh, the pastoralists crossed international borders when their traditional form of manging rangeland became insufficient and the humanitarian relief were late.

Black et al. (2011)’s conceptual framework holds that the natural event is not a sole cause for the displacement and sees the environmental event as only “one of an assemblage of drivers of migration” (p. 4). The role the natural event itself played in the process of the displacement in these case studies, correlates well with this idea. In similar ways, McLeman and Smit (2006) found in the case of the “Dust Bowl” migration in Oklahoma, that the environmental factor, the prolonged droughts, were a significant cause of the displacements of the farmers.

Nevertheless, their study revealed that to what extent the Oklahomans were vulnerable to the exposure of this natural event was not only determined by the two droughts, but by failed crop-production, the nature of land tenure, and the strength of their social network and wellbeing of family-members.

The findings further reveal that a threshold was reached by the function of underlying vulnerabilities, and as such the EDPs were no longer able to sustain an income and adapt to changes. The concept of McLeman (2018) holds that the adaptive capacity of the exposed people is not static, but determined by current stressors from both environmental as well as human-made factors. In terms of the case studies, the 2010/2011 Drought and the Cyclones both triggered the threshold to be crossed. Clearly, environmental conditions promote displacement. However, their adaptive capacity was changed due to a combination of environmental and structural non-environmental processes which had dire effects on their vulnerability. Survival in marginal climatic circumstances becomes particularly difficult when facing socio-economic and political risks.

## Chapter 6: Conclusion

Although human displacement may be an age-old phenomenon, the reasons why people are uprooted from their place of origin, have changed along with environmental change and globalization. The aim of this study was to shed light on the multi-causal relationship between environmental and non-environmental factors in the process of environmentally induced displacement in times of global climate change and increasing natural hazards. The study reveals ways in which environmental, socio-economic, and political factors influence underlying vulnerabilities in the specific case of Somalia and Bangladesh. Within the several “layers” of displacement, some appear to be more evident than others. Particularly during slow onset hazards, it remains difficult to untangle environmental stress from ongoing economic and political ones. However, in the case of event-driven displacement, the environmental hazard usually emerges as the prominent cause. Even so, the drivers are also interrelated, both human-made and natural.

The study suggests that climatic events clearly played an influential role in forcing pastoralists, fishermen and farmers out of their place of origin. The alarming environmental conditions, in terms of widespread crop-failure due to drought and loss of fishing assets in the aftermath of cyclones, confirm the situation of fragile natural resource-based livelihoods. Directly, the environmental hazard damaged essential ecosystem services, and indirectly, it affected people’s adaptive capacity through an interaction with the other drivers of migration. The displacement-process was influenced by socio-economic conditions, such as loss of social, economic, and productive capital, societal hierarchy, and prevailing powerless position. Those groups with lower socio-economic status faced difficulties to recover from and cope with effects from the hazard due to the ruling of more powerful groups. Also, the political landscape was prominent in terms of war, restricted access to alternative resources and humanitarian relief, and inadequate pre- and post-mitigation measures.

In an ideal world, nations particularly exposed to impacts of climate change would be featured with good governance policies. Addressing political vulnerability by putting it on the agenda seems essential to enhance the resilience and adaptive capacity of people. Sufficient assistance from both the national and international community may limit effects of climatic hazards for rural communities with scarce resources. Welfare distribution, like education programmes for instance, are likely to raise awareness on hazards and early warning systems

for weather conditions. Education further provides opportunity to diversify income, which can enhance adaptation to climate change and the management of its impacts. Improving physical infrastructure and cyclone shelters would strengthen resilience as it provides an opportunity to work or temporarily continue others' work. And by having an income, people may not feel obligated to seek work other places.

This study proposed the multicausality approach in understanding environmentally induced displacement-processes and finding the term "climate refugee" misleading. Accordingly, the impacts from the 2010/2011 Drought and Cyclone Sidr and Cyclone Aila were both related to a "threshold" that was crossed. The natural hazard is from this approach viewed as a "triggering" factors that interplays with non-environmental factors. Together they decrease the adaptive capacity and increase the vulnerabilities of the exposed and marginal population depending on a natural resource-based livelihood. The livelihoods are no longer sustainable due to a malfunction of these vulnerabilities. In line with the conceptual model presented by Black et al. (2011), the "five drivers of migration" were applicable and relevant to understand the interplay and interconnected role in environmentally induced displacement, though under differently conditions in Somalia and Bangladesh. Thus, this study confirms the importance of the relationship between population displacement, vulnerability and climate change related to natural hazards. Given the complex reality of displacement in the context of global warming and an increasing interconnected world, suggests for further research on the area. More context-specific research of the interplay of migration-drivers allows to provide valuable understandings of patterns and evolving trends in displacement.

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