UNDERSTANDING THE RISKS, LINKS AND CONSEQUENCES OF CLIMATIC EVENTS, CONFLICT AND MIGRATION: PERCEPTIONS FROM ASYLUM SEEKERS IN GERMANY

A thesis by publication presented

By

Christina Kohler

Advisor: Professor Marcel Bursztyn

Co-Advisor: Professor Eduardo Viola

To

The Center for Sustainable Development

In partial fulfillment of the requirements for the degree of

Doctor of Philosophy

in the subject of

Sustainable Development

University of Brasília, Brasília, DF, Brazil

July 2019

Thesis declaration

I, Christina Kohler, certify that:

This thesis has been entirely accomplished during enrolment in the degree.

This thesis does not contain material which has been submitted for the award of any other degree or diploma in my name, in any university or other tertiary institution.

No part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Brasília, Brasília, DF, Brazil.

This thesis does not contain any material previously published or written by another person, except where due reference has been made in the text.

The work is not in any way a violation or infringement of any copyright, trademark, patent, or other rights whatsoever of any person.

The approval to commencing the relevant work described in this thesis was obtained prior by Professor Marcel Bursztyn, Professor Carlos Denner dos Santos and Professor Elimar Pinheiro Do Nascimento, the committee of the Center for Sustainable Development of the University of Brasília, Brasília, DF, Brazil, after the Ph.D. qualification exam on November 22, 2016.

Written study participant consent has been received and archived for the research involving participant data reported in this thesis.

Third party editorial assistance was provided in preparation of the thesis by Jacqueline Foelster.

The work described in this thesis was funded by the Brazilian federal agency for support and evaluation of graduate education (Capes).

This thesis contains work prepared for publication, which has been co-authored.

Understanding the risks, links and consequences of climatic events, conflict and migration: Perceptions from asylum seekers in Germany

Abstract

Over the last several decades, climatic events, conflict and migration have – independently and symbiotically – significantly impacted global politics, sparking turmoil among policy makers and garnering attention among academics across all disciplines. The purpose of this study is to advance understanding of the risks, links and consequences of each – climatic events, conflict, and migration – their relationships and aftermath on human, national and international security. In particular, it seeks to provide evidence on migrants' perceived drivers for international migration to Europe and insights about if and how perceived climatic events have influenced people's decision to migrate or conflict, or both.

To this end, existing related scientific literature was scrutinized and complemented with an in-depth empirical study, exploring individual's experiences, perceptions and decisions, of 100 asylum seekers from 17 countries hosted in German facilities. Given climate's unequivocal and unprecedented economic and social burdens on modern populations, the first article of this thesis seeks to increase understanding of how climatic events – such as temperature, droughts, and storms – impact societies and shape social outcomes. It does so by developing an analytical framework that can be applied across countries and allows for a theoretical conceptualization of the ways by which climatic events interact with societies. It emphasizes that there is no mechanic link in the climate-human interaction that causes the same social response across regions and that climate's impacts depend on the type of climatic event, the complex societal context and vulnerability of each affected entity. The second article uses empirical evidence to depict a complex pattern of drivers of international migration to Germany. While results show that the majority of interviewees - regardless of their background - were able to explain how changing climate conditions were perceived or how they affected their daily lives in their place of origin, climatic events were not perceived as driver for migration. This paper strengthens existing claims that armed conflict and concerns of safety take precedence over economic woes, and it uncovers widespread religious and ethnic discrimination among the current drivers of population movements. Through a

comparison of the three top European migrant destinations, the article shows that a country's welfare or asylum support system are weak drivers for migration. The third article puts forth the "conflict-induced resource scarcity theory", a novel approach to advancing understanding by addressing the inherent uncertainty across scientific research fields on the complex linkages between climatic events, conflict and migration. It elaborates on the novel theory to shed light on the conflict in Syria and provides new insights on the use of resource scarcity as a weapon during conflict. This thesis by publication emphasizes the importance of evidence-based information, while avoiding simplistic and sensationalist conclusions on each - climatic events, conflict and migration - independently and the relationships between them. The results, novel theory and the presented drivers for migration and recommended policy responses about the "migrant crisis" provide important considerations for civil society, policy makers, and academia, with the overall goal of enhancing the European discourse on migration.

Acknowledgements

Firstly, I am grateful for the research funding I received from the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), the Brazilian federal agency for support and evaluation of graduate education. Next, I would like to express sincere gratitude to my advisor Professor Marcel Bursztyn for his interest in my rather uncommon research objective for the Center for Sustainable Development, and for his continued support, motivation and patience during my research project and related research. His guidance and ongoing help during the entire process enriched my learning and transformed my Ph.D. journey into a pleasant one. I also thank my co-advisor Professor Eduardo Viola for his support, revisions and stimulating discussions. In addition, I would like to thank Professor Carlos Denner dos Santos for his interest, continuous support and guidance. His meticulous revisions along with our stimulating discussions encouraged me to "walk the extra mile" and strengthened the articles and overall research. Moreover, I thank the rest of my thesis committee, including Professor Elimar Nascimento and Professor Saulo Rodrigues. My sincerest thanks go to Jacqueline Foelster, my classmate from the Johns Hopkins School of Advanced International Studies (SAIS), for our collaboration and the language editing of this thesis.

I thank the professors and my fellow students for the stimulating discussions and learning at the United Nations University Institute for Environment and Human Security summer course on "Advancing Disaster Risk Reduction to Enhance Sustainable Development in a Changing World" in mid-2016 in Bonn, Germany.

Dr. Carl-Friedrich Schleussner and Dr. Jacob Schewe – both from the Potsdam Institute for Climate Impact Research (PIK) – provided me the opportunity to join their team as a visiting scientist in Potsdam in the beginning of 2017, for which I am incredibly grateful as this experience was invaluable in advancing my research.

I would also like to extend my immense gratitude to every single one of the 105 interviewees who bravely shared their experiences, views and personal stories. I thank the social workers from the various migrant housings for facilitating the research process and the twelve interpreters who participated in this study, among them, Zahra, Figo, Suhail and Dilo, cannot go unacknowledged as they worked tirelessly to support the recruitment of the interviewees and spent endless hours translating the interviews and helping me better understand the interviewees' culture or specific behaviors. I am forever indebted to the migrants, social workers, interpreters and managers of the migrant housings in the four reception facilities and

four follow-up accommodations in Germany for making this challenging yet highly enriching and unique experience of my field work a reality.

Last but not least, I would be remiss not to thank my family, in particular my mother, Marina Kohler, who has always encouraged me to seek and achieve my objectives, and my husband, Rafael Chagas Pestana, for his continuous support throughout this Ph.D. journey by joining me in my field visits and indulging my interest in my research topic.

List of tables and Figures

Acronyms

AFD	Alternative für Deutschland (Alternative for Germany)
BAMF	Bundesamt für Migration und Flüchtlinge (Federal Office for Migration and Refugees)
EU	European Union
EASY	Erstverteilung von Asylbegehrenden (German nationwide electronic distribution system for asylum seekers)
FGM	Female genital mutilation
FSA	Free Syrian Army
HIV	The human immunodeficiency virus
IOM	International Organization for Migration
IPCC	Intergovernmental Panel on Climate Change
IS	The organization of the Islamic State
NGO	Nongovernmental Organization
Iran	Islamic Republic of
PKK	The Partiya Karkerên Kurdistanê (The Kurdistan Workers' Party)
Syria	Syrian Arab Republic
UCDP	The Uppsala Conflict Data Program
UK	United Kingdom
UN	United Nations
UNHCR	The United Nations High Commissioner for Refugees
UNEP	United Nations Environment program
US	United States
WHO	As of the World Health Organization

Table of Contents

Introduction

Over the last several decades, each of the natural and social science research areas – climatic events, conflict[1] and migration – and the connections of these concepts have significantly impacted world politics, sparked turmoil among policy makers and garnered attention among academics across disciplines. Specifically, the interactions between the three areas of climatic events, conflict and migration are complex, and are characterized by inherent uncertainty across scientific research fields. Furthermore, the current discussion and understanding of their interactions are not verified with robust data and studies given their major actual and potential implications on human security and international peace. While climate's impacts on societies have been a subject of academic study for many centuries, today, the effects of climatic events in combination with migration or conflict separately and the nexus of these research areas is a hot topic. This is due mainly to the accelerated pace of climate change and the widespread fear surrounding the unprecedented flow of migrants[2] into European countries and beyond.

As the top European destination for migrants, Germany has witnessed a surge in asylum seekers since 2009, reaching 745,545 asylum applications – or 57 per cent of the total applications received in the European Union (EU) – by the end of 2016. Against this backdrop, policy makers, civil society, and academics across disciplines have engaged in a polarizing debate about the recent great wave of migration to Europe. The so-called "migrant crisis", which peaked in 2015 became a key global challenge that has given rise to conflicting public perception about migration, pressured policy makers to seek solutions, given urgency to migration research in academia, and affected international cooperation and peace. To date, European policy responses to mounting irregular migration are often based on reactive mitigation attempts, guided by media-inflated perceptions, which trump facts and lead to emergency-driven policy approaches tackling the "symptoms" of the current "migrant crisis",

[1] This study either uses the term "conflict" broadly to encompass violence at the interpersonal, intergroup, and international levels or specifies the conflict type based on the Uppsala Conflict Data Program (UCDP).

[2] This study follows the United Nations' definition of "international migrant", which comprises "any person who changes his or her country of usual residence" (United Nations, 1998) and the term "migrant" is used broadly including all people who have left their habitual place of residence, irrespective of legal status, causes for the move, duration of the stay, and nature of the movement as voluntary or involuntary.

such as containing migrant smuggling, rather than dealing with the underlying drivers of this phenomenon.

While academia provides a mounting body of research on migration in general, inconsistent data on international migration and recent research on the causes and possible solutions to the "migrant crisis" have often led to conflicting results (Cummings et al. 2015). In light of the political upheaval concerning migration and the recent "migrant crisis," the EU agenda on migration, among others, highlights the need to improve the management of migration by addressing the drivers and structural factors that impede people from building and maintaining sustainable livelihoods in their country of origin and therefore seek a future elsewhere (Migali et al., 2018).

Today, understanding the drivers and patterns of migration is a central international concern in academia, politics and policymaking (ibid.). Debates about terminologies concerning migration, such as "drivers", "root-causes" and "factors", and labels, such as "refugee", "migrant" and "environmental migrants", are flourishing in academia. In fact, the drivers for migration have often been analyzed under the push versus pull theory in scientific literature (Hoffmann et all., 2019). Despite the mounting research and discourse on the topic, existing literature and the multiple migration theories neglect analyzing the individual migration decisions and mostly focus on aggregated socio-economic data about the complex human behavior (ibid.). The empirical shortcoming in migration studies, including those concerned with conflict and the environment or climatic events as driver for migration, stems on the one hand from the lack of theoretical work and data and, on the other hand, from the emphasis on analyzing which individuals migrate rather than why they migrate (Koubi et all., 2016).

This research focuses on individual migration decisions, as it investigates the experiences and perceptions of 100 asylum seekers in Germany with semi-structured interviews. In the present study, Germany was chosen as an example of a European country, which is at the center of the discourse about migration and has considerable global influence on the topic. Based on the perceptions of asylum seekers and an in-depth analysis on related scientific literature, this study seeks to advance the understanding and exploration of the risks, links and consequences of climatic events, conflict, and migration – both independently and symbiotically – and offers novel perspectives and frameworks to determine their consequences on human, national and international security. Moreover, it seeks to foster the management of migration by providing a thorough evidence-based picture of what determines international migration in the first place and insights about if and how perceived climatic events have influenced people's

decision to migrate or conflict, or both. Moreover, it offers concise answers to tackle the complexity of migration for policy makers to create effective and durable policies.

0.1 Background

The pace of warming of the climate system, influenced by anthropogenic emissions of greenhouse gases causing widespread impacts on human and natural systems, is unequivocal and unprecedented. The interchangeable concepts of “climate change” and “global warming” are familiar to almost everyone and cannot be mentioned without sparking a heated debate. Furthermore, despite existing scientific data, climate change denial still exists, even among the highest political ranks.

Throughout the past 650,000 years, there have been seven cycles of glacial advance and retreat, and the end of the last ice age about 14,000 years ago marked the beginning of the modern climate era. Hence, the earth’s climate, meaning the characteristics of the atmospheric conditions, has always been subject to change (Berlemann & Steinhardt, 2017). Climate change can be identified by a shift in the mean or variability of its properties, or both, that persists for an extended period (IPCC, 2014). On the one hand, the earth’s natural climate variability is part of climate change, which implies that it evolves from the interaction between the atmosphere, the ocean, and land, as well as changes in the amount of solar radiation reaching our planet. On the other hand, human activities causing emission of greenhouse gases, including carbon dioxide, methane, nitrogen oxides, and chlorofluorocarbons into the atmosphere have significantly contributed to climate change (Berlemann & Steinhardt, 2017). As of the Intergovernmental Panel on Climate Change (IPCC) climate report, published in 2014, anthropogenic factors are extremely likely to have caused more than half of the observed increase in the average global temperature over the last 60 years. Since the preindustrial period, the average surface temperature has risen by about 1^{o}C, though local climatic effects differ considerably across regions (Berlemann & Steinhardt, 2017). For instance, in many parts of the world, changes in extreme climate-related events tend to follow mean temperature changes, leading to proportional changes in cold and warm extremes (Kharin, 2007; Rummukainen, 2012). Consequently, there is an increase in the number of warm days and warm nights and, inversely, a decrease in the number of cold days and cold nights (Zhang, 2011). Global warming is further increasing the amount of water in the global atmosphere, thereby inducing changes in the overall hydrological cycle, including increasing levels of global precipitation; whereas high latitudes and some tropical regions

witness an increase in precipitation, subtropical regions see a decrease (Berlemann & Steinhardt, 2017; Kharin, 2007; Rummukainen, 2012; Berlemann & Steinhardt, 2017). The increases in heavy precipitation are accompanied by a reduction in the probability of wet days, implying more extreme future climate with higher probabilities of droughts and increased rainfall-related floods (Berlemann & Steinhardt, 2017; Kharin, 2007).

Climate change has long-standing, recurring and sweeping occurrences, though, and while climate change has evident ecological effects (Berlemann & Steinhardt, 2017), the effects and dangers of the climatic events on societies are less tangible, visible and predictable (Geddes & Scholten, 2016). Changes are inevitable and are expected to increase, however climate change involves complex interactions and fluctuating likelihoods of diverse impacts (IPCC, 2014), scientific research is not aligned on where and when changes will occur (Burrows & Kinney, 2016) and the extent to which human systems are and will continue to be affected (Berlemann & Steinhardt, 2017). However, the body of literature reveals that there is consensus around the fact that changing climate will affect human security across the globe and while climate is not the only factor influencing social and economic outcomes, it is a major factor that impacts societies on numerous dimensions and at many scales (Carleton & Hsiang, 2016).

Since the 1990s, the spread of alarmist declarations depicting climate change as a human security threat have spurred the COP 21 and the important 2015 Paris Climate Conference, leading to a universal agreement between 196 nations to curb global warming at 1.5°C. Adopted in December 2015, the Paris Agreement on climate change calls for action on both the causes and consequences of climate's impact. While the causes are to be addressed through a significant reduction in greenhouse gas emissions (Fankhauser, 2016), its consequences require actions based on a robust scientific understanding of the interaction between the environment and society. The social impact of climate has been a subject of academic study for many centuries. For instance, already in the 18th century, Montesquieu argued that climate can impact the nature of men and societies and determine its structure and prosperity (Montesquieu, 1746). The questions of whether and how climate affects people's lives, as well as how much and why it matters, continue to be studied (Carleton & Hsiang, 2016). Furthermore, over the last several decades, these questions have emerged to become a major concern of contemporary geopolitics, and climate change impacts on societies are garnering greater attention from both policy makers and researchers (Carleton & Hsiang, 2016). Despite the prominence of the subject and the urgency for better conceptual models of the dynamics at play, comprehensive analytical climate-human frameworks remain scarce in

scientific literature and there has been limited focus on theorizing explicitly on this nexus, and even fewer with an empirical research approach (Morrissey, 2013).

Recent research is moving beyond using purely meteorological indices by integrating the notion of vulnerability to examine the impacts of climate change and literature highlights that the impact of climate change on human beings and societies is shaped by the vulnerability specific to each affected entity (Brzoska & Fröhlich, 2015; Scheffran et al., 2012). The concept of vulnerability is a decisive mechanism and crucial tool to map the complex interrelation, because it neither denies nor promotes a linear causality between climate change and its effects on social systems (Brzoska & Fröhlich, 2015). Vulnerability encompasses a variety of concepts and elements and the field of vulnerability studies is fragmented between disciplinary and professional understandings (IPCC 2014; Busby 2014). The IPCC released in 2014 describes vulnerability broadly as the propensity or predisposition to be adversely affected and presents the concept imbedded in the context of risk and hazard research and assessments. However, this research prefers to adopt the IPCC 2007 description, where vulnerability to climate impacts may include exposure and sensitivity to climate change, as well as adaptive capacity.

Climatic events have very different impacts on different segments of societies (Berlemann & Steinhardt, 2017) and generally, vulnerability is heavily shaped by social, demographic, and institutional factors including gender, age, culture, education, ethnicity, and financial assets (Otto et al., 2017). For instance, households and firms are expected to adapt to climate impacts by adjusting their behavior; though, their vulnerability also depends on public policy on the national level to overcome market failures, correct policy distortions and incentivize private adaptation. Moreover, a household's or society's response depends on economy-wide choices about economic diversification, spatial planning, urban design and infrastructure; and as climate change is global, system-wide aspects of adaptation also affect the vulnerability of households and societies (Fankhauser, 2016).

At the same time, when climate change was increasingly proclaimed as a security threat, predictions started to surge of large numbers of migrants[3] in the 1990s. In response,

[3] This research follows the United Nations' definition of 'international migrant', which comprises 'any person who changes his or her country of usual residence' (United Nations 1998) and the term 'migrant' is used broadly, including all people who have left their habitual place of residence, irrespective of legal status, causes for the move, duration of the stay, and nature of the movement as voluntary or involuntary.

researchers began to analyze how environmental factors shape migration decisions, mainly motivated by bold, scientifically untested projections of so-called 'climate refugees' – projections reaching between 150 and 300 million for the time until 2050 – which has pegged migration to be considered the main human security risk of climate change (Berlemann & Steinhardt, 2017; Brown, 2008; Brzoska & Fröhlich, 2015; Myers, 2005). To date, the climate-migration relation remains an emergent area of research (McLeman, 2014) and authors who emphasize multilevel contextual drivers call for greater attention to the complexity of the climate-migration relationship and the numerous factors at the different scales (Black et al. 2011; Hunter et al., 2015; Morrissey, 2013). There exists a large body of scientific literature analyzing the environmental and climatic impacts on internal and international migration using macro-level (Beine & Parsons, 2015; Coniglio & Pesce 2015; Marchiori et al., 2012; Black et al., 2011) or micro-level (Kelley et al., 2015; Bohra-Mishra et al., 2014; Mueller et al. 2014; Gray & Mueller, 2012) data and applying quantitative methods, qualitative research or mixed method approaches. The results of these studies are crucial for migration studies and show that migration decisions are highly complex, usually based on multiple drivers, and yet, the impact of the environment and climatic events, which inherently depends on the vulnerability of social systems, are just one factor influencing population movements. Though, the existing set of scientific evidence remains contradictory and overall inconclusive (Hunter et al., 2015; IPCC, 2014; Black et al., 2011; Cattaneo & Peri, 2015; Raleigh et al. 2008). This empirical ambiguity may stem from the fact, that existing theoretical work and data focuses primary on researching about which individuals decide to migrate and neglects the analysis on why people decide to migrate (Koubi et al. 2016). Secondly, studies researching on the environmental or climate and migration nexus tend to focus only on one aspect of environmental change, such as flood, rainfall or drought. Moreover, existing studies provide limited understanding on the why impacts of environmental and climatic impacts alter between regions and countries (Hunter et al., 2015; Black et al., 2011; McLeman, 2014).

The so-called "migrant crisis" and flow of migrants, as seen over the last decade in European countries and beyond, has become a key global challenge, though it is important to keep in mind that large-scale global migration is not an unknown phenomenon, nor are mass movements of migrants in Europe (Cummings et al., 2015). In fact, media-inflated images of horrifying deaths in the Mediterranean and the hundreds of thousands of asylum seekers taking their journey across Europe via countries such as Macedonia, Serbia, Slovenia,

Hungary and Austria – with Germany often being the preferred final destination – brought the discussion on international migration to a climax in 2015. This debate divided those holding tight to the so-called European identity that is founded on solidarity and equity and pitted against those seeking to secure the borders of EU states, assuming unmanageable flows of migrants and threats to security.

The political repercussion of hosting or refusing to host migrants is regularly debated in several European countries and since 2014 the topic of immigration has remained one of the most politicized issues in Germany, taking center stage in the 2017 federal election (Talò, 2017). Among many other European countries, the immigration debate was also thrust to the fore in the campaign that led to the vote for "Brexit" of the UK from the EU in June 2016. And beyond Europe, it significantly influenced the election of the current Republican US President Donald Trump, who since his candidacy has called for the mass deportation of immigrants residing unlawfully in the US and the construction of a wall along the US-Mexican border that would allegedly stem any further inflow of migrants.

The major incomprehension of this global political upheaval lies in the existing inconsistency in data on international migration, still limited empirical research on migration in Europe and on the causes and possible solutions to the recent "migrant crisis," spurring conflicting evidence-lacking debates on the subject (Cummings et al., 2015). Moreover, while migration is more central to the debate about Europe's future than ever before (Geddes & Scholten, 2016), the current policies fail to effectively address the difficulties experienced by migrants and governments and belie the complex nature of international migration (Cummings et al., 2015).

The alarmist warnings of climate-induced mass migration, also proclaimed by the first assessment report of the IPCC in 1990 was later translated into predictions of major conflicts in receiving regions and generally, climate change in connection with conflict and migration was since then presented as phenomenon causing violence and instability, all of which was based on thin scientific evidence (Raleigh, 2010; Reuveny, 2007). Across academic disciplines, researchers analyze the extent to which climatic events are responsible for interpersonal violence, conflict or non-state conflict and political instability (Hsiang et al, 2013). Studies show that this phenomenon date back to 10,000 BC, and the evidence shows that the association of climate and conflict has been observed across all types of conflict, human history, regions of the world, income groups and the various duration of climatic events (Ibid.). The literature to date rarely accounts for the complexities that underlie the

relationship between climatic events, natural resources, human security and societal stability (Buhaug et al., 2014; Scheffran et al., 2012). However, since the beginning of modern academic research on the links between climate and conflict in the 1980s, resource scarcity is considered to be an important link of the relationship.

Examples in which resource scarcity, in particular water, were used as a political or military tool in conflicts are numerous and date back to over 4,500 years ago and since then, the role of water has always been a primary target during conflict (Gleick, 2014). Though, today, water resources and systems are of increasing strategic relevance during conflict, as water scarcity is rising, accelerated by anthropogenic factors, as freshwater-related risks of climate change mount with increasing greenhouse gas concentrations (Gleick, 2006; IPCC, 2014). In recent years, there has been an increase in the number of incidents of water-related violence around the world, though the research on the linkage between water and international peace and security neglects the fact that water is not only considered a factor triggering war but also used as a weapon or tool, or both during conflict (Gleick, 2006, 2014).

During the recent "migrant crisis", the debate on climate change has ramped up and, in 2015, it retook center stage as a "convenient truth," during Europe's ongoing struggle to tackle incoming flows of irregular migrants, terrorism in Europe and conflict and terrorism in the larger Tigris and Euphrates basin (Powell et al., 2017). Moreover, the ongoing conflict in Syria, which is characterized by complicated but direct connections to resource scarcity, impacting the relationship between climatic events, conflict and migration is intensively discussed among academics and policy makers (Gleick, 2014). In these contexts, climate change was yet again presented as the driver for conflict and mass migration, causing human insecurity, creating a state of emergency and a trilogy of self-reinforcing global challenges affecting international peace (Powell et al., 2017).

Over the last several decades, each of the three research areas of climatic events, conflict and migration, and their links have significantly impacted global politics, sparked turmoil among policy makers and garnered attention among academics across disciplines. Human insecurity may be endangered by each of these natural and social components both independently and the relationships between them. However, due to the mentioned shortcomings and complexity of the relationship, literature diverges significantly in determining the relative importance of climate as a driver or contributor to conflict and the role that migration plays among this relationship, relative to other factors (Burrows & Kinney, 2016; Gleick, 2014; De Châtel, 2014). Despite potentially severe consequences for human, national and international security,

the uncertainty about the nexus between climatic events, conflict and migration that dominates the literature remains high and there is a crucial need to rigorously explore the links between these natural and social science research areas (Burrows & Kinney, 2016). Overall, increased understanding of each of the research areas – climate, conflict and migration – and their connections and effects on human, national and international security is essential for academia, policy makers, civil society and may lead to potentially positive repercussions on international cooperation and peace.

0.2 Study aims and research questions

The purpose of this research project is to foster understanding of the three natural and social science research areas – climatic events, conflict, migration – and the connections among them. This study moreover seeks to advance scientific knowledge on the potential security risks of each research area and their connections. Furthermore, this research explores the drivers for international migration to Europe, in particular to Germany, of the so-called "migrant crisis", which peaked in 2015. And it verifies if and how climatic events may have affected the daily livers and the decision of the sampled interviewees to migrate or conflict in their place of origin, or both.

This study is an eager response to the call of the Paris Agreement to advance knowledge on the consequences of climatic events. Moreover, it encounters the challenge of the EU agenda on migration to improve the management of migration by exploring the drivers and structural factors of international migration. And it addresses numerous shortcomings in existing literature and tests existing theories on this interdisciplinary subject. This research's ultimate goal is to spur scientific research, policy intervention and enhance evidence-based discourses among academics, policy makers and civil society on climatic events, conflict, migration and their relationships and the wide-ranging consequences on human, national and international security and peace.

This research project primarily explores its research aims based on the perceptions and experiences of interviewees and sets the stage with the first article, "Understanding How Climatic Events Influence Conflict and Migration across Borders through a Climate-Human Analytical Framework." This article fosters scientific literature with the goal of understanding how climatic events – such as temperature, droughts, and storms – impact societies and shape social outcomes. Based on a thorough scientific literature review and an empirical research approach including economic, social and political structures at multiple spatial and temporal

scales, this article seeks to develop a conceptual framework that is applicable across regions and allows for a more systematic conceptualization of how the climate interacts with societies. The climate-human analytical framework seeks to address, among multiple other objectives, the lack of conceptualization on the links between climatic events and migration and, separately, climatic events and conflict. Moreover, by exploring and theorizing on the complex mechanism at play, it seeks to offer understanding to academia and policy makers on how to take responsibility of the consequences of the interplay between climatic events and societies.

This scientific paper will be followed by the second article, "Getting to the Root of the International Migrant Crisis: What Moved the Asylum Seekers in Germany to Flee their Country," which investigates the drivers of international migration, the causes of asylum seekers to leave their place of origin; and the motivations – if any – to choose their destination country. The so-called "migrant crisis" with its potential links to conflict and climatic events and its polarizing political debates - accompanied by widespread fear surrounding the unprecedented flow of migrants in recent history, as seen in European countries and beyond - sits at the core of the research aims of this thesis. This article explores the actual multiplicity and detailed drivers of recent migration to Europe using an empirical research approach and drawing from individual experiences and decisions of asylum seekers. It is eager to address the growing, but still limited research and evidence-based information on the "migrant crisis" and provide results that foster a fact-based political and public discourse on migration.

This thesis will conclude its analysis with the article "Climatic events, Conflict and Migration: A Novel Nexus-Theory," which is committed to advancing understanding of the linkages between climatic events, conflict, and migration and suggests a set of novel perspectives and theory on their nexus. Based on empirical evidence, this research singles out resource scarcity, including the use of it as a weapon and tool during conflict, as an important factor between this nexus, and explores potential links between climatic events, conflict and migration also in the context of the ongoing Syrian conflict. The nexus-theory is expected to provide new insights on the central role that climatic events play as contributor to conflict, the impact of conflict on societies and the role that migration plays among the relationship. Moreover, this paper addresses the potential human, national and international security risks that each – climatic events, conflict and migration - and the connections of these concepts cause, sparking turmoil among policy makers across the globe and garnering attention among academics across disciplines.

While theory and policy implications are highlights in each stand-alone article, this thesis presents an analysis of detailed implications for academia, policy makers and civil society in appendix 1.

With the three stand-alone articles, this research sought to answer the following overarching research questions:

What are the perceived drivers for migration and – if any – the perceptions of climatic events determining migration decisions of asylum seekers in Germany during the so-called "migrant crisis", which peaked in 2015?

1. How did asylum seekers perceive climatic events – if so – in their place of origin and how did it affect their daily lives and their decision to migrate?
2. What were asylum seekers' perceived drivers for international migration to Europe?
3. How did asylum seekers perceive resource scarcity in their place of origin and how is it associated with conflict, climatic events and migration?

0.3 Methodology

This research is based on a qualitative phenomenological research approach with individual semi-structured interviews and participant observations of migrants who moved to Germany via irregular means. The main information about the methods applied are described briefly in each article. In the following, important details about the methodology are presented, as they are considered important for the reader of this introduction. Moreover, specific methodological considerations, limitations and validity are presented in the appendix 2.

Data collection

The data collection process of this research was undertaken between the end of December 2016 and mid-April 2017. Each interview lasted between 30 and 75 minutes and took place upon prior agreement with the interviewee and the interpreter, regarding date, place and time (Appendix 3). The interview was conducted in the language of the respondent's choice, either in their native language, a second language or fluently spoken foreign language (Appendix 3). The interviews in Arabic, Kurdish Kurmanji and Sorani, Somali, Persian, Tigrinya, Dari Persian, Turkish, and Urdu were conducted with the assistance of experienced interpreters

while those in German, English, and French were conducted directly by the principal researcher. A total of twelve interpreters, who worked at the different migrant housings and one interpreter, who was recruited from the local professional network helped to facilitate the interviews.

To ensure the safety and comfort of the interviewees, the interviews were held either in the privacy of the interviewee's quarters or in an undisturbed location, as agreed upon by both parties. Only 15 out of the 100 validated interviews took place in cafés, private apartments or the open-air, upon the request of the interviewees or authorities of the migrant housings (Appendix 3). Despite the usual unrest in the migrant housings, it was possible to hold the interviews in privacy, in an undisturbed place known to the interviewee.

All interviewees were informed both orally and in writing about the purpose, specifying the advantages and disadvantages, and terms of confidentiality of the research project, in addition to the voluntary nature of their participation. Both the interviewee and interpreter were asked to sign a consent form prior to start of each interview. The consent form for interviewees was provided in English, French and German language (Appendix 2) and orally translated into all other interview languages. The consent form for interpreters was provided in German (Appendix 5). As outlined in the consent form and orally or in writing confirmed to the managers of the migrant housings, the names of people and migrant housings will not be disclosed in this thesis to protect the study participant's anonymity and security.

The individual semi-structured interviews consisted mostly of open-ended questions, grouped into four sections including: general information about the interviewee and his life in his or her place of origin; information on why the interviewee is leaving his or her place of origin; information about the destination; and general opinions of the interviewee (Appendix 6). While all collected data form the basis of the three articles of this research, there were specific questions in the interview guide (Appendix 6), aimed at answering the research questions of each article. The information on why the interviewee is leaving his or her place of origin, in particular the impact of possible adverse weather and climate conditions on the interviewee's daily lives provided findings to support the first article, "Understanding How Climate Change Influence Conflict and Migration across Borders through a Climate-Human Analytical Framework." The motivations for leaving the place of origin and for choosing Germany as a destination country were also inquiring data for the second article: "Getting to the Root of the International Migrant Crisis: What Moved the Asylum Seekers in Germany to Flee their Country." And inquiry on resource scarcity, perceived violence, tensions or conflict and

inflow or outflow of migrants aimed at providing data for the third article, **"**Climatic Events, Conflict and Migration: A Novel Nexus-Theory."

The interview method of individual semi-structured interviews, which were mostly comprised of open-ended questions is applied to this research, in order to gather detailed information about the migrants' experiences and perceptions; to maintain a certain flexibility to adapt questions during the interview process and along the field work; and create an informal interview environment, where the interviewee feels comfortable, willing to talk about experiences, views and express openly his or her feelings. This interview method made every interview unique and unpredictable, which is also reflected in the difference in duration of the interviews. Interviewees were often visibly emotional in sharing their experiences, and many were proactive and appeared to be keen on telling their entire migration story, including detailed information about their migration journey and difficulties in Germany, which was not the scope of this research project. However, this information was useful to understand the subject interviewed - the asylum seeker - as well as to better grasp the background of the interviewee in his or her country of origin, the contexts in which migration decisions were taken and the challenges faced once in the destination country. To be heard as a migrant and to be able to share their experiences, views and to release emotions might have even been cathartic for some interviewees.

The interviews were documented following handwritten protocols, which also included reflections about the interview content, the interviewee's behavior and expressions. Moreover, notes about participant observations, including informal conversations, engagements and participation in events in the migrant housings were documented. To analyze the data collected, an explorative thematic analysis was conducted using the NVivo software and digital datasheets. The NVivo software was used to store, analyze and code the data. For instance, the software's function of matrix coding - comparing attributes of interviewees and defined codes - was used to ask a wide range of questions, including the drivers for migration of the interviewees from different geographies. The NVivo software was crucial to master the high number of interviews from multiple backgrounds. However, to analyze data and prepare tables and figures, also digital datasheets using the Excel software were employed. Datasheets support the analysis of the three stand-alone articles. The first article, "Understanding How Climatic Events Influence Conflict and Migration across Borders through a Climate-Human Analytical Framework," explores climatic events and includes data analyzed in digital datasheets (Appendix 7). Moreover, to analyze the drivers of

international migration, the causes of asylum seekers to leave their place of origin for the second article, "Getting to the Root of the International Migrant Crisis: What Moved the Asylum Seekers in Germany to Flee their Country," a digital datasheet was used (Appendix 8). The third article, "Climatic Events, Conflict and Migration: A Novel Nexus-Theory," analyzing the use of resources was also partially supported by digital datasheets (Appendix 9). The field notes from participant observation and non-verbal communication during the interviews were triangulated to support the reflections and analysis.

Study participants

To capture detailed narratives of the lived experiences, perceptions, and decisions of migrants who moved to Germany via irregular means, individual semi-structured interviews were conducted with 105 migrants from 17 countries, and with one stateless person. However, due to missing information of two interviewees, one inexperienced interpreter and two missing signatures of the consent form, a total of 100 interviews were validated and analyzed.

Upon arrival in Germany, migrants need to register and apply for asylum (BAMF, 2017). Since 1993, based on the asylum act, § 45 AsylG, asylum seekers are distributed among the Federal States and respective initial reception facilities, according to a nationwide electronic distribution system called EASY (*Erstverteilung von Asylbegehrenden*) (BAMF, 2017). The quota of asylum seekers for each Federal State is calculated, among other criteria, based on the "Königstein key," a formula that combines the total population of every Federal State and the tax revenues to issue an annual quota of asylum seekers to be accepted by each federal state. The asylum seeker may move to a follow-up accommodation, administered by the Federal states and municipalities, during or after a decision about his or her asylum application was made.

To capture a diverse and comprehensive research sample, interviews were conducted in four initial reception facilities and four follow-up accommodations, throughout three Federal States in Germany including Berlin, Brandenburg and Hesse. According to the German Federal office for Migration and Refugees, Berlin received 27,747 (3.8%), whereas Brandenburg 18,112 (2.5%) and Hesse 65,520 (9.1%) of the total asylum seekers in Germany, in 2016 (BAMF, 2017). A total of 49 interviews were conducted in Hesse, 25 in Berlin and 26 in Brandenburg (Appendix 3).

Purposive sampling was applied to learn about the experiences, perceptions and opinions of migrants in Germany and emphasis was placed on including interviewees with diverse

backgrounds, age and nationality. Hence, interviewee inclusion criteria were that the individual be, in order of priority, at least 18 years old and a migrant in Germany.

The recruitment process was conducted by the researcher and in some facilities supported by social workers and interpreters. Moreover, the "snowball" method boosted the number of volunteers who participated in the study. The recruitment of interviewees was stopped once a sense of saturation of information was attained.

Research sample

According to the asylum act (§ 71 AsylG), an asylum application is created when the asylum seeker arrives in Germany for the first time. One may apply for a follow-up application in case of withdrawal or rejection of the first application (BAMF, 2017). The analysis of 100 interviews resulted in a rich and diverse research sample (Table 0.1). The majority, or 98% of the interviewees are asylum seekers and since all of them came to Germany for the first time, it is assumed that they are all first-time applicants in Germany. Only two interviewees had already received a permission to stay in the country at the time of the interview. Surprisingly, 77% of the interviewees applied for asylum in 2016 and only 4% applied before 2015 (Table 0.1). These figures are approximations, because the interviewee informed about the month when he or she left their place of origin and the year of arrival in Germany. However, it is important to note that when migrants arrive in Germany, it may be a while before they apply for asylum.

This research sample confirms that the asylum seekers in Germany are a highly culturally heterogeneous group, as the resulting research sample of this study is comparable with the official annual BAMF report 2016. The comparison of the 77% of the interviewees who applied for asylum in 2016 and the results of the official annual BAMF report 2016, show that the top three countries represented by asylum seekers in Germany are Syria, Afghanistan and Iraq; and Eritrea, Iran and Pakistan are among the 10 most represented countries of both datasets (Figure 0.1).

This research confirms studies reporting that the majority of migrants are male, single and in their 20s (Cummings et al., 2015). Nearly one quarter of the total research sample were unmarried males, aged between 18 and 28 years old. In fact, 64% of interviewees were male and they prevailed in three out of four age groups, whereas in the age group 51 to 61 years, more female interviewees abounded (Figure 0.2). Accordingly, in 2016, the BAMF published that 65.7% of asylum seekers were male, and males prevailed in all age groups, except the age

group of migrants older than 65 years old (BAMF, 2017). Moreover, the BAMF reported that 73.8% of asylum seekers are younger than 30 years old, while in the research sample of this thesis 74% of interviewees were younger than 40 years old. Moreover, the majority (59%) of interviewees had children (Table 0.1).

The literature claims that migration flows, and outcomes are shaped by the migrant's resources, which are determined by the socio-economic background (Van Hear, 2014). Interviews conducted with for instance a Syrian doctor and a Pakistani economist demonstrate that their decision to move across borders, their choice of transportation and conduct in Germany were planned and goal-oriented. However, since findings have shown that the array of socio-economic backgrounds of migrants are broad - represented in this study by the migrant's occupation, rather than schooling, due to the multiplicity of backgrounds and schooling systems in the different countries (Table 0.1) - this research argues that channels for international migration are not exclusive for specific classes of people. The gender distinction of the research sample shows remarkable differences between men and women in their socio-economic background and motivations to migrate internationally. The majority of interviewed women were housewives or unemployed, which is consistent with existing literature, that identifies that by far, the prevalent motivation for women to migrate is as "trailing spouse" (Heering et al., 2004). In fact, only 6% of higher-educated women of this research sample, had clear-cut motivations for leaving their place of origin and also for choosing Germany as destination country.

Table 0. 1 Demographic profile of interviewees

Demographic characteristics n=100	(%)
Gender	
Female	36%
Male	64%
Age of interviewee	
18-28	44%
29-39	30%
40-50	22%
51-61	4%
Country of origin (or residency, if more than 10 years)	
Syrian Arab Republic	34%

Demographic characteristics n=100	(%)
Religion	
Christian	14%
Muslim (Ahmadi, Alawit, Shia, Sunni)	48%
Hindu	1%
No religious or ethnic affiliation	1%
Unassigned	36%
Number of children	
0	41%
1	12%
2	15%
3	13%

Iraq	12%
Afghanistan	11%
Eritrea	6%
Iran (Islamic Republic of)	5%
Somalia	5%
Kenya	5%
Turkey	4%
Ethiopia	3%
Cameroon	3%
Pakistan	3%
Egypt	2%
Yemen	2%
Chad	1%
Sudan	1%
Russian Federation	1%
Jordan	1%
Stateless	1%

Marital status	
Married	57%
Single	36%
Widowed	4%
Divorced	3%

Main occupation	
Housewife	17%
Shopkeeper	12%
Student at university	9%
Student at school	7%
Corporate employee	7%
Unemployed	6%
Construction worker	5%
Mechanic	4%
Teacher	4%
Farmer	3%
Security guard	3%
Hairdresser	3%
Truck driver	2%
Carpenter	2%
Baker	2%
Soldier	2%
Metalworker	2%
Shepherd	2%
Taxi driver	2%
Hotel owner	1%
Shoemaker	1%
Water and soda seller	1%
Electrician	1%
Doctor of medicine	1%
Cook	1%

4	9%
5	5%
6	1%
8	1%
10	2%
11	1%
Pregnant	4%

Years away from location of origin (or residency, if more than 10 years)	
0.1 month - 12 month	26%
13 months - 24 months	39%
2.1 years - 4.0 years	16%
4.1 years - 6.0 years	8%
> 6.0 years	11%

Year when interviewee applied for asylum (approximated value)	
2017	4%
2016	77%
2015	15%
2014	1%
2012	1%
2009	1%
2003	1%

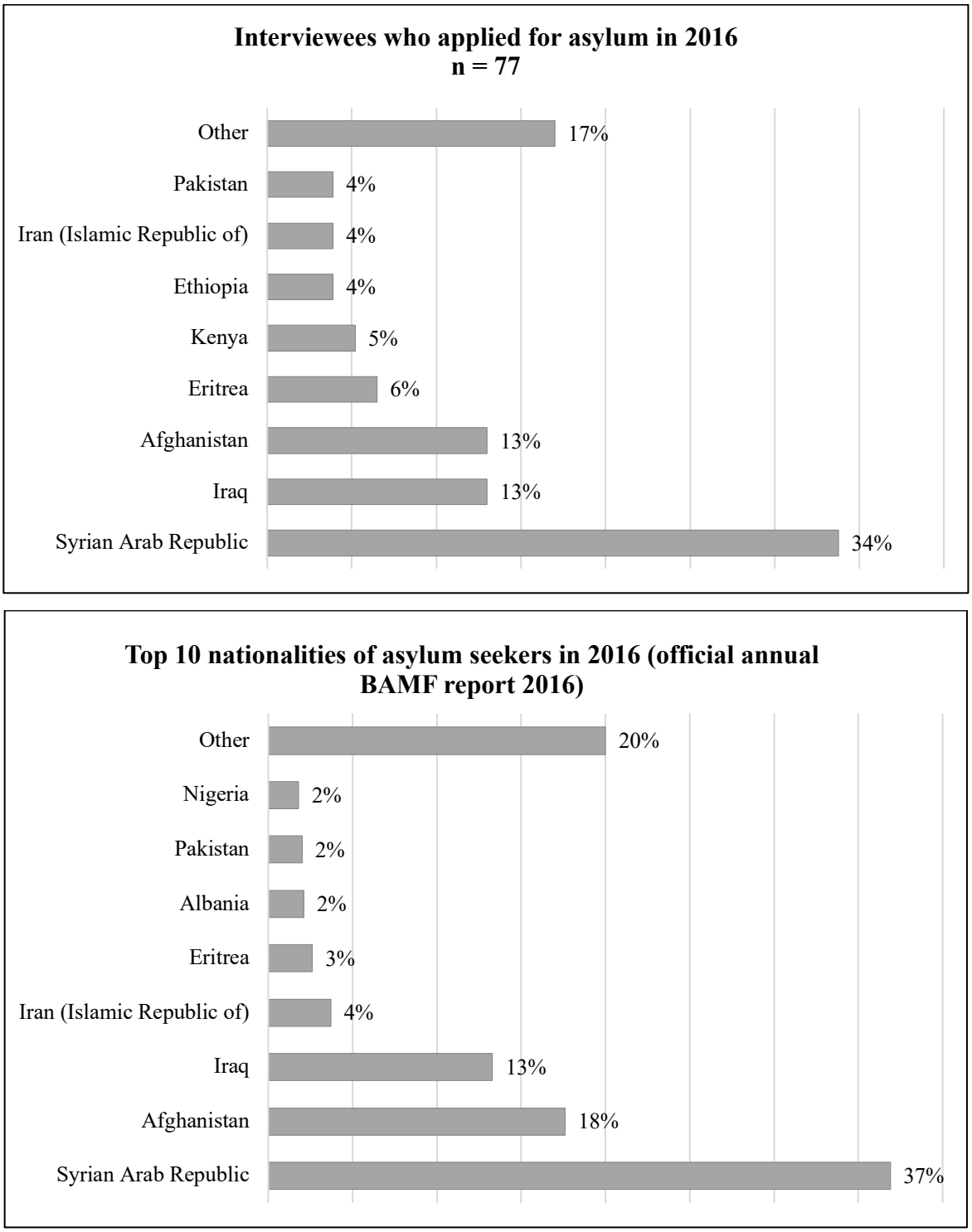

Figure 0.1 Comparison of the research sample with the official annual BAMF report 2016

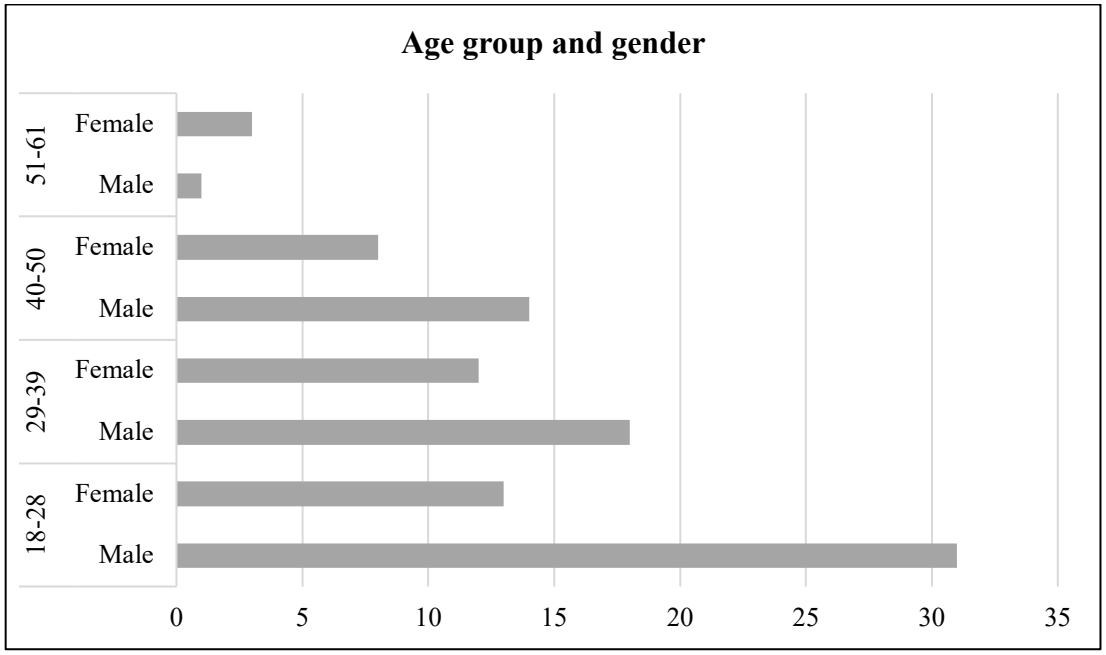

Figure 0.2 Age group and gender of the research sample

0.4 Structure of the thesis

This thesis by publication contains three stand-alone scientific research papers, that relate to the study objectives outlined above. The article one, "Understanding How Climatic Events Influence Conflict and Migration across Borders through a Climate-Human Analytical Framework," is presented in chapter 1, including its supporting materials and references. It has been reviewed and rejected by the journal called Weather, Climate and Society, with an impact factor of 2.03, received in 2017 and is currently in revision following the reviewer's comments. The second article called "Getting to the Root of the International Migrant Crisis: What Moved the Asylum Seekers in Germany to Flee their Country," is presented in chapter 2 of this thesis, including its supporting materials and references. In February 2019 the article was accepted by the Migration Conference 2019, held in Bari, Italy and presented in June 2019. The third article, "Climatic Events, Conflict and Migration: A Novel Nexus-Theory," is presented in chapter 3, including its supporting materials and references. In March 2019 it was submitted to the journal Research in Globalization and it is currently in resubmit status.

In section seven of this thesis, a conclusion of the research project is presented. The conclusion of the thesis is followed by a detailed appendix that includes methodological considerations, limitations and validity; important implications for academia, policy makers and civil society; and supporting materials and data of this research project. The reference list

of this introduction, conclusion, appendix 1 and appendix 2 is provided at the end of this document.

Chapter 1

Understanding How Climatic Events Influence Conflict And Migration Across Borders Through A Climate-Human Analytical Framework

Article title: Understanding How Climatic Events Influence Conflict And Migration Across Borders Through A Climate-Human Analytical Framework

Keyword: environment, climate change, migrants, conflicts

Author: Christina Kohler

Co-authors: Marcel Bursztyn, Carlos Denner dos Santos

Abstract

Climatic events impose significant economic and social burdens on modern populations and are increasingly pressuring policy makers to acknowledge climate as a security issue. This research contributes to efforts to understand how climatic events – such as temperature, droughts, and storms – impact societies and shape social outcomes. To this end, related scientific literature was scrutinized to identify the neglect of environmental factors in mainstream migration research, a lack of conceptualization on the links between climatic events and migration and, separately, climatic events and conflict, and a lacuna on how people's perception of climate's impact relates to migration decisions. This research fills these gaps by empirically exploring the individual experiences, perceptions and decisions of 100 asylum seekers from 17 countries hosted in German facilities. Existing literature and interviews were used to develop an analytical framework that is applicable across countries and allows for a theoretical conceptualization of how the environment interacts with societies and influences migration and conflict. The results depict a mixed picture of the links between climate and migration, and climate and conflict, highlighting that the impacts of climate depend on the type of climatic event and the complex societal context and vulnerability, including adaptation strategies of each household or society. The climate-human analytical framework and findings help to inform academia and policy makers on how to take responsibility over the most vulnerable populations and address existing adaptation gaps.

1.1 Introduction

Climatic events are a major concern of contemporary geopolitics, and their impacts on societies are garnering greater attention from both policy makers and researchers. The unprecedented pace of change in earth's climate imposes significant economic and social burdens on modern populations, and has spurred policy makers and media sources to increasingly recognize and proclaim climate as a security issue (Burrows & Kinney, 2016; IPCC, 2007, 2014). Today, the threat of climatic events in combination with migration or conflict is a hot topic among policy makers (Burrows & Kinney, 2016), mainly due to the widespread fear surrounding the unprecedented flow of migrants in recent history, as seen in European countries and beyond.

The Paris Agreement on climate change, adopted in December 2015, calls for action on both the causes and consequences of climate's impact. While the causes are to be addressed through a significant reduction in greenhouse gas emissions (Fankhauser, 2016), its consequences require actions based on a robust scientific understanding of the interaction between the environment and society. The interchangeable concepts of "climate change" and "global warming" are familiar to almost everyone, and the diverse impacts of climatic events on societies and possibly-linked phenomena such as migration and conflict are vastly discussed in scientific literature (Carleton & Hsiang, 2016; Piguet et al., 2011). These are long-standing, recurring and sweeping occurrences, though, and while climatic events have evident ecological effects (Berlemann & Steinhardt, 2017), the effects and risks of the climate's impacts on societies are less tangible, visible and predictable (Geddes & Scholten, 2016).

This research takes as its starting point the insights gleaned from scientific literature aimed at understanding how climatic events – such as temperature, droughts, and storms – impact societies and shape social outcomes (Black et al., 2011; Carleton & Hsiang, 2016; Hunter et al., 2015). Existing quantitative measures reveal that climate is not the only factor influencing social and economic outcomes, though it is a major factor, impacting societies on numerous dimensions and at many scales (Carleton & Hsiang, 2016). Recent research is moving beyond using purely meteorological indices by integrating the notion of vulnerability to examine the impacts of climatic events. The concept of vulnerability is integral to the hazard field and is used to map the complex interrelation between and among climatic events and societal context (Brzoska & Fröhlich, 2015). Moreover, the analysis of adaptation strategies, which is an inherent part of vulnerability assessments, is considered one of the greatest empirical

challenges in contemporary climate change literature (Auffhammer & Schlenker, 2014). Exploring existing adaptation gaps is crucial, as the absence of adaptation strategies may reinforce existing global inequalities, destabilize societal equilibrium and potentially lead to undesired outcomes such as state failure, conflict and migration (Carleton & Hsiang, 2016).

This research recognizes that there is usually more than one driver that leads a person to migrate, and that it is rarely possible to identify specific so-called "environmental migrants" or "climate refugees" (Black et al., 2011). Based on the United Nations' definition of "international migrant", this paper uses the term "migrant" broadly including all people who have left their habitual place of residence, irrespective of legal status, causes for the move, duration of the stay, and nature of the movement as voluntary or involuntary (United Nations, 1998). In migration research, authors who emphasize multilevel contextual drivers call for greater attention to the complexity of the climate-migration relationship and the numerous factors at the micro-, meso-, and macroscales (Black et al., 2011; Hunter et al., 2015; Morrissey, 2013). Yet, existing scientific evidence remains contradictory, as authors claim that the science of the climate-migration relationship is still characterized by wide-ranging methodologies, limited theoretical development and a myriad of geographic foci (Black et al., 2011; Carleton & Hsiang, 2016; Hunter et al., 2015). Migration studies are a largely-theorized social process with diverse approaches and perspectives on factors and consequences of human mobility. However, environmental factors still remain neglected within mainstream migration research (Hunter et al., 2015) and, overall, the climate-migration relation remains an emergent area of research (McLeman, 2014). Hunter et al. (2015) highlight an existing empirical gap in the climate-migration literature concerning how people perceive and interpret their environment and how it shapes migration decisions. Local power structures and the social construction of knowledge – meaning the possession of knowledge and knowledge exchange on climatic events – may influence social segments, divided by race, class and gender differently (Hunter et al., 2015). Hence, varying levels of knowledge on the climate's impact may influence households or society-wide responses.

Also, conflict of any kind rarely, if ever, is attributed to a single cause (Gleick, 2014), and existing research results on the climate-conflict link remain ambiguous (Adger et al., 2014; Scheffran et al., 2012; Zografos et al., 2014). The research to date is not aligned on a specific and direct link between climate and conflict (Buhaug et al., 2014). Existing studies face the major challenge of finding adequate climate data, fail to distinguish between various types of conflict and rarely account for the complexities that explain the relationship between climatic

events, natural resources, human security and societal stability (Buhaug et al., 2014; Scheffran et al., 2012).

Morrissey claims that a comprehensive climate-migration theory remains elusive and there has been limited focus on theorizing explicitly on this nexus, and even fewer with an empirical research approach. In 2011, Black et al. developed an important conceptual model by building on Scoones' research, published in 1998, to show how human mobility embedded in the broader contextual determinants operate at a variety of scales. Scheffran (2012) highlights the importance of theorizing on the multiple pathways and feedbacks between climate, natural resources, human security and societal stability and provides a framework linking these variables. However, despite the prominence of the subject and the urgency for better conceptual models of the dynamics at play, a comprehensive climate-human analytical framework seems to be lacking in scientific literature.

In line with the emerging research agenda aimed at understanding how climatic events shape social outcomes today, this research explores the interaction of adverse climate conditions with societies, based on an empirical research approach including economic, social and political structures at multiple spatial and temporal scales. It aims to provide an analytical framework that is applicable across regions and allows for a more systematic conceptualization of how the climate interacts with societies and shapes outcomes such as migration and conflict. This research pursues this goal by drawing from existing scientific literature and the experiences and perceptions of asylum seekers, which were collected during individual semi-structured interviews with 100 migrants from 17 countries that were conducted in eight different migrant housing centers and local networks located across three German federal states. The selective sampling method was used to learn from a diverse sample of adult migrants. This paper sought to answer the following questions: how did asylum seekers perceive climatic events – if so – in their place of origin and how did it affect their daily lives and their decision to migrate; what is the societal context within which changing climate conditions are felt; and how do climatic events affect outcomes such as migration and conflict.

1.2 Theory - Developing the climate-human analytical framework

Based on major theories of an extensive interdisciplinary research field, the climate-human analytical framework will be presented in order to analyze how climatic events are linked to different aspects of societies and, ultimately, to explore how climatic phenomena translate

into social outcomes such as migration and conflict. The climate-human analytical framework, presented in Figure 2.1, was based initially on existing scientific literature in the planning phase of this research project, and was later significantly adapted to account for the empirical research results presented in this article.

The outermost circle of the climate-human analytical framework represents the various climatic events and their impacts on the environment. Then, the concepts of vulnerability and adaptation are introduced. The effects of climatic events, vulnerability and adaptation strategies are moreover analyzed within five dimensions – political/institutional, economic, environmental, demographic, and social – that represent the pillars of society, as captured in the second circle. It is important to note that the five dimensions rarely act in isolation, as they are strongly interlinked and intertwined, as depicted by the arrows in Figure 2.1. The center of the framework is comprised of possible outcomes of the climate-human interplay, including migration and conflict, which are elements of the social dimension of society.

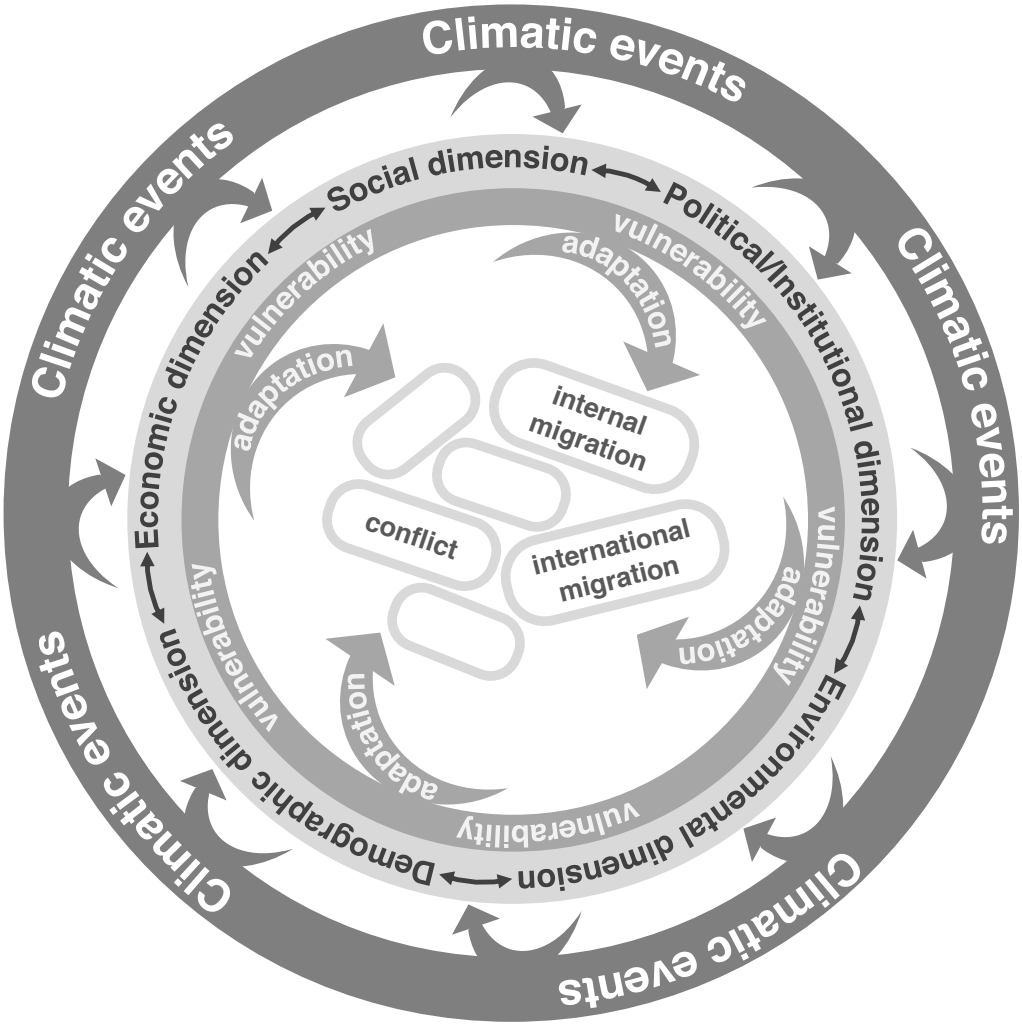

Figure 1.1 Climate-human analytical framework

Climatic events

The social impact of climate has been a subject of academic study for many centuries. In 1748, Montesquieu argued that climate can influence the nature of men and societies and determine its structure and prosperity (Montesquieu, 1746). The questions of whether and how climate affects people's lives, as well as how much and why it matters continue to be studied (Carleton & Hsiang, 2016). Over the last decade, researchers have made advances in answering these questions with a mostly quantitative approach, mixing data and methods from the climate, social, and statistical sciences and leveraging the power of machine learning (Ibid.).

Climatic events, including slow-onset climate change such as droughts and land degradation and suddenly occurring extreme weather and climate-related events such as floods and storms affect natural and human systems in numerous ways (Berlemann & Steinhardt, 2017). Early studies in this research field analyzed the environmental signal separately, overlooking

important contextual factors that impact societies and interact with the environment. However, researchers today are increasingly pondering over how climatic events and other contextual factors influence the rate of migration (Hunter et al., 2015) and spur conflict (Scheffran et al., 2012).

Vulnerability - and adaptation strategies - to climatic events

Existing literature suggests that the impact of climatic events on human beings and societies is shaped by the specific vulnerability of each individual, household and society (Brzoska & Fröhlich, 2015; Scheffran et al., 2012). Vulnerability encompasses a variety of concepts (IPCC, 2014) and the field of vulnerability studies is fragmented between disciplinary and professional understandings (Busby et al., 2014). Broadly speaking, vulnerability to climate impacts may include exposure and sensitivity to climatic events, and adaptive capacity (Scheffran et al., 2012; IPCC, 2007). Therefore, vulnerability is measured by analyzing an entity's adaptive capacity to and the impact of climatic events.

The impacts of climatic events vary across different segments of society (Berlemann & Steinhardt, 2017), with the poorest and socially marginalized generally being the most vulnerable (Otto et al., 2017). Vulnerability is heavily shaped by social, demographic, and institutional factors including gender, age, culture, education, ethnicity, and financial assets (Otto et al., 2017). For instance, households and firms are expected to adapt to climate impacts by adjusting their behavior; though, their vulnerability also depends on public policy at the national level to overcome market failures, correct policy distortions and incentivize private adaptation. It also depends on national choices about economic diversification, spatial planning, urban design and infrastructure; and due to the global scope of climatic events, system-wide aspects of adaptation also affect the vulnerability of households and societies (Fankhauser, 2016). Existing adaptation failures are a result of their high cost (Berlemann & Steinhardt, 2017), poor access to credit to finance them, incorrect or limited information about their benefits, weak government institutions and perverse political incentives, and limited access to technology (Carleton & Hsiang, 2016).

The five dimensions of society: political/institutional, economic, environmental, demographic, and social dimension

The impacts of climatic events are more pronounced in less developed countries that have weak institutional capacity (Millock, 2015) and where negative economic shocks trigger

regime changes (Kim, 2014). Climate challenges require effective governance structures and planning for adaptation to reduce society's overall vulnerability to climatic events. These broadly include three areas of government action, namely providing a policy framework that incentivizes private adaptation, constructing climate-resilient public goods such as infrastructure, and assisting vulnerable groups, that cannot adapt sufficiently themselves (Fankhauser, 2016).

Research on the impact of climate on economic outcomes began in the agricultural sector, where the effects of climatic events are more pronounced (Auffhammer & Schlenker, 2014). Solar radiation, temperature, and precipitation are the main drivers of crop growth. For instance, droughts and floods impact agriculture as they decrease crop yields or destroy them with the occurrence of weed, insect pests and plant diseases (Berlemann & Steinhardt, 2017). To date, the richest empirical evidence is known of private adaptation efforts in the agricultural sector (Fankhauser, 2016), which include adjusting cultivars, shifting in planting dates, and even moving entire areas where crops are grown (Auffhammer & Schlenker, 2014). Moreover, traditional technologies - such as rainwater harvesting in the Semi-Arid region of Brazil - are retrieved and adapted to contemporary water scarcity by rural farmers (Lindoso et al., 2018). In the short-term, farmers may adjust by adapting the size of their farm or moving temporarily into non-farm activities or in more developed markets, and farmers may have access to weather insurance (Fankhauser, 2016).

Extreme temperatures may have direct economic consequences, including a decrease in gross domestic product and overall social welfare in both the short- and long-run, and include damage to human health, reductions in labor productivity and supply, and possible reduction in the rate of human capital accumulation (Heal & Park, 2016). Hence, trade is also affected, as high temperatures that reduce productivity diminish the quantity of goods exported from a country, and especially extreme weather and climate-related events tend to reduce national incomes and decrease the capacity to import (Carleton & Hsiang, 2016). The macro-economy is impacted by climatic events across regions and different contexts; each 1°C-increase in temperature lowers economic production by roughly 1 to 1.7 percent (Ibid.). Though, the overall social welfare impact always depends on existing or emerging possibilities of adaptation, such as outdoor labor supply shifts to cooler hours of the day during heat waves (Heal & Park, 2016). Moreover, the direct relationship between climate and energy merits mentioning as increasing temperatures provoke demand surges. For example, households adjust their energy consumption and demand for associated products like air conditioning in

response to climate impacts (Fankhauser, 2016). Energy is the largest contributor to anthropogenic climate change, though energy systems moreover represent an adaptation strategy, enabling cooling, heating, irrigation, trade, and so forth (Carleton & Hsiang, 2016).

Climatic events affect societies in every dimension, including the environmental dimension with its ecosystem goods and services. The human-environment relation affects every important social and cultural aspect ranging from human settlement to human's attachment to a specific place (Black et al., 2011). Climatic events reduce renewable surface water and groundwater resources significantly in most dry and tropical regions, which generally intensifies competition over water in the entire climate-human interaction (IPCC, 2014). Droughts may significantly decrease water resources in urban areas, causing electricity shortages in areas where hydropower is a source and increasing the risk of water-related diseases due to widespread use of contaminated water (Ibid.). Overall, the vulnerability of households and societies increases where the dependence on renewable natural resources for survival is direct and high (Brzoska & Fröhlich, 2015).

The population structure and growth are also impacted by climatic events because climatic events may more acutely affect marginalized subgroups such as women or low-income segments. For instance, the demographic structure of a society may alter when disproportionate migration of wealthy older individuals and young and low-income individuals may be leaving simultaneously a region hit by climatic events (Deryugina, 2012). Moreover, rapidly-changing shifts in population trends can increase the strain on renewable water availability and increase a society's vulnerability to climate impacts (Gleick, 2014).

The climate exerts significant influence over human systems on numerous social scales, including migration and conflict. Though, social effects moreover concern mortality and health as climatic events increase health inequalities and disproportionately aggravate the health of people living in poverty and those with preexisting health limitations (Costello et al., 2009; Otto et al., 2017). Climatic events have lasting impacts on fetuses and infants as they alter early development, long-run health and well-being, which could be due to rainfall-related reduction in agricultural income and reduced nutrition (Carleton & Hsiang, 2016). Moreover, hot and cold environmental temperatures increase death rates significantly (Ibid.). Research in sub-Saharan Africa brought to light deteriorating economic conditions that resulted from rainfall-related income shocks. Most notably, increasing rates of the human immunodeficiency virus (HIV) infection were observed in rural areas because women engage in "transactional" intercourse to compensate for income shortfalls during periods of drought.

Specifically, droughts result in a seven to ten percent loss in annual income, leading to an 11% increase in HIV infection risk for both men and women (Burke et al., 2014).

Possible outcomes - migration and conflict - of the climate-human interplay

Human mobility is a global and ancient phenomenon with an ever-changing complexity (Cummings, 2015). Migration can be understood as an epiphenomenon, occurring as a result of underlying factors that are changing constantly and simultaneously (Geddes and Scholten 2016). These underlying factors broadly include global economic inequalities, conflict, demographic change, and environmental factors (Black et al., 2011; Geddes & Scholten, 2016).

Migration decisions can include drivers such as climatic events, socio-economic, political, environmental and demographic processes of society. And, they may also depend on individual and household characteristics such as age, marital status and intervening obstacles and facilitators that include political and legal framework and social network in sending and receiving locations (Hunter et al., 2015). Environmental factors or climatic events are usually merely a contributing factor among multiple motivations that influence an individual's decision to migrate, unless made in the wake of an extreme weather and climate-related event (Brzoska & Fröhlich, 2015).

Migration studies have witnessed tremendous progress in the understanding of the environment over the past 20 years (Hunter et al., 2015; Cattaneo & Peri, 2015). In the 1990s, researchers began to analyze how environmental factors shape migration decisions, mainly motivated by bold, scientifically untested projections of so-called "climate refugees" (Myers, 2005). While all types of climatic events may impact societies and contribute to human mobility, the literature highlights that, due to the slow-onset processes of climate change, migration is driven by more diverse factors and is expected to be more extensive than human mobility resulting from extreme weather and climate-related events (Brzoska & Fröhlich, 2015; Laczko & Aghazarm, 2009). Climate-related extreme events present a much smaller impact, especially on permanent migration than temperature and precipitation (Bohra-Mishra et al., 2014). However, slow-onset events such as droughts, may fuel both long- and short-term movement in a variety of settings (Hunter et al., 2015). Despite this evidence, the policy response to date tends to favor sudden-onset events such as floods, where relief efforts have precedence and can be targeted (Mueller et al., 2014).

Scientific evidence has emerged on the relationship between climatic events and international migration, as changes in precipitation induce international migration from poor to rich countries (Coniglio & Pesce, 2015). The rate of international migration increases when mounting temperatures hit crop-damaging levels and moisture declines, especially in agriculturally-dependent areas (Bohra-Mishra et al., 2014; Cai et al., 2016). Moreover, research findings show that international migration could be caused by local amenities, such as environmental quality and health conditions, or by an increased rural-urban migration that leads to a downward trend in urban wages (Berlemann & Steinhardt 2017; Marchiori et al., 2012). In fact, in sub-Saharan Africa, emigration to urban areas and international migration show responsiveness to weather (Marchiori et al., 2012), but cross-border migration from urban Mexico to the United States does not alter due to climate effects (Nawrotzki et al., 2015). Literature shows even more mixed results concerning the link between extreme weather and climate-related events and international migration. Authors suggest that weather-related disasters cause international migration (Coniglio & Pesce, 2015; Reuveny, 2007), however, similar quantitative studies did not find evidence for the effect specifically in middle-income and poor countries (Beine & Parsons, 2015; Cattaneo & Peri, 2015).

Literature presents a somewhat similarly ambiguous picture on internal migration. Robust empirical evidence highlights that in general, climatic factors such as precipitation and temperature tend to influence internal migration; and most studies find that rainfall deficits especially increase permanent internal migration (Henry et al., 2003; Berlemann & Steinhardt, 2017). The agricultural sector is the main transmission channel in numerous studies, where the link between temperature and internal migration was detected (Dallmann & Millock, 2017; Mueller et al., 2014) and only a few studies fail to establish the connection (Bilsborrow & Henry, 2012; Di Falco et al., 2011). There is general consensus amongst researchers today that extreme climatic events lead to short-term internal migration (Berlemann & Steinhardt, 2017). However, in regard to medium- and long-term migration, results remain mixed as some research find systematic effects and others do not (Bohra-Mishra et al., 2014; Goldbach, 2017).

Based on the presented literature, migration decisions seem to result from two opposing influences of climate and society, specifically deteriorating economic conditions and a lack of safety may instigate migration, while the same conditions simultaneously may diminish household resources and hence may reduce migration (Berlemann & Steinhardt, 2017; Kleemans, 2015). Accordingly, households may use migration as a coping strategy after

sudden negative income shocks, such as agricultural crop loss due to a drought and send a household member elsewhere to earn additional income; or as an investment strategy to increase future expected income and benefit from higher wages elsewhere (Kleemans, 2015). These strategies strengthen affected communities through remittances (Scheffran et al., 2012), though the latter requires an initial investment, which might not be possible for households that face liquidity constraints (Kleemans, 2015). The impact of climate depends on the vulnerability of households and societies and based on this idea, Cattaneo claims that a decline in agricultural productivity in middle-income countries drives people to move away from rural areas and a long-run increase in temperature, which has a negative effect on the agricultural income of rural population in very poor countries generates a "poverty trap" and decreases the probability of migration and eventually leads to immobility.

Migration decisions are complex, usually based on multiple drivers and yet, migration is just one possible outcome of the climate-human interaction. For instance, a farmer challenged by a drought could seek to escape, join an insurgency group and hence enter into a conflict, adjust cultivars or move temporary into non-farm activities. Therefore, climatic events may be a contributing factor to migration and conflict, as of other, no less important phenomena (Carling & Talleraas, 2016).

Across academic disciplines, researchers analyze to what extent climatic events are responsible for interpersonal violence, conflict or non-state conflict and political instability (Hsiang et al., 2013). Studies on this phenomenon date back to 10,000 BC and evidence shows that the association of climate and conflict has been observed across all types of conflict, human history, regions of the world, income groups and the various duration of climatic events (Ibid.). However, the physiological effects linking climate to conflict remain unknown and while some long-term studies tend to find coincidence, recent research are less conclusive on the links between climate and conflict (Scheffran et al., 2012).

Existing evidence shows a positive correlation between rising temperatures, decreasing precipitation, and aggressive or violent behavior (Hsiang et al., 2013). The interpersonal violence ranges widely from horn-honking while driving (Kenrick, 1986), antisocial behavior and domestic violence within households (Card, 2011) to violent crimes such as assault and rape (Hsiang et al., 2013). Carleton claims that the relationship between higher temperatures and increasing collective violence in diverse settings is linear, with violence increasing roughly 11% per standard deviation in temperature. There exist some causal associations that

lead to the claim that, in some contexts, changes in climate also increase the likelihood of escalating tension between groups (Hsiang et al., 2013).

Today, a major policy preoccupation is that climatic events may increase security risks through alterations in the hydrological cycle and the quantity, quality and variability of water resources (Zografos et al., 2014). Resource scarcity is considered an important link to the relationship between climate and conflict. In fact, climatic events contribute to the likelihood of conflict if it coincides with other conflict drivers such as ethnic polarization, weak political structure and low levels of economic development (Brzoska & Fröhlich, 2015; Homer-Dixon, 1994). In different low-income settings, political instability was associated with low water availability or extreme temperatures (Hendrix & Salehyan, 2012). Moreover, where climatic events increase actual or perceived inequality in a society, conflicts may arise from attempts to redistribute assets (Mehlum et al., 2006). Similarly, increases in the price of food due to a drought can be linked to conflict, as riots may erupt as a result of the government's perceived inability to maintain stable prices stable and food affordable (Zhang et al., 2011). Moreover, especially in low-income agricultural settings, rainfall extremes and El Niño adversely affect agricultural income, which increase interpersonal violence, property crime and intergroup conflict (Carleton & Hsiang, 2016).

1.3 Methods

A qualitative phenomenological research approach with individual semi-structured interviews and participant observations was applied to capture detailed narratives of the lived experiences, perceptions, and thoughts of migrants who moved to Germany via irregular means.

Data collection

Individual semi-structured interviews were conducted in German migrant housings with 105 migrants from 17 countries, and with one stateless person. However, due to a number of challenges, including missing information of interviewees, one inexperienced interpreter, and unsigned consent forms, a total of 100 interviews were validated and analyzed. The data collection process was undertaken between the end of December 2016 and mid-April 2017. Each interview lasted between 30 and 75 minutes, and was conducted in the language of the respondent's choice. The interviews in Arabic, Kurdish Kurmanji and Sorani, Somali, Persian, Tigrinya, Dari Persian, Turkish, and Urdu were conducted with the assistance of

experienced interpreters while those in German, English, and French were conducted directly with the principal researcher. To ensure the safety and comfort of the interviewees, the interviews were held either in the privacy of the interviewee's quarters or in an undisturbed location, as agreed upon by both parties. All interviewees were informed orally and in writing about the purpose, specifying the advantages and disadvantages, and terms of confidentiality of the research project, in addition to the voluntary nature of their participation. Both the interviewee and interpreter were asked to sign a consent form prior to starting each interview. The approval to conduct interviews in the different migrant housings was sought from the directors of the facilities and, in specific cases, from the federal government's regional board.
The individual semi-structured interviews consisted of open-ended questions that addressed general information about the interviewee's place of origin and the motivations for leaving it. Moreover, the impact of possible adverse weather and climate conditions on the interviewee's daily lives were questioned, followed by an inquiry on resource use, food availability, perceived tensions or conflict and inflow or outflow of migrants. The interviews were documented following handwritten protocols, and were later transcribed into a digital datasheet. To make sense of the collected data, a thematic analysis was conducted using the NVivo software while field notes from participant observation and non-verbal communication during the interviews were triangulated to support the reflections and analysis.

Study participants

To capture a diverse and comprehensive sample of interviewees, the interviews were conducted in four initial reception facilities and four follow-up accommodations located throughout the federal states of Hesse, Berlin, and Brandenburg. Purposive sampling was applied to obtain a large and diverse research sample, for which the criteria were that interviewees be migrants in Germany who were at least 18 years of age. The popularity of the sports classes offered by the researcher and the 'snowball' method helped to recruit a larger number of migrants who volunteered to participate in the study and created the opportunity to observe daily interactions. The recruitment of interviewees was stopped once a sense of saturation of information was attained. The study population resulted in a highly-cultural heterogeneous group as the demographic profile of interviewees in table 0.1 of this thesis shows (Table 0.1).

Methodological considerations and limitations

The recruitment process proved to be a major challenge because many migrants were reticent or anxious to participate, most likely because they did not want to relive past trauma. The consent form presented an additional hurdle, as some migrants were apprehensive about signing it while others were visibly ashamed of being illiterate. Identifying qualified interpreters was also demanding, especially because the interviews were set to be conducted in nine languages. The gender and cultural background of the interpreters put forth an added challenge, as manifested by the reluctance or refusal of male interviewees to participate with female interpreters.

While great effort was put into finding qualified interpreter for each interview, one cannot conclusively state that all potential misunderstandings and misinterpretations were avoided. The identity of the interviewer – a white European woman and outsider of the migrant housing communities – represented a further limitation, as language, gender, and cultural barriers were likely to have influenced the content and amount of data shared. However, an attempt to balance these limitations was made through careful attention to the interview context and extensive dialogue with the interviewees. Moreover, in response to the feedback provided by the first round of interviewees who explicitly refused to be recorded, a recording device was not used to document the interviews. This research recognizes its one-sided focus, as it solely includes migrants that already moved to Germany. Why some people stay in one place whereas others choose to leave is a crucial question to understanding the decision to migrate and should be contemplated in future studies.

Given the aforementioned limitations, as well as the relatively small research sample size of 100 interviewees, this research does not claim to be representative of the overall migrant population in Germany.

1.4 Results

The findings of this empirical research illustrate people's perception of climatic events, differences in vulnerability to climatic events across countries and the impact of local government and public policies on the climate-human interaction and outcomes. Reported human mobility and implications of conflict within different contexts were further uncovered.

Perception of climatic events

Findings of this research reveal that climatic events were either perceived or even affected the living conditions of more than half of interviewees (56%) in their place of origin (Figure 1.2). Interviewees who 'perceived' changes in climate or weather-related conditions mainly reported about increases in temperature, droughts and floods that impacted their relatives or acquaintances in their place of origin. However, interviewees who had to adapt their professional or personal daily lives due to climate impacts were considered to be directly 'affected'. Many interviewees were well-aware of the changing climate in their region and provided details as for instance an Ethiopian shop owner from Kebri Dahar explained: "because of the droughts, livestock suffered and died and therefore there was less milk available and prices of milk, vegetables and fruits increased."

Nearly half (44%) of interviewees reported no changes in climate or weather conditions in their place of origin. While some African interviewees did not perceive any changes, nearly all reported about water shortages and they considered a recurring or even constant lack of water to be normal. If at all existent, climatic events represented for many interviewees merely a subtle unperceived factor and other societal dimensions overshadowed a possible perception of climate's impact, as the statement of an Iraqi demonstrates: "in my town there are only murderers and no changes in weather."

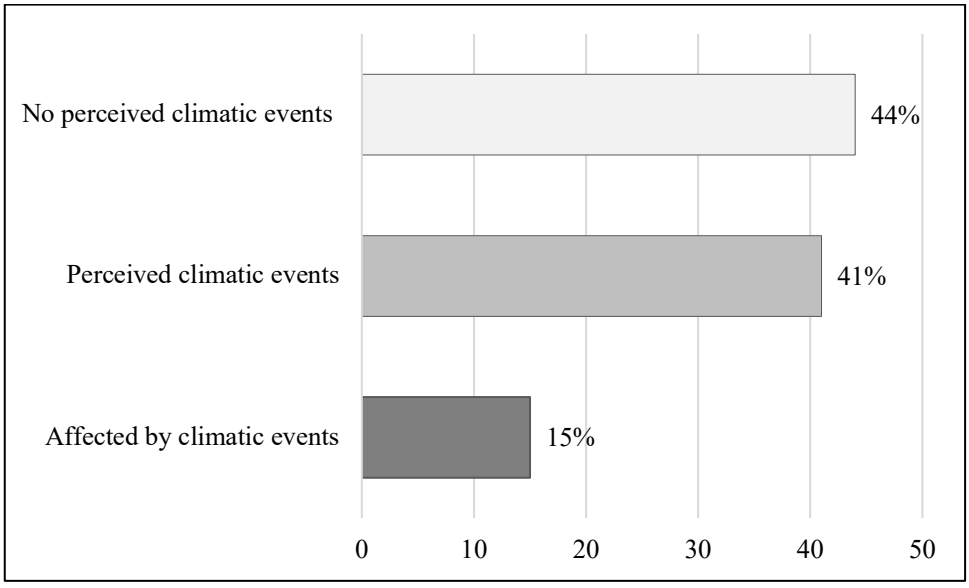

Figure 1. 2 Perception and impact of climatic events on interviewees in their place of origin

Vulnerability to climatic events

Drawing from a large array of narratives from interviewees, results show that while climatic events are felt across regions and countries (Figure 1.3), households and societies differ with respect to their vulnerability to it and therefore climate affected their well-being and productivity differently. Especially farmers, pastoralists and interviewees from rural poor societies were most impacted by climatic events. For instance, ten out of 34 Syrian interviewees, who worked in the agriculture sector were affected by climatic events in their everyday lives. However, it is important to note that ten other Syrian interviewees who did not perceive climatic events lived in urban centers (Figure 1.4). An interviewee from the surroundings of Aleppo explained that her family only survived the droughts, because they had groundwater and a river that ran through their property, which had little water, but still enough to feed their cattle. As she explained, the existence of the river made her entire village less vulnerable to climate's impact, compared to a nearby village that was heavily affected by droughts.

The drastic impact of droughts and rainfall-related floods was further depicted by interviewees from rural and poor regions in Africa. A young interviewee from Mandera explained that the entire population in his region is impacted by recurring droughts and therefore today, there is nearly no agricultural activity anymore, many pastoralists gave up their profession as their cattle died or was stolen. He particularly recalled the drought in 2007, because his father lost all his cattle and they survived only with the help of the church. He said that the majority of the population is poor and relies on aid agencies, the church or they even started hunting again. Interviewees from Eritrea, Ethiopia, Somalia and Kenya explained that the effects of climate are particularly strong on farmers and pastoralists as these segments of societies have less access to alternative job opportunities.

A Syrian interviewee from Tartus recalled how farmers adjusted to the altering climate. His region was known for exporting apples, but today they cultivate kaki, kiwi and oranges, because other fruits started to have diseases due to the heat and droughts.

- Not perceived climatic events
- Perceived climatic events
- Affected by climatic events

Figure 1.3 Impact of climatic events on interviewees in their place of origin

- Not perceived climatic events
- Perceived climatic events
- Affected by climatic events

Figure 1.4 Impact of climatic events on interviewees from Syria

Local government and public policies

While all Iranian interviewees perceived climatic events, none was affected or knew someone who was. They explained that farmers only survived the significant decrease in precipitation and droughts between the year 2002 and 2003, due to the abundance of groundwater, because some farmers had weather insurance and the Iranian government provided financial support to those farmers who lost their crops. Syrian interviewees also recalled the regional government's financial support for some farmers that lost their crops during droughts. However, many who suffered from climate's impacts had to rely on support from family members or seek other adaptation strategies. Kenyan and Pakistani interviewees reported about annually-recurring floods and consequent landslides in their respective cities, which have devastating consequences for the effected population, though all complained about a lack of government support.

Moreover, worse than an absent government are harmful policies or government actions. Syrian and Iranian interviewees reported that their local governments ordered the deforestation of large regions of the country. In the case of Syria, the deforestation had the goal to facilitate fighting during the conflict. Moreover, interviewees reported about the obstruction of discourse and information exchange on climatic events. A Syrian interviewee from Damascus explained, that the Assad regime did not allow anyone to talk about the droughts in Syria and an Iranian from Malayer mentioned the following: “once the Mullah said that the climate gets drier, because the women do not wear properly their headscarves.”

Climatic events, human mobility and conflict

All African interviewees complained about decreasing quality and quantity of well water, and completely dry wells during droughts and in the summers. Kenyans reported that since 2010 the dry season extended to four months, in contrast to three months. An interviewee from a village near Dekemhare recalled, that between 2008 until 2015 it nearly never rained. Syrian interviewees who worked in the agricultural sector mentioned significant water scarcity and continuous reduction in groundwater since 1997. Overall, water scarcity was reported by the majority of interviewees and adaptive strategies such as investing in a generator for electricity, which was also used to pump up water from the well, buy expensive water in bottles or use the river water, were mentioned.

A Kenyan interviewee described the society in Mandera as ‘trapped’, because the continuous droughts have impoverished the region significantly and only a few rich people have the resources to move to neighboring villages during the driest months of the year. However, he explained that moving is dangerous because migrants are chased by the receiving communities that are from different ethnicities. He highlighted cattle raids that increased during periods of drought and mentioned the desperate situation, when he recalled a friend, who committed suicide, because all his cows died, due to the drought.

International migration was mainly reported by Syrian interviewees. Especially those working in the agricultural business in the northeastern Al-Hasakah governorate were severely impacted by the three years of consecutive droughts between 1999 until 2000. They explained that during this period, those who had the financial means moved to Europe or the United States, or they sent their children abroad; those with less financial means moved to Syrian urban centers. An interviewee from Qamishli recalled, that due to their family’s serious financial challenges during the droughts, her husband wanted to move as well, however, as he

was the oldest son of his family, his mother did not allow him to leave. While different Syrian interviewees narrated about the dire straits during the droughts, they also mentioned a significant increase in violence.

Interviewees from Kenya, Pakistan and Syria reported about temporary internal migration, due to recurring severe rainfall-related floods. An interviewee from Kawangware reported about multiple floods that she witnessed throughout her life, “it always started with heavy rains that carry away houses. In 2009 my parents sent us children to our grandmother and in 2015 we moved for six months to Kabete. Once the flood is over, we always move back to the remaining of our house […] lots of people die during the floods.”

A farmer’s wife from Al-Malikiyah, in northeast Syria explained, that her family suffered the most in the three years of consecutive droughts between 2006 and 2008. She disclosed, “as many other farmers in our region, we were not able to resist the drought in 2008 as our livestock died and we lost our entire crops. […] Our serious financial challenges forced me to sell our house and land for a symbolic price and we moved to Damascus.” Multiple interviewees from different regions in Syria reported about the dire straits during the droughts that started in 2006 and remembered family members, friends and acquaintances that moved to urban areas to find a job.

1.5 Discussion

Narratives of this research point to the fact that climatic events are perceived in diverse manifestations across regions. Regardless of the background, 56 interviewees were able to explain how changing climate conditions were perceived or affected their daily lives in their place of origin. Yet, nearly half (44%) of interviewees did not perceive climatic events, however, reported resource shortages. This is not surprising, as in part, shifts in climate may take decades to be clearly understood and assimilated, and they are embedded in cultural and economic practices and oftentimes perceptions and actions only occur when a crisis is acute (Brzoska & Fröhlich, 2015). Moreover, narratives highlight that climatic events often only represent a subtle factor impacting societies, as other societal challenges, such as the lack of job opportunities, overshadow the climate’s impact. It remains debatable to what extent inequalities in local power structures and access to knowledge on climatic events, influenced interviewee’s perception, though presented narratives highlight, that irrespective of the individual’s background, climatic events may impact peoples’ decisions and behavior. Analyzing the perception of climatic events fills an existing research gap (Hunter et al., 2015)

and fosters understanding of the climate-human interaction, highlighting climate's significant influence on the political and social dimensions of society.

In line with existing scientific literature, the narratives of interviewees depict a mixed picture on the link between climate and human mobility, highlighting that every decision to migrate is unique (Black et al., 2011; Morrissey, 2013). The experiences and perceptions of asylum seekers show that climate may lead to a 'poverty trap', cause migration as an investment strategy, a coping strategy or climate even constitutes a risk to survival, forcing people to migrate as a choice of last resort. Moreover, interviewees reported increased violence during droughts, though, it was mentioned in combination with other societal challenges such as ethnic polarization, weak political structure and low levels of economic development. This is in line with existing literature that climatic events are considered to contribute to conflict, if coinciding with other conflict drivers (Brzoska & Fröhlich, 2015; Homer-Dixon, 1994). Overall, it is very difficult to isolate the effect of climate phenomena on migration and conflict, as it depends on the type of climatic events, its interaction with the dimensions of society and the vulnerability of the impacted household or society.

The empirical results of this research strengthen existing literature on the fact that the specific type of climate impact needs to be evaluated and addressed, as both extreme weather and climate-related events and slow-onset processes of climate change and variability exert remarkable influence over societies (Buhaug et al., 2014; Scheffran et al., 2012;). Moreover, it further validates that there is no mechanic link in the climate-human interaction that causes the same social response across regions and while climate is not the only factor, it is certainly an important one, influencing societies in numerous dimensions and at many scales (Carleton & Hsiang, 2016). Results show that even among neighboring villages with similar characteristics, climate's impact on households, the nature of societies and the performance of economies alters depending on the vulnerability specific to each entity. Climatic events show considerable local variations, with varied impacts on different segments of society, as in this research, especially farmers, pastoralists and interviewees from rural poor societies were significantly impacted. Moreover, findings confirm existing research that adaptation strategies across sectors and regions show great dissimilarities, though their analysis is essential, because they alter the overall effect of climatic events (Carleton & Hsiang, 2016).

It is important to keep in mind that the vulnerability and adaptation strategies are important elements of the climate-human interaction and that, as indicated by the Paris Agreement, the consequences of climatic events should be mitigated by reducing vulnerability and improving

adaptive capacities. Vulnerability to the effects of climatic events commonly increases where the dependence on natural resources for survival is direct and high; this was evident as farmers and pastoralists were particularly vulnerable, since they depend on rainfall, existing groundwater and functioning wells for their livestock and harvests. Moreover, narratives support the case that in less developed countries the infrastructure, social safety nets and economic resources needed to support vulnerable groups hit by climate impacts are, in many instances, insufficient (Otto et al., 2017). The different distribution of climatic impacts across regions and segments of society lead to different distributions of outcomes, which can be considered an important source of inequality.

1.6 Conclusion

This paper contributes to efforts at understanding the interplay between climatic events and society. To this end, it has examined existing related scientific literature and explored the individual experiences, perceptions and decisions of 100 asylum seekers from 17 countries hosted in German facilities. From this, a conceptual framework has been generated, which depicts the complex interaction of the climate-human interplay. To the last point, this study sought to explore how climatic events are perceived and embedded within societies across countries and regions and how climate phenomena interact with migration and conflict.

While the semi-structured interviews with asylum seekers thought to be valuable as a contribution to existing related literature, the paper's principal value lies in its attempt at elaborating a climate-human analytical framework applicable on the presented context. This framework is thought useful for describing and analyzing how climate impacts households and societies. It depicts theories and mechanisms at the macro level to think through how climatic phenomena might translate into social outcomes such as migration and conflict. The climate-human analytical framework is useful for academia, as it accounts from numerous findings in literature and explains them in a consolidated system, seeking to contribute to a major research gap by focusing on exploring and theorizing on the complex mechanism at play. Moreover, considering the wide-ranging impacts of climate, outlined in this research and the midst of contemporary climate change, environmental considerations should play a more central role in mainstream migration studies. The conceptual framework could also be a helpful tool for policy makers, development workers, NGOs and security analysts who are concerned with the societal impacts of climatic events. Results of this study highlight the importance of the role of the local government and its public policies in implementing

successful adaptation strategies as the comparison of narratives of Iranian interviewees and those of primary Syrians demonstrate.

Researchers and policy makers have an important role in addressing the entire spectrum of climatic events and responding to existing adaptation gaps with mechanisms to cope with the community strain and strategies for capacity building, technical assistance and support. Reported local government's lack of support during climatic events or even obstruction of knowledge on climate change points to the urgent need, that policy makers take responsibility to protecting the most vulnerable populations by providing emergency services and social safety nets in aiding post-disaster recovery and long-term effective response-plans for recurring climatic phenomena. If governments do not take responsibility, human security including livelihoods, health and standard of living could get jeopardized and lead to sociopolitical instability, political unrest, insurgencies and state failure (Brzoska & Fröhlich, 2015).

Until present, the interplay of climatic events and societies seems to remain unpredictable to some extent, as climate's impact depends on the type of climatic events, the multiple dimensions of society and vulnerability to climate change, including adaptation strategies. Moreover, the significant economic and social burdens caused by climate's impact on modern populations are expected to increase in the future and adaptation to climate change is a long-term, iterative process that will extend over many decades (Carleton & Hsiang, 2016). Therefore, scientific research and policy intervention is required now, if climate's impacts are to be dealt with in a way which does not lead to increased suffering, but facilitates reductions in inequality and improvements in well-being.

1.7 References

Auffhammer, M., & Schlenker, W. (2014). Empirical Studies on Agricultural Impacts and Adaptation. *Energy Economics, 46*, 555-561. https://doi.org/10.1016/j.eneco.2014.09.010

Beine, M., & Parsons, C. (2015). Climatic Factors as Determinants of International Migration. The Scandinavian Journal of Economics, 117(2), 723-767. https://doi.org/10.1111/sjoe.12098

Berlemann, M., & Steinhardt, F.S. (2017). Climate Change, Natural Disasters, and Migration—a Survey of the Empirical Evidence. *CESifo Economic Studies, 63*(4), 353-385. https://doi.org/10.1093/cesifo/ifx019

Bilsborrow, R.E., & J.F. Henry, S. (2012). The Use of Survey Data to Study Migration–Environment Relationships in Developing Countries: Alternative Approaches to Data Collection. *Population and Environment, 34*(1), 113-141. https://doi.org/10.1007/s11111-012-0177-1

Black, R., Adger, W.N., Arnell, N., Dercon, S., Geddes. A., & Thomas, D. (2011). The Effect of Environmental Change on Human Migration. *Global Environmental Change, 21*(1), s3-s11. https://doi.org/10.1016/j.gloenvcha.2011.10.001

Bohra-Mishra, P., Oppenheimer, M., & Hsiang, S. (2014). Nonlinear Permanent Migration Response to Climatic Variations but Minimal Response to Disasters. *Proceedings of the National Academy of Sciences, 111*(27), 9780-9785. https://doi.org/10.1073/pnas.1317166111

Brzoska, M., & Fröhlich. C. (2015). Climate Change, Migration and Violent Conflict: Vulnerabilities, Pathways and Adaptation Strategies. *Migration and Development, 5*(2), 190-210. https://doi.org/10.1080/21632324.2015.1022973

Buhaug, H, Nordkvelle, J., Bernauer, T., Böhmelt, T., Brzoska, M., Busby, J.W., Ciccone, A., Fjelde, H., Gartzke, E., Gleditsch, N.P., Goldstone, J.A., Hegre, H., Holtermann, H., Koubi, V., Link, P.M., Lujala, P., O′Loughlin, J., Raleigh, C., Scheffran, J., Schilling, J., Smith, T.G., Theisen, O.M., Tol, R.S.J., Urdal, H., & Uexkull, N. (2014). One Effect to Rule Them All? A Comment on Climate and Conflict. *Climatic Change, 127,* 291-397. https://doi.org/10.1007/s10584-014-1266-1.

Burke, M., Gong, E., & Jones, K. (2014). Income Shocks and HIV in Africa. *The Economic Journal, 125,* 1157-1189. https://doi.org/10.1111/ecoj.12149

Burrows, K., & Kinney, P. (2016). Exploring the Climate Change, Migration and Conflict Nexus. *International Journal of Environmental Research and Public Health, 13* (4), 443-17. https://doi.org/10.3390/ijerph13040443

Busby, J.W., Smith, T.G., & Krishnan, N. (2014). Climate Security Vulnerability in Africa Mapping 3.01. *Political Geography, 43* (C), 51-67. https://doi.org/10.1016/j.polgeo.2014.10.005.

Card, D., & Dahl, G.B. (2011). Family violence and football: The effect of unexpected emotional cues on violent behavior. *Q. J. Econ, 126*, 103-143. https://doi.org/10.1093/qje/ qjr001

Carleton, T., A., & Hsiang, S.M. (2016). Social and Economic Impacts of Climate. *Science, 353* (6304), 9837-37. https://doi.org/10.1126/science.aad9837

Carling, J., & Talleraas, C. (2016). Root Causes and Drivers of Migration. Implications for Humanitarian Efforts and Development Cooperation. *Peace Research Institute Oslo (PRIO).*

Cattaneo, C., & Peri, G. (2015). The Migration Response to Increasing Temperatures. *Centro Euro-Mediterraneo sui Cambiamenti Climatici RP0260*, 1-46.

Coniglio, N.D., & Pesce, G. (2015). Climate Variability and International Migration: An Empirical Analysis. *Environment and Development Economics, 20* (04), 434-68. https://doi.org/10.1017/S1355770X14000722

Costello, A., Abbas, M., Allen, A., Ball, S., Bellamy, R., Friel, S. (2009). *Managing the Health Effects of Climate Change. The Lancet UCL, 373* (9676), 1693-1733. https://doi.org/10.1016/S0140-6736(09)60935-1

Cummings, C., Pacitto, J., Diletta, L., & Foresti, M. (2015). Why People Move: Understanding the Drivers and Trends of Migration to Europe. *Overseas Development Institute (ODI),* Working Paper 430.

Dallmann, I., & Millock, K. (2017). Climate Variability and Inter-State Migration in India. *CESifo Economic Studies, 63* (4), 560-94. https://doi.org/10.1093/cesifo/ifx014

Deryugina, T. (2012). How Do People Update? the Effects of Local Weather Fluctuations on Beliefs About Global Warming. *Climatic Change, 118* (2), 397-416. https://doi.org/10.1007/s10584-012-0615-1

Di Falco, S., Mahmud Y., Kohlin, G., & Ringler, C. (2011). Estimating the Impact of Climate Change on Agriculture in Low-Income Countries: Household Level Evidence From the Nile Basin, Ethiopia. *Environmental and Resource Economics, 52* (4), 457-78, https://doi.org/10.1007/s10640-011-9538-y

Fankhauser, S. (2016). Adaptation to Climate Change. Centre for Climate Change Economics and Policy. Working Paper, 287, 1-38.

Geddes, A., Scholten, P. (2016). The politics of migration & immigration in Europe. 2nd edition. Retrieved from http://dx.doi.org/10.4135/9781473982703

Gleick, P. H. (2014). Water, Drought, Climate Change, and Conflict in Syria. *Weather, Climate, and Society, 6* (3), 331-40. https://doi.org/10.1175/WCAS-D-13-00059.1

Goldbach, C. (2017). Out-Migration From Coastal Areas in Ghana and Indonesia-the Role of Environmental Factors. *CESifo Economic Studies, 63* (4), 529-59, https://doi.org/10.1093/cesifo/ifx007

Heal, G., & Park, J. (2016). Temperature Stress and the Direct Impact of Climate Change: A Review of an Emerging Literature. *Review of Environmental Economics and Policy, 10* (2), 347-62. https://doi.org/10.1093/reep/rew007

Hendrix, C. S., & Salehyan, I. (2012). Climate Change, Rainfall, and Social Conflict in Africa. *Journal of Peace Research, 49* (1), 35-50. https://doi.org/10.1177/0022343311426165.

Henry, S., Boyle, P., & Lambin, E. F. (2003). Modelling Inter-Provincial Migration in Burkina Faso, West Africa: the Role of Socio-Demographic and Environmental Factors. *Applied Geography, 23* (2-3), 115-36. https://doi.org/10.1016/j.apgeog.2002.08.001.

Homer-Dixon, T.F. (1994). Environmental Scarcities and Violent Conflict: Evidence from Cases. *International Security, 19* (1), 5-40.

Hsiang, S. M., M Burke, M., & Miguel, E. (2013). Quantifying the Influence of Climate on Human Conflict. *Science, 341* (6151), 1235367-67. https://doi.org/10.1126/science.1235367

Hunter, L. M., Luna, J., K., & Norton, R., M. (2015). Environmental Dimensions of Migration. *Annual Review of Sociology, 41* (1), 377-97. https://doi.org/10.1146/annurev-soc-073014-112223.

IPCC (Intergovernmental Panel Climate Change). (2007). Working Group II: Impacts, Adaptation and Vulnerability. *Fourth Assessment Report of the Intergovernmental Panel on Climate Change.*

IPCC. (2014). Working Group II: Impacts, Adaptation, and Vulnerability. Cambridge, UK: Cambridge University Press.

IPCC. Synthesis Report. (2014). A Report of the Intergovernmental Panel on Climate Change. Fifth Assessment Report 2014. Cambridge, UK: Cambridge University Press.

Kenrick, D.T., & Macfarlane, S. W. (1986). Ambient temperature and horn honking: A field study of the heat/aggression relationship. *Environmental Behavior, 18*, 179-191. https://doi.org/10.1177/0013916586182002

Kleemans, M. (2015). Migration Choice Under Risk and Liquidity Constraints. AAEA and WAEA Joint Annual Meeting. San Francisco, California.

Laczko, F., & Aghazarm, C. (2009). Migration, Environment and Climate Change. International Organization for Migration. United Nations Publications.

Lindoso, P.D., Eiró, F., Bursztyn, M., Rodrigues-Filho, S., Nasuti, S. (2018). Harvesting Water for Living with Drought: Insights from the Brazilian Human Coexistence with

Semi-Aridity Approach towards Achieving the Sustainable Development Goals. Sustainability, *10 (3)*, 622-16. https://doi.org/10.3390/su10030622

Marchiori, L., Maystadt, J.F., & Schumacher, I. (2012). The Impact of Weather Anomalies on Migration in Sub-Saharan Africa. *Journal of Environmental Economics and Management, 63* (3), 355-74. https://doi.org/10.1016/j.jeem.2012.02.001

McLeman, R.A. (2014). Climate and Human Migration. Past Experiences, Future Challenges. *Population and Development Review, 40* (2). https://doi.org/10.1111/j.1728-4457.2014.00684.x

Mehlum, H., Edward M., & Ragnar T. (2006). Poverty and Crime in 19th Century Germany. *Journal of Urban Economics, 59* (3), 370–88. https://doi.org/10.1016/j.jue.2005.09.007.

Montesquieu, C. (1746). *The Spirit of the Laws.*

Millock, K. (2015). Migration and Environment. *Annual Review of Resource Economics, 7* (1), 35-60. https://doi.org/10.1146/annurev-resource-100814-125031

Morrissey, J. W. (2013). Understanding the Relationship Between Environmental Change and Migration: the Development of an Effects Framework Based on the Case of Northern Ethiopia. *Global Environmental Change, 23* (6), 1501-10. https://doi.org/10.1016/j.gloenvcha.2013.07.021.

Mueller, V., Gray, C., & Kosec, K. (2014). Heat Stress Increases Long-Term Human Migration in Rural Pakistan. *Nature Climate Change, 4* (3), 182–85. https://doi.org/10.1038/nclimate2103

Myers, N. (2005). Environmental Refugees: An Emerging Security Issue. 13th Economic Forum, 1-5.

Nawrotzki, R.J., Hunter, L.M., Runfola, D.M., & Riosmena, F. (2015). Climate Change as a Migration Driver From Rural and Urban Mexico. *Environmental Research Letters, 10* (11), 114023–10. https://doi.org/10.1088/1748-9326/10/11/114023

Otto, I.M., Reckien, D., Reyer, C.P.O., Marcus, R., Le Masson, V., Jones, L., Norton, A., & Serdeczny, O. (2017). Social Vulnerability to Climate Change: a Review of Concepts and Evidence. *Regional Environmental Change, 17* (6), 1651-62. https://doi.org/10.1007/s10113-017-1105-9

Piguet, E., Pecoud, A., & De Guchteneire, P. (2011). Migration and Climate Change: An Overview. *Refugee Survey Quarterly* 1-23. https://doi.org/10.1093/rsq/hdr006.

Reuveny, R. (2007). Climate Change-Induced Migration and Violent Conflict. *Political Geography, 26* (6), 656-73. https://doi.org/10.1016/j.polgeo.2007.05.001

Scheffran, J., Brzoska, M., Kominek, J., & Link, P.M. (2012). *Climate Change and Violent Conflict. Science, 336* (6083), 869-871.

Zhang, D. D., Lee, H.F., Wang, C., & Li, B. (2011). The Causality Analysis of Climate Change and Large-Scale Human Crisis. *PNAS, 108* (42), 1-6. https://doi.org/10.1073/pnas.1104268108

Zografos, C., Goulden, M.C., & Kallis, G. (2014). Sources of Human Insecurity in the Face of Hydro-Climatic Change. *Global Environmental Change, 29*, 327–36. https://doi.org/10.1016/j.gloenvcha.2013.11.002

Chapter 2

Getting to the root of the international migrant crisis: what moved the asylum seekers in Germany to flee their country

Article title: Getting to the Root of the International Migrant Crisis: What Moved the Asylum Seekers in Germany to Flee their Country
Keyword: International migration, migration policies, refugees, root causes, Europe
Author: Christina Kohler
Co-authors: Carlos Denner dos Santos, Marcel Bursztyn

Abstract

The current "migrant crisis" has become a key global challenge, giving rise to conflicting public perception about migration, pressuring policy makers to seek solutions, and giving urgency to migration research in academia. The purpose of this study is to explore the drivers of international migration by drawing from individual experiences and decisions of asylum seekers to leave their place of origin; and the motivations, if any, for choosing their destination country. This research pursues this line of analysis with an empirical approach in the German context by conducting 100 semi-structured interviews in eight migrant housing centers. The findings point to a complex and dynamic pattern of drivers of international migration that strengthens existing claims whereby armed conflict and concerns of safety take precedence over economic woes. They also bring to light the multiplicity and details of these drivers, and highlight current trends such as widespread religious and ethnic discrimination, which was one main driver for 50 per cent of interviewees. The intricacies of the subject also stem from the interrelation of drivers as, for instance, religious discrimination is tied with political and social oppression in non-secular states like Iran. Moreover, the research demonstrates that, the perceived benefits of choosing Germany as a destination country have little or no bearing on the initial decision to move across borders. The presented root causes and recommended policy responses provide evidence-based considerations for civil society, policy makers, and academia, with the goal of enhancing the overall European discourse on migration.

2.1 Introduction

In 2016, Germany reached its record high of asylum applications since the establishment of the Federal Office for Migration and Refugees in 1953 (BAMF, 2016). As the top European destination for migrants, Germany has witnessed a surge in incoming asylum seekers since 2009, reaching 745,545 asylum applications – or 57 per cent of the total applications – in the European Union (EU) by the end of 2016 (BAMF, 2016). Against this backdrop, policy makers, civil society, and academics across disciplines have engaged in a polarizing debate about the so-called "migrant crisis".

The media has played a significant role in exacerbating the negative portrayal of migrants during the recent "migrant crisis". However, it is important to keep in mind, that since the 1970s, hyperbolic images of migrants jumping over fences and floods of people crossing the Mediterranean in crammed ships while dead bodies wash ashore have served to reinforce conflicting public perception towards migrants (Pastore et al., 2006). Today, on the one hand, positive attitudes towards immigration seem to be increasingly emerging in western European countries such as Germany, Italy, and Belgium (Talò, 2017). On the other hand, the narrative that migrants take advantage of generous welfare benefits rather than flee violence or persecution is crafted to shape public opinion (Robinson & Segrott, 2002). In reality, the public perception of migration often seems to diverge from the truth; for instance, the Italian public perceives that 30 per cent of its population are foreign born, while in fact this figure is closer to 7 per cent (Achilli et al., 2016). This may be rooted in speculative media coverage and poorly-backed arguments that paint an apocalyptic image of an 'exodus' of 'desperate' migrants in search of the European 'El Dorado' (De Haas, 2008). The image of the "migrant crisis" seems to be especially crystalized and sensationalized when the media conflates terrorism with migration, as it did in the Paris terrorist attacks on November 13, 2015 (Cummings et al., 2015).

Migration is a global and ancient phenomenon with an ever-changing complexity (Cummings et al., 2015), and migration flows have again reached Europe at break-neck speed. The initial EU's response to the increase in irregular migration was focused on maintaining security through increased border control (Geddes & Scholten, 2016). In 2015, Hungary was one of several countries to construct a fence on its borders to impede the entry of refugees; Germany reinstalled temporary border checks while continuing to welcome asylum seekers. Among the 28 European States, Germany distinguished itself as receiving the highest number of asylum requests in the EU between 2012 and 2016 (BAMF, 2016). Germany is the country with the

highest immigration rate in Europe, as in 2016, 22.5 per cent of the German population had a migrant background[1] and the foreign-born population included 12.1 per cent of the population (Statistische Bundesamt, 2018). Since 2014, the topic of immigration has remained one of the most salient issues in Germany (Talò, 2017), taking center stage in the 2017 federal election during which the anti-immigration party Alternative für Deutschland (AFD) entered the German Bundestag by gaining 12.6 per cent of the votes (Bundeswahlleiter, 2017). In fact, the recent rise of Eurosceptic and anti-immigration populist parties across Europe reflect many European citizens' disillusion with the EU and their respective national politics (Geddes & Scholten, 2016). The notion of managing migration through addressing 'root causes' regained momentum in 2015 after having been part of European policy since 1980 (Carling & Talleraas, 2016). On various occasions – and most recently in her first speech after winning the 2017 federal elections – German Chancellor Angela Merkel stressed the need to tackle irregular migration by addressing its root causes (Merkel, 2017; Schweiger, 2017). While migration is more central to the debate about Europe's future than ever before (Geddes & Scholten, 2016), the current policies in place fail to recognize the complex nature of international migration and do not effectively address the difficulties experienced by migrants and governments (Cummings et al., 2015). As a response to the 'migrant crisis, the EU agenda on migration, among others, highlights the crucial need to improve the management of migration by addressing the drivers and structural factors that impede people from building and maintaining sustainable livelihoods in their country of origin and therefore seek a future elsewhere (Migali et al., 2018).

Geddes explains that international migration can be understood as an epiphenomenon, occurring as a result of underlying factors that are changing constantly and simultaneously.

These underlying drivers broadly include global economic inequalities, armed conflict, demographic change, and environmental factors (Black et al., 2011; Geddes & Scholten, 2016). Literature points only to a highly broad consensus that the decision to migrate is a complex process and the patterns of migration to Europe are continually evolving (Cummings et al., 2015; De Haas, 2011). Academia provides a mounting body of research on migration in

[1] As of the Statistische Bundesamt, persons with a migration background are all foreigners born in Germany and all persons born in Germany who have at least one parent who immigrated into the country or was born as a foreigner in Germany.

general, though inconsistent data on international migration and recent research on the drivers and possible solutions to the "migrant crisis" have often led to conflicting results (Cummings et al., 2015). Although there exist studies that specifically analyze the migrant's agency and multiple factors influencing the choice of their destination country during earlier migrant flows (Robinson & Segrott, 2002; Brekke & Aarset, 2009), it is surprising that there exists a limited number of empirical studies in recent literature, such as the one undertaken by the International Organization for Migration (IOM) in Italy, that explore in-depth the drivers of the current wave of migration to Europe. In fact, inconsistency and limited research in existing migration literature stem on the one hand from the lack of theoretical work and data and on the other hand from the emphasis on analyzing which individuals migrate rather than why they migrate (Koubi et all., 2016). Furthermore, the research to date fails to establish the relative importance of a destination country's welfare system, asylum support provision, and national policies as factors influencing immigrants' initial decision to move across borders (Cummings et al., 2015; Brekke & Aarset, 2009).

For decades, European asylum policy was founded on a paradox. Seeking asylum in European territory has become ever more difficult or even impossible despite the fact that European countries have committed to granting protection under the 1951 Refugee Convention (Carling & Talleraas, 2016). Thus, evidence-based knowledge on the actual drivers of ongoing international migration to Europe is essential for policy makers to create effective and durable policies that address the drivers and root causes of the phenomenon (Cummings et al., 2015), rather than maintaining a reactive and emergency-driven policy approach (Achilli et al., 2016). It is important for civil society to have access to fact-based information to mitigate perceived widespread insecurity and the rise of populist sentiments. It is also incumbent upon academia to produce greater up-to-date research on the changing patterns of migration and to fill the existing knowledge gaps.

With these insights in mind, the purpose of this paper is to investigate the drivers of international migration based on the experiences, perceptions and decisions of asylum seekers to leave their place of origin; and the motivations – if any – to choose their destination country. This research draws from participant observations and individual semi-structured interviews with 100 migrants that were conducted in eight different migrant housing centers and local networks located across three German federal states. The selective sampling method was used to learn from a diverse sample of adult migrants. This research sought to answer the questions: What were asylum seekers' perceived drivers for international migration to

Europe; what trigger drivers force migrants to leave their place of origin; do migrants deliberately choose Germany over other possible destinations; what are the drivers influencing migrants to choose Germany as their destination country; and to what extent does the choice of destination play a role in the overall decision to migrate.

2.2 International migration, a complex epiphenomenon

International migration is complex, not least because migration is one of many options considered by people whose living conditions are drastically and often rapidly altered (Carling & Talleraas, 2016). For instance, a person living under the rule of the formally organized group of the Islamic State (IS) could seek to flee, join the military service or an insurgency group, or pledge allegiance to IS as a means for protection. Therefore, the drivers of international migration are also drivers of other, yet no less important, phenomena (Carling & Talleraas, 2016), and the choice to migrate depends on the unique experience and context of each individual, while drivers may change over time and *en route* (De Haas, 2011). Migration is also intricate because drivers rarely function in isolation. For example, armed conflict and political insecurity cannot be considered mutually exclusive from economic opportunities and labor market conditions (Cummings et al., 2015; De Haas, 2011). Moreover, religious discrimination or marginalization is part and parcel of political and social oppression that may occur in non-secular governments.

The inconsistency in the labelling of people moving across borders complicates research efforts even more. The United Nations High Commission for Refugees (UNHCR) recently reinforced its position that refugees and migrants are 'fundamentally different', thereby advising that movements of people be referred to as 'refugees and migrants' (UNHCR, 2016). However, it is inadequate to talk about two kinds of people (Carling, 2015), as measures to allow entry to 'asylum seekers' or 'refugees' and to restrict entry to 'economic migrants' grossly overlook the individual reasons for which people move. Despite the lack of a universally accepted terminology, this paper follows the United Nations' definition of 'international migrant', which comprises 'any person who changes his or her country of usual residence' (United Nations, 1998). Hence, the term 'migrant' includes all people who have left their habitual place of residence, irrespective of legal status, causes for the move, duration of the stay, and nature of the movement as voluntary or involuntary. This is not to discredit the crucial protection claims that are based on the 1951 Refugee Convention; in contrast, it

seeks to protect human rights, provide equal opportunities to every individual arriving in Europe, and facilitate legal protection under EU and international law.

It is important to distinguish between the terminologies, 'irregular migrant' and 'asylum seeker' (Düvell, 2012). Asylum seekers may enter a country by regular or irregular means; and rejected asylum seekers – who stay in the country without authorization – may become irregular migrants. Nearly all interviewees (97 per cent) entered Germany via irregular channels, and were still asylum seekers at the time their interview was held. Therefore, this research is focused on irregular migration rather than on irregular migrants.

In the literature on migration, the terms 'root causes' and 'drivers' overlap (Carling, 2016). However, this research employs the terminologies 'drivers' and 'factors' to describe the conditions and mechanisms that underlie international migration, and 'root causes' are considered the reasons that propel the entire cause-and-effect chain thereof.

2.3 Methods

A qualitative phenomenological research approach with individual semi-structured interviews and participant observations was applied to capture detailed narratives of the lived experiences, thoughts, and behavior of migrants who moved to Germany via irregular means.

Data collection

Individual semi-structured interviews were conducted with 105 migrants from 17 countries, and with one stateless person. However, due to a number of challenges, including missing information of two interviewees, one inexperienced interpreter, and two unsigned consent forms, a total of 100 interviews were validated and analyzed. The data collection process was undertaken between the end of December 2016 and mid-April 2017. Each interview lasted between 30 and 75 minutes, and was conducted in the language of the respondent's choice. The interviews in Arabic, Kurdish Kurmanji and Sorani, Somali, Persian, Tigrinya, Dari Persian, Turkish, and Urdu were conducted with the assistance of experienced interpreters while those in German, English, and French were conducted directly with the principal researcher. To ensure the safety and comfort of the interviewees, the interviews were held either in the privacy of the interviewee's quarters or in an undisturbed location, as agreed upon by both parties. All interviewees were informed orally and in writing about the purpose, specifying the advantages and disadvantages, and terms of confidentiality of the research project, in addition to the voluntary nature of their participation. Both the interviewee and

interpreter were asked to sign a consent form prior to starting each interview. The approval to conduct interviews in the different migrant housings was sought from the directors of the facilities and, in specific cases, from the federal government's regional board.

The individual semi-structured interviews consisted mostly of open-ended questions that addressed general information about the interviewee's place of origin, motivations for leaving the place of origin, their specific drivers of international migration, inflow or outflow of migrants, and their motivations for choosing the country of destination.

The interviews were documented following handwritten protocols, and were later transcribed into a digital datasheet.

To make sense of the collected data, an explorative thematic analysis was conducted using the NVivo software. The NVivo software was used to store, analyze and code the data and was crucial to master the high number of interviews from multiple backgrounds. Field notes from participant observation and non-verbal communication during the interviews were triangulated to support the reflections and analysis.

Study population

To capture a diverse and comprehensive sample of interviewees, the interviews were conducted in four initial reception facilities and four follow-up accommodations throughout the federal states of Hesse, Berlin, and Brandenburg. Purposive sampling was applied to obtain a large and diverse research sample, for which the criteria were that interviewees be migrants in Germany who were at least 18 years of age (Table 1). The popularity of the sports classes offered by the researcher and the 'snowball' method helped to recruit a larger number of migrants who volunteered to participate in the study and created the opportunity to observe daily interactions. The recruitment of interviewees was stopped once a sense of saturation of information was attained. The study population resulted in a highly culturally heterogeneous group. Approximately one-third (34 per cent) of the interviewees originate from Syria, 12 per cent from Iraq, and 11 per cent from Afghanistan (Table 0.1). These results are consistent with the annual BAMF Report 2016; the comparison of the 77 per cent of interviewees who applied for asylum in 2016 and the results of the BAMF Report shows that the top three countries represented by asylum seekers in Germany are Syria, Afghanistan, and Iraq, while Eritrea, Iran, and Pakistan are among the 10 most represented countries in both datasets (BAMF 2016).

Methodological considerations and limitations

In accordance with the promulgation of the asylum act, § 45 AsylG in 1993, asylum seekers are distributed among the German federal states and respective initial reception facilities using a nationwide electronic distribution system before being assigned to follow-up accommodations within the municipalities (BAMF, 2016). An equal distribution of asylum seekers across federal states is therefore assumed. However, observations confirm that, in addition to the significant differences in regulations and guidelines in the single premises, the distribution of migrants within Germany do not follow a uniform procedure (Müller, 2013). Therefore, the interviews were held in eight different migrant facilities in multiple locations in Germany to obtain a diverse and comprehensive sample of interviewees.

The recruitment process proved to be a major challenge because many migrants were reticent or anxious to participate, most likely because they did not want to relive past trauma. The consent form presented an additional hurdle, as some migrants were apprehensive about signing it while others were visibly ashamed for being illiterate. Identifying qualified interpreters was also demanding, especially because the interviews were set to be conducted in nine languages. The gender and cultural background of the interpreters put forth an added challenge, as manifested by the reluctance or refusal of male interviewees to participate with female interpreters. Furthermore, interviewees – and more prominently African interviewees – expressed their reservations about engaging with an interpreter who was not born in their country of origin. While great effort was put into finding qualified interpreter for each interview, one cannot conclusively state that all potential misunderstandings and misinterpretations were avoided. The identity of the interviewer – a white European woman and outsider of the migrant housing communities – represented a further limitation, as language, gender, and cultural barriers were likely to have influenced the content and amount of data collected. However, an attempt to balance these limitations was made through careful attention to the interview context and extensive dialogue with the interviewees. Lastly, in response to the feedback provided by the first round of interviewees who explicitly refused to be recorded, a recording device was not used to document the interviews.

Given the aforementioned limitations, as well as the limited research sample size of 100 interviewees, this research does not claim to be representative of the overall migrant population in Germany.

2.4 Results

This section outlines the reported drivers, which resulted in a complex distribution among interviewees and nationalities (Figure 2.1). The reported drivers for international migration have been categorized into four drivers and eleven sub-drivers, using an explorative thematic approach to analyze the data collected during the interviews and based on participant observations (Table 2.1). Only 39 per cent of interviewees reported one sub-driver, 45 per cent indicated two sub-drivers, and 16 per cent reported as many as three sub-drivers for leaving their place of origin. This research also explores the trigger driver that prompted migrants to leave their country of origin (Figure 2.2). Lastly, the underlying motivations for deliberately choosing Germany as their host country are presented (Figure 2.3), along with the decision-making process of those who did not choose a destination country when leaving their place of origin.

Table 2.1 Pattern of drivers of international migration

Driver	Sub-driver
1. Violence, armed conflict* and non-state conflict**	Violence (torture and killings), occupation (lack of water, electricity, food and deteriorated economy, infrastructure, health-and education system) and persecution by formally organized groups***
	Extreme violence (bombings, torture, rape, detention, kidnapping), deteriorated economy, infrastructure, health- and education system
	Forced military service
2. Religious, ethnic and family issues	Religious and ethnic marginalization, discrimination, violence and persecution
	Family issues, persecution and reunification
	Repressive ethnic and cultural norms and traditions
3. Political, institutional and social issues	Political and social oppression and lack of freedom and safety
	Persecuted or convicted by local justice system
	To seek better education in the country of destination
4. Economic issues	Unemployment and lack of economic opportunities
	Poverty

*As of the Uppsala Conflict Data Program (UCDP), armed conflict is a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths in one calendar year.
**As of the UCDP, non-state conflict implies the use of armed force between two organized armed groups, neither of which is the government of a state, which results in at least 25 battle-related deaths in a year.
***As of the UCDP, a formally organized group is any non-governmental group of people having announced a name for their group and using armed force.

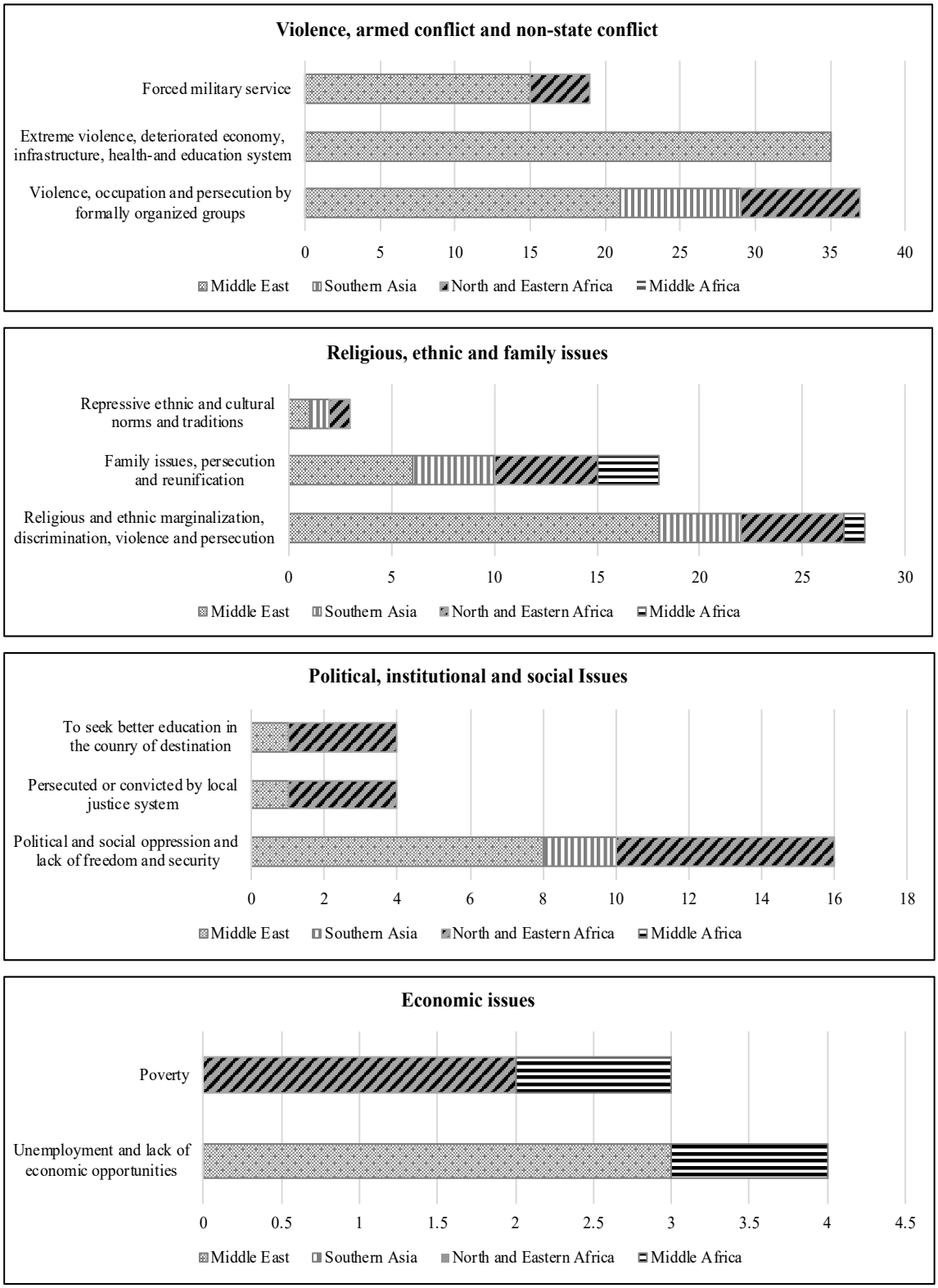

Figure 2.1 Drivers and sub-drivers for international migration, distributed by nationality of interviewees

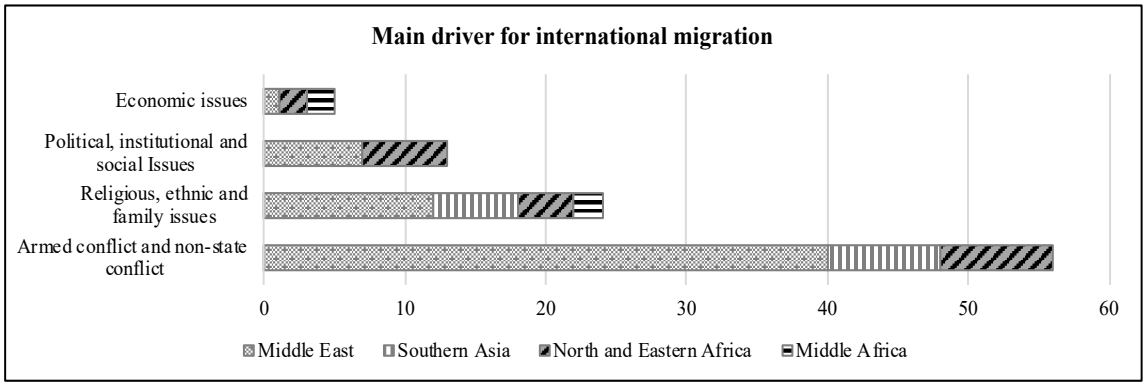

Figure 2.2 Main driver for international migration, distributed by nationality of interviewees

Violence, armed conflict and non-state conflict

Slightly more than half (56 per cent) of interviewees comprised the first driver, declaring their exposure to violence, armed conflict and non-state conflict[2] as their main drivers for fleeing their country of origin.

Violence, occupation, and persecution by formally organized groups

This sub-driver was reported predominantly by Syrian, Iraqi, Afghan and Somali interviewees, though Kenyans, Ethiopians, and one Pakistani interviewee also identified this as a sub-driver. Among the 100 individuals interviewed, 22 per cent considered their exposure to formally organized groups as their trigger driver for fleeing their homes. An Iraqi interviewee recalled the conditions he and his family endured over the course of one year of living under the IS occupation of Mosul, wherein, IS built a little government with different ministries and they introduced their rules by distributing flyers. They pronounced for example: *'you are not allowed to smoke, to shave, to talk to other women than your wife; women need to wear a vail; men need to wear long dresses.'*

Other interviewees recounted IS' brutal public killings of those who did not follow their rules and how IS occupied schools and taught children how to use weapons. Many interviewees detailed their fear, especially that of their children being raped, killed or forced to join IS. In

[2] According to the Uppsala Conflict Data Program (UCDP), a non-state conflict implies the use of armed force between two organized armed groups – neither of which is the government of a state – resulting in at least 25 battle-related deaths in a year.

fact, many young men decided to move across borders because IS had forced them to fight on their behalf. The Syrian interviewees also cited the occupation, violence, and forced recruitment efforts of other formally organized groups such as the Free Syrian Army (FSA) as sub-drivers.

Primarily Somali interviewees described the brutal recruitment methods of the organized group Al Shabaab. For instance, an interviewee from Mogadishu had his arms tied behind his back for refusing to join Al Shabaab in their fight against the government until he was finally forced to capitulate. A former security guard of government officials, who survived a car bomb explosion caused by Al Shabaab, explained that the group specifically targets people who work for the government. However, as one Kenyan interviewee from Mandera explained, differentiating a member of Al Shabaab from an ordinary civilian is incredibly difficult. A 21-year-old Somali reported that he witnessed his parents being murdered by members of Al Shabaab after his father had made a comment related to the group while sitting with his friends earlier in the day. The interviewee was later brought to an Al Shabaab training camp, where he suffered daily beatings and witnessed men and children being brainwashed.

Seven out of the eleven Afghani interviewees were threatened by the Taliban, who targeted people who worked for the government, a foreign company, or the Khan. The Taliban – similarly to other formally organized groups – forcibly recruits young men, controls public spaces, and spreads fear to assert their power. A farmer from Herat, for instance, had to give up his profession because the Taliban controlled or closed the food markets in his village.

In Ethiopia, the atrocities committed by the formally organized group Ogaden National Liberation Front have forced interviewees to flee the country. Moreover, an interviewee from Pakistan left her country because she constantly was being controlled and monitored by the Jammu Kashmir Liberation Front who was after her husband, who never fought with them for the freedom of Kashmir, but had contact with the formally organized group.

Extreme violence, deteriorated economy, infrastructure, health-and education system

The interviewees from Syria, Iraq, and Turkey comprised the only group to recount specific atrocities and problems that were caused by an armed or non-state conflict. Many interviewees not only bared witness to bombings and missile attacks, but also lost family members and friends due to the violent conflicts. A young interviewee from Iraq described life in Mosul as lawless, *'where everyone killed and got killed, it was the rule of the jungle'.*

Syrians reported witnessing severe atrocities in cities across the country, and many recalled the demonstrations and violent clashes between civilians and the military. A Syrian interviewee revealed how violence was covered up in the aftermath of the demonstrations and riots in Latakia: *'they collected all dead people from the street and did mass graves in small parks, like the one close to our home.'*

The risk of being kidnapped or the experience thereof was considered a main driver to leave the country for many interviewees. Various interviewees from Syria also described witnessing acts of violence targeting women such as beatings and rape, which were practiced particularly by the Shebiha, al-Assad's army. Moreover, Syrian interviewees who were arrested outlined the brutal circumstances they underwent in prison. A truck driver from Turkey who was imprisoned various times described how he was threatened by the Partiya Karkerên Kurdistanê (PKK) because they wanted him to transport goods and, in turn, the government accused him of colluding with the PKK. Despite attempts to remain neutral during the armed conflict in their countries, many of the interviewees ended up being caught in between parties. Syrian interviewees reported experiencing threats after being falsely accused of serving as spies or traitors by IS, the FSA, the Shebiha, and the Kurdish army.

Some interviewees explained that while they were not directly affected by violence, they were forced to flee the country due to major financial difficulties brought on by the armed conflict. These included the lack of work, supplies, resources, as well as the country's deteriorating infrastructure, health, and education system. For instance, a farmer reported,

'it was difficult to sell products, because of the war and after some time, I couldn't repair my machines, because spare parts were not available and there was a lack of diesel.'

Military Service

A group of interviewees from Syria and Eritrea, and one from each Somalia and Turkey, fled their countries mainly due to the forced conscription imposed by the ruling regime. Syrian interviewees explained that since the beginning of the conflict in 2011, even men who had already completed their military service were obligated to serve again. A 31-year-old man disclosed how he managed to escape the military service as follows: *'I was recruited into the military against my will. After some time, I offered my superior $350 USD to take a leave and during this period I fled the country.'* A young Eritrean interviewee reported that his mother hid him in the house when the soldiers came to recruit him by force into the military. He

revealed that some friends from his village were murdered most likely due to their refusal to enter the military service.

Religious, ethnic and family issues

Overall, 50 per cent of interviewees identified religious, ethnic or family issues as one of their major drivers influencing their decision to leave their country of origin.

Religious and ethnic marginalization, discrimination, violence and persecution

State-sanctioned discrimination and violence was a common theme among interviewees of nearly all nationalities whereby many interviewees faced socio-professional difficulties due to religious divides in their place of origin. A Sunni from Diyala explained that after the U.S. military withdrew its troops from Iraq, every Sunni became a target and was treated as a terrorist. A group of Shiites killed his elder brother, attacked his younger brother, shot and paralyzed him, and murdered his father shortly after. A Syrian Sunni described the severe difficulties he endured in the city of Tartus, where the majority of people were Alawits and, similarly, a Syrian Alawit reported that he felt as though he was under constant surveillance by Sunni Muslims in Otseia.

Moreover, interviewees who had converted their religion endured challenges so severe that they were forced to leave their country. For instance, an Iranian interviewee from Rasht decided to leave the country with her family after receiving constant threats for having converted to Christianity. Furthermore, Kurds from Syria and Turkey detailed their decision to leave because of the lifelong discrimination they suffered. In addition, interviewees from the Al-Hasakah governorate in Syria stated that IS specifically targeted and killed Kurds during the armed conflict.

Two interviewees left Pakistan solely due to their fear of persecution for being Ahmadi after having suffered severe discrimination. The economist from Sialkot explained: *'laws do not hold for Ahmadis in Pakistan, especially not for women. […] When the bank where I worked announced that all Ahmadi should be killed, I decided to leave.'*

In addition, both Somali interviewees who have been migrants in Yemen for most of their life, were persecuted and discriminated against because of their status as migrants, who are viewed as being part of the opposition group in Yemen. The father of a young Eritrean was imprisoned and killed because he was a pastor who preached the bible and followed Pentecostalism, which has been banned in Eritrea since 2002. A Somali interviewee from the

Gaboye tribe cited that when his girlfriend got pregnant, the ethnic tensions became very clear:

'my girlfriend was from the Ogaden tribe, who govern our village. Gaboye are poor and are not allowed to marry women from other tribes. […] When the parents of my girlfriend heard about us, they wanted to kill us. […] My girlfriend died because we tried to abort, and I fled.'

Family issues, persecution and reunification

Religious tension within families was frequently mentioned as a main reason for breaking families apart, especially among Iraqi, Iranian, and Pakistani interviewees. For instance, the parents of an interviewee from Iraq repudiated their son because he decided to not partake in any religious practices. One Pakistani interviewee had to flee her country because she failed to inform her family-in-law of her adherence to the Ahmadiyya religion before marrying her husband.

Property and inheritance were also major sources of family conflict. An interviewee from Cameroon fled her country when the police told her to leave in order to 's*ave her skin*' from the family members who threatened her after finding out that she inherited land from her father. An Afghani interviewee suspects that his uncle's wife threw acid on his head out of envy of the inheritance he had received from his father.

Family reunification was mentioned as a major driver to move to Europe solely by women, mainly Syrians who moved to Germany to join their husbands. Two female interviewees from Kenya and one from Cameroon also left their country to join their partner.

Repressive ethnic and cultural norms and traditions

Interviewees from Iraq, Kenya, and Afghanistan were forced to leave their country to escape harmful repressive ethnic and cultural norms and traditions. Different female interviewees from Kenya admitted that female genital mutilation (FGM), which is the partial or total removal of the external female genitalia for cultural or other non-medical reasons – is still a widespread practice in their country. The parents of a young interviewee from Kenya's Maasai and Kikuyu tribes consider FGM the mandatory path to maturity for every girl. Despite knowing the risk of being shunned and sometimes even killed for refusing to undergo FGM, the interviewee from Kawangware disclosed that she got pregnant to avoid the procedure after her sister died while undergoing FGM.

Bacha bazi, literally 'boy play' in Persian, is another highly-discriminating practice that prompted an entire family to leave Afghanistan. It is a centuries-old tradition in many parts of Afghanistan and a form of sexual slavery and prostitution, where prepubescent boys are recruited, or rather 'stolen' from poor families as an interviewee from the Baghlan province stated, for dance and sexual entertainment.

Political, institutional, and social issues

Only 15 interviewees, mainly Iranians and Eritreans, considered political and social oppression, legal challenges, and poor education system in their country as their main driver to move internationally.

Political and social oppression

This driver overlaps with factor two on religious and ethnic marginalization because many interviewees fled from non-secular states or regions. In a non-secular state such as Iran, or in occupied regions by religiously motivated groups such as IS in Syria and Iraq, political and social oppression may be tied with religious discrimination or marginalization. Many Iranians described the lack of freedom in their country in the way a young man from Tehran stated that, *'there is no freedom because of the religious government. […] Religious minorities have no rights in Iran.'* All interviewees from Eritrea mentioned some form of political oppression. An Eritrean university student from Asmara explained that he was imprisoned for five months on account of violating the government's travel ban after driving to a neighboring village to visit his grandmother. After his release, he was forced into military service and told that school had finished for him.

The lack of women's rights contributed to the decision of families from Pakistan and Afghanistan to leave their country of origin. A woman from Pakistan pointed out that women have no freedom of movement, with the law going so far as to forbidding women from riding a bicycle. Moreover, an interviewee from Afghanistan reported the Taliban barred his wife from working as a teacher.

Persecuted or convicted by local justice system

Only three interviewees were politically persecuted. One Iranian woman was imprisoned, beaten and, until this day, continues to be politically persecuted because in the 1970s she distributed flyers that were deemed radical. Moreover, an Ethiopian interviewee who escaped

from prison was convicted and persecuted by the state because his murdered father was a political activist.

To seek better education in the country of destination

The desire to seek education was mentioned specifically by four interviewees as one of their drivers, albeit none considered it to be their main driver for migration. An Eritrean explained:

'my life was meaningless and spoiled as soldier in the lifelong military in Eritrea. I wanted to go to Europe, because I want peace, continue my education, and have a future.'

Economic issues

Only five interviewees considered poverty or unemployment and lack of economic opportunities as the main driver to move internationally.

Poverty

Only four interviewees were living below the poverty line of their respective countries, which contributed to their decision to move across borders. For instance, a young man from Sudan had lived on the streets of Khartoum since he was four years old. A Bedouin who lived in the deserts of Kuwait only lived off either donations or sporadic work as a shepherd, cleaner, or gardener.

Unemployment and lack of economic opportunities

Only two interviewees reported unemployment as a main driver for international migration. This figure does not include those interviewees who lost their job or faced financial difficulties due to armed conflict. A young man from Chad and a 49-year-old Egyptian moved to Europe because they did not see a future in their respective countries.

The destination choice

More than half (55 per cent) of interviewees deliberately chose Germany as their destination country and mentioned multiple drivers, which were clustered into five groups (Figure 2.3). Overall, the attractiveness of Germany, is however weak because most interviewees chose Germany mainly to join their family members who were already there. A substantial share of interviewees based their decision also on their search for security, freedom, democracy, and human rights. Twelve interviewees envisioned a better future, education, health system,

economic opportunities, and good conditions to raise their children when moving to Germany. Moreover, only eight interviewees chose Germany also due to its asylum policy. For a minority of interviewees (11 per cent), evidence was found to suggest that they chose to leave their country of origin also because of the perceived benefits of living in Germany. These included interviewees who specifically researched the advantages and disadvantages of European countries and who defined clear-cut goals that they sought to achieve – such as education – once in Germany.

The remaining 45 per cent of interviewees either did not have a specific destination country in mind or went to Germany as a second choice. The majority of those interviewees who moved to Germany by chance simply wanted to reach Europe or any other safe haven. Many interviewees explained that they started to think about their destination country only once they reached Europe. They remained for some time in so-called 'transit' countries, as this interviewee from Eritrea explained, '*When I arrived in Italy, I heard that it is good in Germany, so I moved on.*' Several migrants also reported experiencing hostility, hardship, and a lack of support from authorities in countries such as Italy, Greece, Turkey and Serbia, which prompted them to continue their journey. Moreover, multiple interviewees initially moved to bordering or culturally-similar countries before travelling to Europe. For instance, a Syrian interviewee first moved to an Arab country with her husband, but then decided to move to Europe after having been robbed. Several interviewees explained that their choice for a destination country depended on their financial means, and cited insufficient funds to pay migrant smugglers as a major struggle *en route*. For instance, an Ethiopian interviewee explained that he was held hostage and beaten daily in Libya for nearly two years because he could not pay for his trip from Somalia to Libya. Moreover, it is important to note that among the 45 interviewees who moved to Germany by chance or second choice, nine had a family member living in Germany. Only four interviewees explained that Germany was their second choice because they did not receive asylum in other European countries.

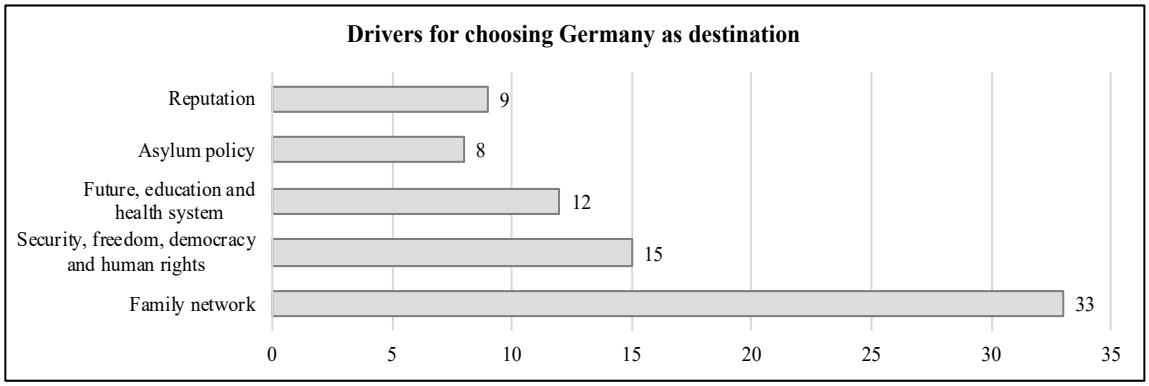

Figure 2.3 Motivations of 55% of interviewees who deliberately chose Germany as their destination country

2.5 Discussion

The analysis of the interviews has been organized into two subjects. First, reflections focus on the complexity of the drivers and sub-drivers of the discovered pattern of drivers of international migration. Second, an analysis of the host country unveils the dynamic nature of migration to Europe.

The pattern of drivers of international migration

A major finding of this research is that the drivers of international migration are numerous; nearly two-thirds (61 per cent) of interviewees were motivated by two or three sub- driver to leave their place of origin. Therefore, rigid and dubious categories to which migrants are assigned – such as 'economic migrant' and 'refugee' – often do not reflect the complex nature of international migration because they tend to overlook the individual's numerous drivers for crossing borders.

Among the 100 migrants interviewed, 56 per cent considered driver one – armed and non-state conflict – as their trigger motivation for moving internationally. This finding strengthens existing evidence that migration is primary motivated by the need for secure livelihood opportunities (Cummings et al., 2015; De Haas. 2011) and the general consensus that war of any type forces people to flee their home (Adhikari, 2012). However, narratives have demonstrated that exposure to violence varies significantly across countries, regions, and for each individual and, therefore, it is imperative to analyze the actual perceived exposure and sub-drivers of each individual. The detailed analysis of drivers brought to light that 15 men left their country primarily to avoid the national military service; others faced extreme violence, though they left their place of origin mainly due to financial difficulties, shortages

of resources and deterioration of education facilities and infrastructure, all of which were caused by armed conflict.

The second driver – religion, ethnic and family issues – was indicated as one of the drivers by 50 per cent of interviewees for moving across borders. Results confirm a study conducted by the IOM in Italy, which also found that 50 per cent of interviewed migrants considered discrimination as a main driver for their flight (Achilli et al., 2016). This finding is noteworthy because this driver cross-cuts the range of cultures represented in this research, showing that religious and ethnic persecution and discrimination is a major driver for international migration, and is likely to increase, as it is not confined to one country or region. The connection between religion and migration is not a new phenomenon. The Jewish diaspora is an eloquent example. However, during the current "migrant crisis" it seems to be overlooked and underestimated by academia and policy makers. As presented, the specific religious, ethnic, and family issues of interviewees are highly diverse and rooted in culture and society such as FGM and *bacha bazi*, forcing entire families to leave their country of origin. It is highly concerning that ancient traditions like *bacha bazi* are still widespread in Afghanistan despite being considered a severe human rights violation (Saramad et al., 2014).

Reported political, institutional and social issues overlap with driver one and two in multiple aspects. Narratives of Syrian and Iraqi interviewees demonstrate that armed, non-state conflict, and political insecurity cannot be considered in isolation from the wider impact they can have on the daily lives of people, economic opportunities, and the labor market. Moreover, 18 per cent of interviewees reported armed and non-state conflict jointly with religious, ethnic and family issues as, for instance, religion is a central motivation of formally organized groups such as IS and Al Shabaab. Furthermore, Iranians and Eritreans left their countries because they suffered religious discrimination, which goes hand-in-hand with political and social oppression in non-secular countries or regions.

In addition, the idea that poverty is a key driver for migration was already discarded in the 1990s (Van Hear et al., 2014), and this research demonstrates that unemployment and poverty was a main driver for only a minority of interviewees. Hence, the widespread public belief that migrants come from poor countries and take advantage of generous welfare benefits and national policies in Europe – rather than fleeing severe threats – is unfounded.

The importance of the destination country

This research demonstrates that asylum seekers in Germany are a highly culturally heterogeneous group as shown in Table 1. An important finding that emerged from this research is that 45 per cent of interviewees did not choose a destination country when they left their country of origin. Interviewees were simply in search of safety and decided on their destination country along the course of their journey. This result supports the existing claim of Collyer in 2007, who describes migrants as transients in search of opportunity, without a linear logic of their choice of destination country. The narratives of migrants emphasize, that the cost of the journey plays a key element in determining migration flows and outcomes (Van Hear, 2014), as do migrant smugglers often direct migration towards or away from particular countries (Robinson & Segrott, 2002). Moreover, interviewees experiences strengthen existing research by Collyer on the crucial role of transit countries, where poor conditions instigate onward migration and where in 'spontaneous social networks' new information is exchanged, which often is the only basis by which migrants decide on their destination country *en route*.

This research highlights, that the deliberate choice of the destination country is the result of a multitude of driver, of which the degree of importance can differ across origin countries as well as across individuals from the same place of origin. As many authors already explored, the existing network in the destination country, plays a crucial role in the migrant's choice of host country (McAuliffe, 2013; Brekke & Aarset, 2009). The results of this research strengthen this evidence, as 42 per cent of interviewees had an existing network in Germany and 33 per cent of the total of interviewees moved to Germany, also due to this motivation.

The results on the migrants' drivers to choose Germany as a destination country are comparable with studies by Robinson and Segrott 2002, and Brekke and Aarset 2009 on migrants choosing the United Kingdom (UK) and Norway, respectively, as their destination country. The comparison of three top European migrant destinations highlights the central drivers for migration to Europe because, as for the British and Norwegian perspectives, safety and security, as well as the presence of a family network, are central for the German case during this "migrant crisis". While language and cultural ties did not factor into the decision-making process of migrants moving to Norway and Germany, they were paramount for those moving to the UK. Generally, reaching the UK as a destination country had far less importance for migrants than their drivers for leaving their homes (Robinson et al., 2002**)**. Similarly, only 11 per cent of interviewees chose Germany as their host country based on a

clear idea of the potential benefits that the country may offer them, hence, only in these cases one may suggest that the destination country may have played a role in their initial choice of migration. Therefore, findings support the claim, that the importance of Germany's or any other country's welfare, asylum support system and national policies are weak drivers for migration (Cummings et al., 2015).

2.6 Conclusion

International migration is a key global challenge and the current "migrant crisis" has sparked conflicting public perception about migration, pressuring policy makers to seek viable solutions and fostered the importance of migration research in academia. To the last point, this study sought to explore the drivers for international migration based on the individual experiences, perceptions and decisions of 100 asylum seekers from 17 countries hosted in German facilities to leave their place of origin; and the drivers, if any, to choose their destination country.

Transnational migration will continue to be a key issue in international politics (Geddes & Scholten, 2016). In the German agenda, one can perceive the need for effective policies to overcome the era of the "migrant crisis", to respond to the expectations of civil society, containing the escalation of the political debate, and to keep in check anti-immigration parties such as the AFD to prevent future crises. To date, public discourse and, to an extent, policy responses about migration, have been based on limited research and evidence (Koser & McAuliffe, 2013) and reactive mitigation attempts seemed to be guided by media inflated perceptions, which trump facts and lead to emergency driven policy approaches such as closing entry points to Europe that are likely to result in further turmoil and deaths, as people will search for alternatives and possibly more dangerous entry channels to Europe.

In 2015, a total of 3,771 deaths were reported in the Mediterranean (Geddes & Scholten, 2016) and, to date, the EU response to the "migrant crisis" focuses on the 'symptoms' of international migration – such as containing migrant smuggling – rather than dealing with the underlying root causes of this phenomenon. As demonstrated in this paper, drivers for migration can differ between countries and are rooted in history, governance, and the dynamics of the society, thus, an interdisciplinary and multi-causal approach is required to improve the management of migration, as there do not exist exclusive drivers for international migration.

The results highlight the argument that the choice of the destination country has little or no bearing in the migrant's initial decision to move to Europe and Germany's attraction as a destination country is weak, since migrants mainly choose their destination country based on an existing family network and the desire for safety. Therefore, focusing on the drivers and root causes that motivate people to leave their place of origin may help to avoid the destination country bias concerned only with the challenges for European countries (Geddes & Scholten 2016). This research sought to increase understanding on climatic events as a possible driver for migration. However, this study highlights, that the decisive drivers of the current "migrant crisis" include driver one - armed conflict and non-state conflict, and two, religious, ethnic and family issues. When policies target less relevant factors or address only the 'symptoms' of the root causes, migration may get blocked and people might be more inclined to choose alternative outcomes that are less desirable, such as joining a violent movement. Policies should aim at effectively addressing the drivers of migration that people explicitly face in their countries of origin, with an integrated policy approach, involving cooperation and accountability among the involved parties.

The findings and suggestions of this research were based on the experiences, perceptions and decisions of asylum seekers in Germany in order to uncover the actual drivers for international migration of those, who unleashed the "migrant crisis" and ultimately fuel evidence-based discourse and responses. Disentangling the drivers and detailed sub-drivers of an individual's decisions is crucial to understanding the motivations of international migration, though, the complexity of the subject also lies in the fact that reported drivers cannot be analyzed in isolation. Presented up-to-date trends and multiple findings supporting existing research provide a nuanced understanding of the current pattern of international migration to Europe and should serve policy or any program seeking to influence irregular migration to address the actual drivers and root causes with a long-term and evidence-based sustainable migration management approach and development policies at both national and international levels, in Germany, Europe, transit countries and migrant's countries of origin. This research highlights that international migration is a global epiphenomenon and its complex and numerous drivers require increased attention by academia to fill existing knowledge gaps and to keep track of the evolving patterns of migration to Europe, as migration is likely to continue over decades to come. Evidence-based studies may foster a fact-based public discourse and enhance the overall European discourse on migration.

2.7 References

Achilli, L., Fargues, P., Salamonska, J., & Talò, T. (2016). Study on migrants' profiles, drivers of migration and migratory trends. International Organization for Migration, 1–80.

Adhikari, P. (2012). Conflict-Induced Displacement, Understanding the Causes of Flight. American Journal of Political Science, 57(1), 82–9. https://doi.org/10.1111/j.1540-5907.2012.00598.x

Black, R., Adger, W. N., Arnell, N. W., Dercon, S., Geddes, A., & Thomas, D. S. G. (2011). The effect of environmental change on human migration. Global environmental change, 21, S3-S11. https://doi.org/10.1016/j.gloenvcha.2011.10.001

Brekke, J., & Aarset, M. F. (2009). Why Norway? Understanding Asylum Destinations. Institute for Social Research.

Bundeswahlleiter (2017). Bundestagswahl 2017 Ergebnisse. Accessed 14 October 2018. Retrieved from https://www.bundeswahlleiter.de/info/presse/mitteilungen/bundestagswahl-2017/34_17_endgueltiges_ergebnis.html

Bundesamt für Migration und Flüchtlinge (BAMF) (2017). Das bundesamt in Zahlen 2016. Asyl, Migration und Integration. Accessed 14 October 2018. Retrieved from http://www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Broschueren/bundesamt-in-zahlen-2016.html?nn=9121126

Collyer, M. (2007). In-Between Places: Trans-Saharan Transit Migrants in Morocco and the Fragmented Journey to Europe. Antipode, 39(4), 668–90. https://doi.org/10.1111/j.1467-8330.2007.00546.x

Cummings, C., Pacitto, J., Diletta, L., Foresti, M. (2015). Why People Move: Understanding the Drivers and Trends of Migration to Europe. Overseas Development Institute (ODI) Working Paper 430.

European Commission (2015). EU Announces Support for Poverty Eradication in Eritrea. Accessed 14 October 2018. Retrieved from http://europa.eu/rapid/press-release_IP-15-6298_en.htm

De Haas, H. (2008). The Myth of Invasion. The inconvenient realities of African migration to Europe. Third World Quarterly, 29(7), 1305-22.

De Haas, H. (2011). Mediterranean migration futures: Patterns, drivers and scenarios. Global environmental change, 21, S59-S69, https://doi.org/10.1016/j.gloenvcha.2011.09.003

Düvell, F. (2012). Transit migration: A blurred and politicised concept. Population, Space and Place, 18(4), 415–27. https://doi.org/10.1002/psp.631

Geddes, A., Scholten, P., 2016: The politics of migration & immigration in Europe. 2nd edition. Thousand Oaks: SAGE Publications.

Koser, K., & McAuliffe, M. (2013). Establishing an Evidence-Base for Future Policy Development on Irregular Migration to Australia. Australian Department of Immigration and Border Protection, Irregular migration research program, 1-28.

McAuliffe, M. (2013). Seeking the views of irregular migrants: Decision making, drivers and migration journeys. Australian Department of Immigration and Border Protection, Irregular migration research program, 1-32.

Migali, S., Natale, F., Tintori, G., Kalantaryan, S., Grubanov-Boskovic, S., Scipioni, M., Farinosi, F., Cattaneo, C., Benandi, B., Follador, M., Bidoglio, G., McMahon, S. and Barbas, T. (2018). International Migration Drivers, Publications Office of the European Union, Luxembourg. doi:10.2760/63833

Merkel, A. (2017). Bundestagswahl 2017: Rede von Angela Merkel zu den vorläufigen Wahlergebnissen am 24.09.2017. Accessed 14 October 2018. Retrieved from https://www.youtube.com/watch?v=_2nhR4Md4Fw

Müller, A. (2013). Die Organisation der Aufnahme und Unterbringung von Asylbewerbern in Deutschland. Bundesamt für Migration und Flüchtlinge (BAMF), 1-43.

Pastore, F., Monzini, P., & Sciortino, G. (2006). Schengen's Soft Underbelly? Irregular Migration and Human Smuggling across Land and Sea Borders to Italy. International Migration, 44(4), 95-119, https://doi.org/10.1111/j.1468-2435.2006.00381.x

Robinson, V., & Segrott, J. (2002). Understanding the decision-making of asylum seekers. Home Office Research, Development and Statistics Directorate 243, London, UK.

Saramad, M. H., Abid, A., Alavi, M. J., Waziri, B., Babrakzai, N., & Sultani, L. (2014). Causes and Consequences of Bachabazi in Afghanistan (National Inquiry Report). Afghanistan Independent Human Rights Commission, 1-91.

Schweiger, K. (2017). Die Wahrheit hinter den Worten Versicherheitlichung in Reden von Kanzlerin Merkel vom 9. September und 25. November 2015 mit Hilfe des Securiza on-Ansatzes. Universität Passau, 137-163.

Statistische Bundesamt (2018). Mehr als 10 Millionen Ausländer in Deutschland. Accessed 14 October 2018. Retrieved from

https://www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2017/06/PD17_227_12521.html

Talò, T. (2017). Public attitudes to immigration in Germany in the aftermath of the migration crisis. Migration Policy Centre 2017/23, 1–8. https://doi.org/10.2870/516256

United Nations, Human Rights Council. (2015). Report of the Commission of Inquiry on Human Rights in Eritrea. Accessed 14 October 2018. Retrieved from http://www.ohchr.org/EN/HRBodies/HRC/CoIEritrea/Pages/ReportCoIEritrea.aspx

UNHCR (2016). UNHCR viewpoint: 'Refugee' or 'migrant' – Which is right? Accessed 16 October 2018. Retrieved from http://www.unhcr.org/news/latest/2016/7/55df0e556/unhcr-viewpoint-refugee-migrant-right.html

United Nations, U. (1998). Recommendations on Statistics of International Migration. Department of Economics and Socail Affairs, Statistics Division. United Nations. New York.

Van Hear, N. (2014). Reconsidering Migration and Class. International Migration Review, 48/3, S100-21. https://doi.org/10.1111/imre.12139

Van Hear, N., Bakewell, O., & Long, K. (2014). Drivers of Migration. Migrating out of Poverty RPC Working Paper 1. Migrating out of Poverty, 1-44. University of Sussex. Brighton, UK.

Chapter 3

Climatic events, Conflict and Migration: A Novel Nexus-Theory

Article title: Climatic events, Conflict and Migration: A Novel Nexus-Theory
Keyword: Climate change, environment, human security, resource scarcity
Author: Christina Kohler
Co-authors: Carlos Denner dos Santos, Carl-Friedrich Schleussner, Marcel Bursztyn

Abstract

Since the 1990s, the complex connections between the triad of climatic events, conflict and migration have impacted world politics, continuing to spark turmoil among policy makers and garnering attention among academics across disciplines. This research aims to advance the understanding of the causal linkages between climatic events, conflict and migration, exploring a new perspective on this nexus. For this purpose, existing related scientific literature was scrutinized and complemented with an in-depth empirical study of 100 asylum seekers from 17 countries hosted in German facilities. A "conflict-induced resource scarcity theory" is suggested, where conflict – in particular the use of resources as weapon in warfare – increases society's vulnerability to climatic events, which may contribute to conflict and migration. To demonstrate the plausibility and usefulness of this theory, this paper elaborates on the conflict in Syria as a microcosm of the problem and provides suggestions on how climatic events may have affected recent migration flows to Europe. The results show that 81% of interviewees reported resource scarcity in their place of origin, of whom 36% were negatively impacted by it only after conflict broke out. This highlights the risks of mounting climatic pressure on resources and the increasing use of resource scarcity as a weapon during conflict. This analysis points towards a complex interrelation between climatic events and conflict-driven vulnerability to counter the popular narrative that peddles simple and sensationalist conclusions. The research findings may inform policy makers on the strategic importance to protect and provide resources in conflict zones, especially to the most vulnerable populations, implement precautious actions to reduce the risks of conflict and conflict-induced resource scarcity, and address existing adaptation gaps.

3.1 Introduction

Since the 1990s, each of the three research domains of climatic events, conflict and migration, and the connections of these concepts have significantly impacted world politics, sparking turmoil among policy makers and garnering attention among academics across disciplines. The interactions between climatic events, conflict and migration are complex, as they are characterized by inherent uncertainty across scientific research fields, a lack of consistent data, and of tremendous political visibility and importance. Moreover, given the severity of the actual and potential consequences for human security and international peace, it is essential to conduct further research and foster understanding on causal linkages between these phenomena.

To unpack the complex relationship between climatic events, conflict and migration, it is imperative to consider existing scientifically tested mechanisms and mediating factors between the phenomena. Firstly, the liaison among climatic events, conflict and migration is a non-linear relationship with numerous combinations (Carleton & Hsiang, 2016) and human insecurity almost never has single causes (IPCC, 2014). Furthermore, conflict of any kind, is rarely, if ever, attributed to single motives (Gleick, 2014), as there is usually more than one driver that leads a person to migrate (Black et al., 2011) and therefore, climatic events are just one among many important factors contributing to conflict, migration and endangering human security (IPCC, 2014). The existing scientific evidence highlights that the impact of climatic events on human beings and societies is shaped by the vulnerability specific to each affected entity (Brzoska & Fröhlich, 2015; Scheffran et al., 2012). Lastly, this research underscores the important mechanism outlining that conflicts increase societies' vulnerability to climatic events in multiple forms (Buhaug et al., 2014; Scheffran et al., 2012). The mediating factors concern five dimensions of society – which include political/institutional, economic, environmental, demographic, and social factors – that impact the relationship between climate, conflict and migration on numerous dimensions and at multiple scales. Research on climatic events and their consequences on human security recently regained momentum, building on earlier research on resource scarcity (Brzoska & Fröhlich, 2015), an important mediating factor that this paper will single out with a special focus on water and electricity scarcity.

Resource scarcity is considered an important link in the relationship between climate and conflict (Homer-Dixon, 1994; Hsiang et al., 2013; Scheffran et al., 2012;). Furthermore, the potential for increased migration, which is among the most frequently cited links between

climatic events and conflict, is based on the conviction that climatic events lead and increase resource scarcity, which might drive migration as well as conflict (Brzoska & Fröhlich, 2015; Burrows & Kinney, 2016). Debates remain vibrant on the effects of climatic events on resource scarcity and on the question of how the scarcity and changes of distribution of natural resources increase vulnerability to climatic events and affect human security (Homer-Dixon, 1994; Hsiang et al., 2013; Scheffran et al., 2012). For instance, climate change increases the scarcity of water and related risks such as the potential for triggering conflict and, as water is a scare and irreplaceable resource, with increasing level of warming in the twenty-first century, human security will be incrementally endangered (Berlemann & Steinhardt, 2017; IPCC, 2014). Recent years have witnessed a global upward trend in incidents of water-related violence and while water-related conflicts occur in many forms, research on the linkage between water and international peace and security, as well as the relationship between water and armed conflict, often neglects the role of water in not only being a trigger for war, but also in its use as a weapon. For instance, it has been used in combat or as a tool to oppress the enemy or civilians, or both during conflict (Gleick, 2006, 2014; Tignino, 2010).

The ongoing conflict in Syria is characterized by multiple mechanisms and mediating factors that impact the relationship between climatic events, conflict and migration, and is a widely discussed example of a conflict with complicated but direct connections to resource scarcity, in particular water (Gleick, 2014). However, due to the complex relationship between climatic events, conflict and migration, there is little consensus in the literature on the relative importance of climate as a driver or contributor to conflict and the role that migration plays in this relationship relative to other factors (Burrows & Kinney, 2016; De Châtel, 2014; Gleick, 2014;). There remains great uncertainty in literature on the nexus between climatic events, conflict and migration due to the inherent complexity of climatic events projections, challenges in identifying the outbreak of conflict, a lack in accuracy in projecting population growth and no reliable database for sound migration estimates (Burrows & Kinney, 2016; Brzoska & Fröhlich, 2015).

The potential link among climatic events, conflict and migration has been discussed in academic literature based on qualitative research (Brzoska & Fröhlich, 2015; Burrows & Kinney, 2016; Reuveny, 2007; Withagen, 2014) and, to a lesser extent, on quantitative research (Ghimire et al., 2015; Cattaneo & Bosetti, 2017). So far, the body of knowledge on the relationship between these phenomena focuses entirely on a possible security risk that

migrants, who are motivated by climatic reasons, pose on receiving locations. In fact, the research at present continues to concentrate exclusively on environmental factors as drivers for migration, neglecting other possible connections among climate, conflict and migration, despite a so-far limited theoretical basis for and empirical evidence of the proposition that climatic events will lead to migration and that migration movements will cause conflict (Brzoska & Fröhlich, 2015).

Since the 1990s, the claim that migration is by climatic events has often been considered the main human security risk of global warming (Berlemann & Steinhardt, 2017; Brzoska & Fröhlich, 2015; Brown, 2008; Myers, 2005). This notion was spurred by the alarmist warnings of climate-induced mass migration, proclaimed by Intergovernmental Panel on Climatic Change in its first assessment report (IPCC, 1990). This claim was later used to justify predictions of major conflicts in receiving regions and generally, climatic events in connection with conflict. Since then, migration was presented as a phenomenon that causes violence and instability despite a thin base of scientific evidence (Raleigh, 2010; Raleigh et al., 2010; Reuveny, 2007). Since then, the debate on climatic events has ramped up and in 2015 retook center stage as a "convenient truth" during Europe's reconcile with large inflows of irregular migrants, terrorism in Europe and conflict and terrorism in the Tigris and Euphrates basin (Powell et al., 2017). Climatic events were again presented as the driver of conflict and mass migration, causing human insecurity, creating a state of emergency and a trilogy of self-reinforcing global challenges affecting international peace (Ibid). Therefore, the scientific and political discourse on climate's impacts on human and national security and the advancement of knowledge on the relationship among climatic events, conflict and migration continue to have significant consequences on international relations and peace.

This paper argues that when analyzing the relationship among climatic events, conflict and migration and exploring new possible linkages, it is crucial to consider existing scientific concepts and evidence – the mechanisms and mediating factors - between the phenomena. To analyze the causal linkages among the three scientific research areas and in an attempt to offer a distinct perspective between climatic events, conflict and migration, this research draws from existing scientific literature, participant observations and individual semi-structured interviews with 100 migrants from 17 countries that were conducted in eight different migrant housing centers and local networks located across three German federal states. The selective sampling method was employed to learn from the experiences, perceptions and thoughts of a diverse sample of adult migrants. This paper sought to explore the following main question,

"how did asylum seekers perceive resource scarcity in their place of origin and how is it associated with conflict, climatic events and migration? and answer the detailed questions of "how is resource scarcity, in particular water and electricity scarcity associated with climatic events, conflict, and migration?" and "how is water and electricity scarcity used strategically as weapon and tool during conflict?"

3.2 Theoretical framework

On the one hand, climate change plays a natural role in earth's variability, while on the other hand, anthropogenic factors are extremely likely to have caused more than half of the observed increase in the average global temperature, of about 1°C since the preindustrial period (Berlemann & Steinhardt, 2017; IPCC, 2014). Climatic events that are spurred by climate change differ considerably across regions and include slow onset environmental phenomena such as droughts and land degradation, and suddenly-occurring extreme weather and climate-related events such as floods and storms (IPCC, 2014). Yet, while such changes are inevitable and expected to increase, climatic events involve complex interactions and altering likelihoods of diverse impacts (IPCC, 2014), the scientific research is not aligned on where and when changes will occur (Burrows & Kinney, 2016), and the extent to which human systems are and will be affected (Berlemann & Steinhardt, 2017).

There is consensus in the literature that climatic events pose risks to various dimensions of human security (IPCC, 2014). Human security is a highly-contested concept, informed and debated by many disciplines and by numerous studies that use diverse methods (IPCC, 2014; Inglehart & Norris, 2012; Owen, 2004; Paris, 2001). Moreover, as the conceptual debate on climatic events and human security is just starting (Scheffran et. al., 2012a), there are multiple definitions that vary according to discipline (IPCC, 2014). According to the IPCC 2014 (p.759), human security in the context of climatic events can be considered, "a condition that exists when the vital core of human lives is protected, and when people have the freedom and capacity to live with dignity."

Human insecurity rarely can be attributed to any single cause. Instead, it emerges from the interaction of multiple factors impacting individuals, households and societies, with climatic events being just one important factor (IPCC, 2014). The existing literature suggests that the impact of climatic events on human beings and societies is shaped by the vulnerability specific to each affected entity (Brzoska & Fröhlich, 2015; Scheffran et al., 2012). Vulnerability encompasses a variety of concepts (IPCC, 2014) and, broadly speaking,

vulnerability to climate impacts may include exposure and sensitivity to climatic events, as well as adaptive capacity (IPCC, 2007; Scheffran et al., 2012). The impact of climate depends on the specific climatic event (Scheffran et al., 2012), however it has very different effects on different segments of societies, as the consequences of climatic events depend on how vulnerable social systems are and how they respond to climate's impacts (Berlemann & Steinhardt, 2017; Scheffran et al., 2012).

Conflict is considered a powerful cause of human insecurity (Barnett & Adger, 2007) and the connections between climatic events and conflict have been explored in great detail, especially over the last decade (Buhaug et al., 2014; IPCC, 2014). While overall scientific research does not conclude on a strong positive relationship between climatic events and conflict (Buhaug et al., 2014; Theisen et al., 2013), theories on the potential of climatic events to increase conflict are mounting and diverse (Brzoska & Fröhlich, 2015; Gleditsch, 2012; Scheffran et al., 2012). Scientific research is in alignment on the mechanism, that the vulnerability of human systems, especially the sensitivity and the adaptive capacity to climatic events can be affected by conflict (Buhaug et al., 2014; Scheffran et al., 2012). For instance, conflict increases the vulnerability of social systems because it affects economic activity, education, health, food security and overall well-being, which are major drivers of vulnerability (Adger, 2013; Raleigh et al., 2012). In addition, it harms assets that facilitate adaptation to climatic events including infrastructure, institutions, natural resources, social capital, and livelihood opportunities (IPCC, 2014). Yet, if climatic events negatively affect these characteristics of social systems, they may increase the risk of humanitarian crises and aggravate existing conflicts without directly causing them (Bernauer et al., 2012; Scheffran et al., 2012).

As the connection between climatic events and conflict is not linear, multiple mediating factors are at play. Since the 1980s, when the links between climate and conflict was a burgeoning area of academic research, resource scarcity has been considered to be an important link to the relationship. Today, there exists an intensive scientific debate on how the scarcity and changes of distribution of natural resources such as minerals, water, energy, fish, and arable land affect conflict (Homer-Dixon, 1994; Hsiang et al., 2013; Scheffran et al., 2012). In fact, Brzoska and Fröhlich claim that the vulnerability to the effects of climatic events commonly increases where the dependence on natural resources for survival is direct and high. Gleick (1993; 2006) highlights the importance of water as a contributing factor to

conflict and describes that freshwater and water infrastructure are integral to ecological, human and economic systems, though unevenly and irregularly distributed across the globe.

Water-related conflicts occur in many forms, including disputes over access to water and the control of water systems, the targeting of water infrastructure and systems during conventional conflicts and terrorist actions, and the use of water as a weapon and tool during conflict (Gleick, 2014). Examples where water was used as a political or military tool are numerous and date back to over 4,500 years. There are many narratives in which water was used as a weapon or tool during conflict around 2,700 years ago in the Tigris and Euphrates region (Gleick, 2014; Lloyd, 1961). Water has always been a high-value target during conflict because there exists no substitute for it (Gleick, 2006, 2014). There is also mounting concern about how climatic events may affect energy supply, as it strongly influences economic development, health and quality of life (IPCC, 2014). Conflict can surge over hydroelectric projects and dams, especially where there exist gross inequities concerning energy supply (Gleick, 1993).

While resource scarcity is considered an important liaison between climatic events and conflict, among the most frequently cited links is the potential for increased migration based on the conviction that climatic events cause or increase resource scarcity, which might drive migration as well as conflict (Brzoska & Fröhlich, 2015; Burrows & Kinney, 2016). The academic literature on the links between climatic events, conflict and migration is still limited, with only a few evidence-based case studies published since the 1990s (Burrows & Kinney, 2016). Among the cases that have been more readily studies is the ongoing conflict in Syria, which is located in one of the driest regions in the world and has been in moderate to severe drought from 1998 through 2009 (Kelley et al., 2015). Between 2006 and 2011, the country experienced a multiyear period of extreme drought that contributed to agricultural failures, economic dislocations and population displacement to urban areas (De Châtel, 2014; Gleick, 2014). The northeastern region was hit hardest by the drought, after already having suffered from severely depleted groundwater reserves and the government's overambitious agricultural development projects, which overstretched both land and water resources (De Châtel, 2014). Overall, the Syrian conflict has many roots beyond its official start in 2011. Its causes are rooted in long-standing political, social and ideological disputes, economic dislocations from both global and regional factors, as well as worsening environmental conditions impacting a highly vulnerability population to climatic events (Gleick, 2014, Kelley et al., 2015). Gleick argues that these key environmental factors include both direct

and indirect consequences of water scarcity, ineffective watershed management, the impacts of climatic events and the use of resources as weapon or tool during conflict.

Various targeted attacks on water systems and power plants by the government and opposition groups were reported, including the bombing of water resources by the Syrian government in Damascus that cut off access to the water supply for 5.5 million people in 2017 (Miles, 2017). Prior to that, Anti-Assad rebels took over the Tishrin hydroelectrically dam on the Euphrates River in late 2012 (Mroue, 2012) and in 2013, the formally organized group[1] called the Islamic State (IS) occupied the Tabqa al-Thawrah dam, which is the largest hydroelectric dam in the country (Saad, 2013). The IS employed dams, canals and reservoirs as weapons in order to deny water to regions outside of their territories and flooded the route of approaching enemy armies (Beach, 2015). In the city of Raqqah, the IS exhausted water reserves and disrupted distribution networks, forcing residents to use untreated water resources, which led to the spread of waterborne diseases such as Hepatitis A and Typhoid (Ibid.). Moreover, they used their partial control over the country's energy infrastructure as a tool to demand payment for utility services and reportedly collected $20 every two months from business owners in exchange for electricity, water and security (Beach, 2015; Humud et al., 2015)

Yet, there exists great disagreement over whether climatic events contributed to the conflict in Syria and if internal migration from rural to urban centers spurred the conflict (Uexkull et al., 2016; Brzoska & Fröhlich, 2015; Gleick, 2014). In fact, there exists no theoretical approach that adequately represents the relationship between migration motivated by climatic events and conflict (Brzoska & Fröhlich, 2015), and recent quantitative and macro-level empirical studies remain ambiguous (Ghimire et al., 2015; Cattaneo & Bosetti, 2017). This does not imply that climatic events are irrelevant for future patterns of migration or migration linked to conflict. However, while migration studies have witnessed tremendous progress in the understanding of the environment over the past 20 years (Cattaneo & Peri, 2015; Hunter et al., 2015), authors argue that the climate-migration literature has placed too much emphasis on climate as the driving factor of migration (Brzoska & Fröhlich, 2015).

Therefore, it is important to explore other possible perspectives and links between climate, conflict and migration (Burrows & Kinney, 2016). Novel theories may acknowledge and

1 As of the UCDP, a formally organized group is any non-governmental group of people having announced a name for the group and using armed force.

apply existing scientific evidence concerning the mechanisms and mediating factors of the nexus, which also form the basis for exploring the following "conflict-induced resource scarcity theory."

Conflict, including the use of resource scarcity as a tool and weapon during warfare, carried out by formally organized groups or governments can significantly increase a society's vulnerability by reducing the availability of resources such as water and electricity. Formally organized groups such as the IS, FSA, Taliban, or governments may use the control over resources as a weapon or tool to control and oppress the population, or they may use this strategy to gain ground in opposition-held regions, or both. Yet, when climatic events hit already vulnerable populations that are suffering under resource scarcity caused by conflict, the climate impact will be significantly stronger, as the individual's, household's or entire society's sensitivity and adaptive capacity to climatic events is weakened. The absence of effective governance structure or adaptation efforts ultimately leads to negative effects on livelihoods and health, among many other factors of human security. This, in turn, may potentially intensify an ongoing conflict or lay the ground for increased sociopolitical instability in the form of political unrest, insurgency, state fragility and cause migration movements towards more resource-rich regions.

3.3 Methodology

A qualitative phenomenological research approach with individual semi-structured interviews and participant observation was applied to capture detailed narratives of the lived experiences, thoughts, and behavior of migrants who moved to Germany via irregular means.

Data collection

Individual semi-structured interviews were conducted in German migrant housings with 105 migrants from 17 countries, and with one stateless person. However, due to a number of challenges, including missing information of interviewees, one inexperienced interpreter, and unsigned consent forms, a total of 100 interviews were validated and analyzed. The data collection process was undertaken between the end of December 2016 and mid-April 2017. Each interview lasted between 30 and 75 minutes, and was conducted in the language of the respondent's choice. The interviews in Arabic, Kurdish Kurmanji and Sorani, Somali, Persian, Tigrinya, Dari Persian, Turkish, and Urdu were conducted with the assistance of experienced interpreters while those in German, English, and French were conducted directly

with the principal researcher. To ensure the safety and comfort of the interviewees, the interviews were held either in the privacy of the interviewee's quarters or in an undisturbed location, as agreed upon by both parties. All interviewees were informed orally and in writing about the research purpose, specifying the advantages and disadvantages, and terms of confidentiality of the research project, in addition to the voluntary nature of their participation. Both the interviewee and interpreter were asked to sign a consent form prior to starting their interview. The approval to conduct interviews in the different migrant housings was sought from the directors of the facilities and, in specific cases, from the federal government's regional board.

The individual semi-structured interviews consisted of open-ended questions that addressed general information about the interviewee's place of origin and the motivations for leaving it. Moreover, the impact of possible climatic events on the interviewee's daily lives were questioned, followed by an inquiry on resource use, in particular water and electricity, perceived tensions or conflict and inflow or outflow of migrants. The interviews were documented following handwritten protocols and were later transcribed into a digital datasheet and record in the NVivo software. To make sense of the collected data, an explorative thematic analysis was conducted while field notes from participant observation and non-verbal communication during the interviews were triangulated to support the reflections and analysis.

Study participants

To capture a diverse and comprehensive sample of interviewees, the interviews were conducted in four initial reception facilities and four follow-up accommodations located throughout the federal states of Hesse, Berlin, and Brandenburg. Purposive sampling was applied to obtain a large and diverse research sample, for which the criteria were that interviewees be migrants in Germany who were at least 18 years of age. The popularity of the sports classes offered by the researcher and the 'snowball' method helped to recruit a larger number of migrants who volunteered to participate in the study and created the opportunity to observe daily interactions. The recruitment of interviewees was stopped once an adequate level of saturation of information was attained. In fact, the study population resulted in a highly-cultural heterogeneous group as table 0.1 of this thesis demonstrates (Table 0.1).

Methodological considerations and limitations

The recruitment process proved to be a major challenge because many migrants were reticent or anxious to participate, most likely because they did not want to relive past trauma. The consent form presented an additional hurdle, as some migrants were apprehensive about signing it while others were visibly ashamed of being illiterate. Identifying qualified interpreters was also demanding, especially because the interviews were set to be conducted in nine languages. The gender and cultural background of the interpreters put forth an added challenge, as manifested by the reluctance or refusal of male interviewees to participate with female interpreters. While great effort was put into finding qualified interpreter for each interview, one cannot conclusively state that all potential misunderstandings and misinterpretations were avoided. The identity of the interviewer – a white European woman and outsider of the migrant housing communities – represented a further limitation, as language, gender, and cultural barriers were likely to have influenced the content and amount of data shared. However, an attempt to balance these limitations was made through careful attention to the interview context and extensive dialogue with the interviewees. Moreover, in response to the feedback provided by the first round of interviewees who explicitly refused to be recorded, a recording device was not used to document the interviews. All possible efforts were taken to provide a trustworthy atmosphere to the interviewee, though, considering the sensitivity of the subject and vulnerability of asylum seekers in a foreign country, one cannot be certain if the interviewees always reported the truth. This research recognizes its one-sided focus, as it solely includes migrants that already moved to Germany. Why some people stay in one place whereas others choose to leave is a crucial question to understanding the decision to migrate amid a complex environmental and social context and should be contemplated in future studies.

Given the aforementioned limitations, as well as the relatively small research sample size of 100 interviewees, this research does not claim to be representative of the overall migrant population in Germany.

3.4 Results

The findings of this empirical research describe interviewees reported resource scarcity, experienced climatic events, human mobility, violence and conflict within different contexts.

Resource scarcity

Electricity or water scarcity, or both was reported by 81 interviewees (Figure 3.1). Nearly half (45%) of the interviewees experienced resource scarcity in their place of origin. However, 36% of interviewees from Syria, Iraq, Yemen and Afghanistan reported the beginning or a significant increase of electricity or water scarcity, or both, after violence started in their place of origin (Figure 3.2).

Syrian interviewees who worked in the agriculture sector reported observing increasing water scarcity and continuous reduction in groundwater since 1997. However, the majority of the group of Syrian interviewees reported electricity or water scarcity or both, specifically after violence erupted in their place of origin. One of them recounted that "before the war, water scarcity was only a problem for farmers as we had two wells in our village. After the war started, there was no water and electricity for anyone." Five Syrian interviewees did not single out resource scarcity, possibly because they generally resided in major cities like Damascus and Homs. One interviewee from a village explained that there was no water scarcity because two rivers ran through his city.

Five Syrian interviewees, who lived under the rule of the IS or Free Syrian Army (FSA) reported that the formally organized groups took control over water and electricity supply in their city and cut or reduced it to control and punish the society. Interviewees from Aleppo reported that the IS cut telephone lines in their city. An interviewee from the Yarmouk camp, a district of Damascus, who lived under the ruling of the FSA, explained that their access to electricity was restricted to two hours or less per day and they had little water. Other Syrian interviewees explained that after the war started or after their cities or neighboring cities were invaded by formally organized groups, the government completely cut or heavily reduced the electricity and water supply. An interviewee from Al-Hasakah reported that "Before the war, there were no problems, but after the war started, there was suddenly no water and we only had one hour of electricity per day. The government claimed that the resource scarcity was due to the bombing of factories."

Six Iraqi interviewees reported resource cuts or shortages due to the ruling of the IS and the Kurdish government. Iraqi interviewees explained that since the IS had entered their cities, the water supply was extremely reduced, and electricity supply was reduced to one hour per day, or to no electricity at all. Furthermore, an interviewee from Sulaymaniyah explained that since the Kurds started governing the region in 1991, electricity was reduced to three hours per day and the water supply was strongly reduced. He explained that "not to provide water

and electricity is all politics, because the government wants that the people are occupied and do not think about politics."

An interviewee from Kunduz, Afghanistan recalled that the formally organized group Taliban cut electricity lines and pressured telecommunication companies to cease services at night in order to control the society. He also explained that as the Taliban had important supporters, the government was not able to act upon these aggressions. Moreover, an Afghan interviewee from Baghlan reported that he survived an attack perpetrated by Taliban in his university, where they poisoned the drinking water and consequently 30 people died. A farmer from Herat, Afghanistan explained that the Taliban were in his city because it was rich and had a river and a dam; he recalled so-called "water wars" with terrorists from Pakistan and Iran and the major problems due to badly managed and distributed water supply.

Many Syrian and Iraqi interviewees who reported resource scarcity after the conflict started in their place of origin, reported about adaptive strategies including investing in a generator for electricity, which was also used to pump up water from the well, buy expensive water in bottles and multiple interviewees described how people handled the scars water supply by using the water of the river since the resource scarcity and violence started.

More than half (56%) of interviewees reported violence, armed conflict and non-state conflict as their main motivation to leave their place of origin (Figure 3.2), out of whom 22 left due to violence and persecution by formally organized groups, 19 fled because of the overall circumstances of armed conflict, and 15 left their country due to the forced military service. This interview sample of 56 interviewees who left the country due to violence, armed conflict and non-state conflict includes 49 interviewees who also reported resource scarcity.

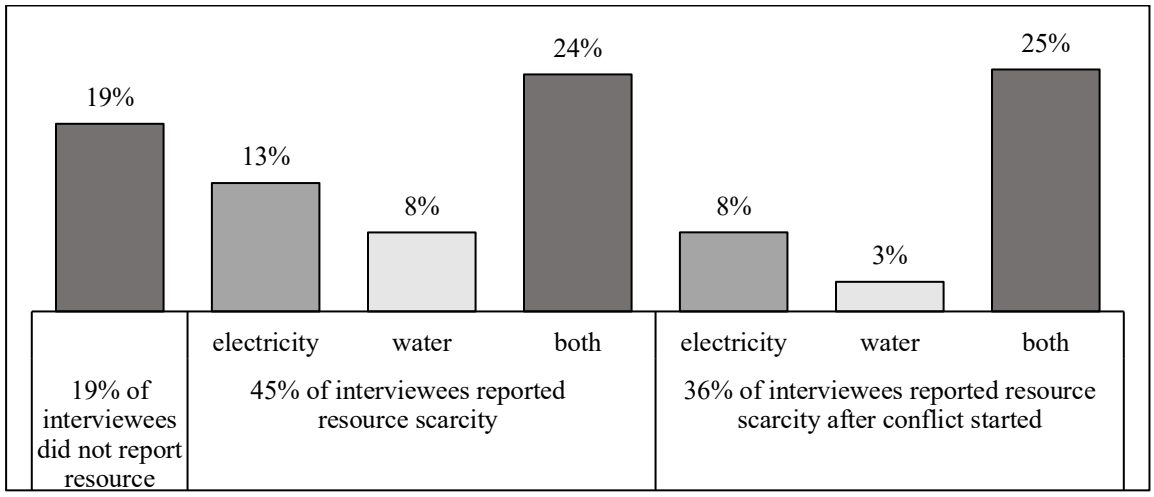

Figure 3.1 81% of interviewees reported resource scarcity in their place of origin

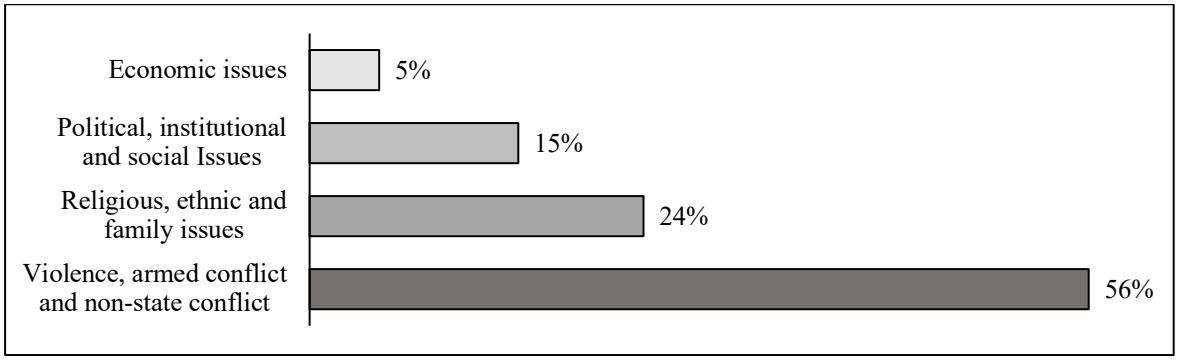

Figure 3.2 Main driver for migration

Climatic events, conflict and human mobility

A Kenyan interviewee described the society in Mandera as "trapped" because the continuous droughts, heat and water scarcity impoverished the region significantly and only a few rich people had the resources to move to neighboring villages during the driest months of the year. However, he explained that moving is dangerous because migrants are chased by the receiving communities that are from different ethnicities.

Especially Syrian interviewees working in the agricultural business from the northeastern Al-Hasakah governorate were severely impacted by the consecutive droughts that occurred between 1999 until 2000. They explained that during this period, those who had the financial means moved to Europe or the United States; those with less financial means moved to Syrian urban centers. While different Syrian interviewees of this study narrated about the consecutive droughts at the end of the 1990s, they also mentioned a significant increase in violence in their home regions.

Moreover, interviewees from different regions in Syria reported about the dire straits during the droughts that started in 2006 and remembered family members, friends and acquaintances who moved to urban areas to find a job. A farmer's wife from Al-Malikiyah reported that her family suffered the most in the three years of consecutive droughts between 2006 to 2008. During this period, their livestock died, they lost their entire crops, and consequentially were forced to sell their property and move to Damascus.

An interviewee from the surroundings of Aleppo explained that her family only survived the multiple droughts over the last several years because they had groundwater and a river that ran through their property, which had barely enough to feed their cattle. Moreover, since

February 2016, her village was occupied by the IS and therefore the government had reduced the resource supply to a minimum and heavily bombed her village. As she explained, the existence of the river made her entire village less vulnerable to the reduction of water supply during the conflict and to climatic events, compared to a nearby village that was heavily affected by droughts.

The severe droughts between 2015 and 2016 strongly affected, among others, the family of an interviewee from the north of Syria. She explained that the drought intensified existing difficulties they were facing since conflict started, which included water and electricity scarcity and exorbitant fuel prices, that impeded them to use their well. These challenges, in addition to the drought forced the interviewee's father to give up his agricultural business, though unlike her daughter and the majority of his relatives, he did not migrate. The interviewee firmly explained that "despite these problems my father did not leave his home, because no one leaves his country because of lost crops or a drought, however because of war."

While interviewees from Somalia, Iraq and Syria reported immigration to urban areas, they did not recall farmers, resource scarcity and conflict or both among migrant communities in urban cities.

3.5 Discussion

The results of this research show that resource scarcity is an obviously perceived challenge across regions, as 81% of interviewees reported water or electricity scarcity, or both in their place of origin. Among these 81 interviewees, the majority of Syrian, Iraqi and Yemeni interviewees reported that water and electricity scarcity only began after conflict started and when formally organized groups or the local government took control over the supply of resources. While resource scarcity was not specifically mentioned as a driver for migration, the interviewees highlighted that the scarcity of water and electricity significantly deteriorated their living conditions. For these interviewees, resource scarcity aggravated circumstances of conflict, hence, increased their vulnerability. Therefore, this research assumes that among the 49 interviewees who fled their country due to conflict, armed conflict, non-state conflict, and also reported resource scarcity, the challenges faced due to resource scarcity may have influenced their decision to migrate.

Empirical results highlight that climatic events can affect the decision to migrate. However, other societal challenges remain dominant as main drivers for migration. Shifts in climate take

decades to be clearly understood and assimilated, and are embedded in cultural and economic practices, and oftentimes perceptions and actions only occur when a crisis is acute (Brzoska & Fröhlich, 2015). Thus, it remains difficult to determine under which circumstances and in which specific migration decisions climatic events play a role. However, in line with existing literature, the results of this research demonstrate that conflict, including the use of resources as a weapon and tool during conflict, increase an individual's, household's and society's vulnerability to climatic events. The narratives highlight the importance of the rivers in some cities which experienced severe resource scarcity and interviewees even precisely reported how climatic events exacerbated or contributing to existing difficulties they faced during conflict, in particular water and electricity scarcity. Therefore, while conflict increases vulnerability of affected entities to climatic events, this research suggests that climatic events may have impacted vulnerable societies that were already suffering from conflict-induced resource scarcity, and hereby even contributed to the interviewees' successive decision to migrate.

The "conflict-induced resource scarcity theory," which attempts to combine the above conceptualization can be applied on the conflict in Syria, which is an example of a conflict with multiple connected social, economic, political and environmental factors (De Châtel, 2014), including direct connections to resource scarcity (Gleick, 2014). Water and water systems were used as weapons and tools during conflict, as with increasing unrest and violence, impacts on urban water distribution systems and intentional attacks on water systems, perpetrated by both the government and opposition groups were reported. Syrian and Iraqi interviewees highlight how the IS used their control over water, water systems and electricity plants as a strategic weapon to oppress enemies and civilians. Interviewees from Syria confirm that the Syrian government and formally organized groups drastically reduced or cut the supply of water and electricity and how this impacted their daily lives, significantly increased insecurity and forced them to adapt to the circumstances. The lack of water and electricity increased societies' vulnerability, including their vulnerability to climatic events, as interviewees reported about the impact of droughts during the conflict.

The presented theory highlights the warfare tactic of conflict-induced resource scarcity, which has far-reaching consequences. Today, the strategic relevance of particularly water during conflict mounted, as climate change increases resource scarcity, and therefore, the tactic of using resource scarcity as weapon or tool during conflict is causing far worse consequences (Gleick, 2006; IPCC, 2014; Tignino, 2010). Considering the results of this research, with 45

interviewees plainly reporting resource scarcity in their place of origin and additionally 36 interviewees reporting water or electricity scarcity, or both once conflict broke out, mounting climatic pressure on resources is likely to worsen scenarios such as presented in this paper and increase human insecurity. The findings confirm the non-linear strong connections between climatic events and conflict, as conflict leaves a society more susceptible to climatic events, and a society effected by climatic events, increase individual's and household's vulnerability to conflict (Barnett, 2007). This analysis also demonstrates that the consequences of climatic events and conflict present similar circumstance. Therefore, this research suggests that conflict may cause climatic event-like circumstance, where conflict and the use of resources as weapon and tool cause comparable circumstances as climatic events, increasing vulnerability of affected entities, aggravating livelihood- and overall human insecurity.

This research specifically investigates the widely discussed link in literature, where climatic events cause rapid mass migration, leading to conflict in receiving areas. However, the resulting empirical evidence on this link remains ambiguous and inconsistent, conform to existing theoretical and empirical evidence (Brzoska & Fröhlich, 2015). Interviewees reported migration across borders or to urban cities, also due to climatic events. However, none engaged in conflict over resources in receiving locations or perceived violence among migrants or with residents in urban centers. While existing theory should not be discarded, this research supports the widespread skepticism on this link and discords based on the findings, existing evidence revealing that most migration flows, did not lead to conflict (Burrows & Kinney, 2016), and mainly because this theory generally assumes a mono-causality in migration decisions, which implies that people migrate solely due to climatic events, which is rarely the case (Black et al., 2011). Overall, it remains surprising that to date, scientific analysis of the relationship between climatic events, conflict and migration still primary focusses on the possible security risk that migrants, motivated by environmental factors pose on receiving locations.

To address the urgent need for novel perspectives and pathways linking climatic events, conflict and migration (Burrows & Kinney, 2016), the results of this research strengthen existing literature, pointing to the importance of assessing the vulnerability of individuals, households and societies, when researching on the impact of climatic events and its links to conflict and migration (Barnett, 2007). The findings demonstrate that vulnerability to the effects of climatic events commonly increases where the dependence on natural resources for

survival is direct and high, as farmers and pastoralists are particularly vulnerable, since they depend on rainfall, existing groundwater and functioning wells for their livestock and harvests; moreover, as conflict-induced resource scarcity leaves affected entities strongly vulnerable to climatic events. The consequences of climatic events depend on how vulnerable affected natural and social systems are, though, at each stage of any pathway, human intervention can influence these systems, for instance through mitigation and adaptation strategies to reduce risks, strengthen resilience, and improve sustainability (Scheffran et al., 2012). Though, the results also confirm the existing literature that the capacity of both, states and affected populations to cope with changes and adapt to climatic events is significantly reduced during conflict (IPCC, 2014). Interviewees reported about investing in adaptation strategies to water and electricity scarcity, however their narratives also highlight that conflict and insecurity weaken local populations significantly by deterring investments, triggering capital flight, undermining public goods delivery, and causing negative health implications, which, as literature highlights, may decrease the population's ability to cope with increased environmental hardship (Uexkull et al., 2016).

3.6 Conclusion

Rising political and scientific attention on the potential impacts of global warming on human, national and international security and peace, and the persistent complexity and inherent uncertainty about the links between climatic events, conflict and migration, have inspired this paper. To the last point, this research was committed to advance the understanding of the causal linkages among climatic events, conflict and migration and to offer a distinct perspective between these phenomena. For this purpose, existing related scientific literature was scrutinized and individual experiences, perceptions and decisions of 100 asylum seekers from 17 countries hosted in German facilities were explored.

The "conflict-induced resource scarcity theory" demonstrates how conflict, in particular the control over resources used as weapon and tool during conflict, increases the vulnerability of affected entities. Consequently, climate's impact on a vulnerable society is potentially stronger and, in the absence of effective governance structure or adaptation efforts, may contribute to human and livelihood insecurity, further aggravate conflict and instigate or increase population movements. This theory potentially represents one of multiple pathways of how climatic events can be linked to conflict and migration and it emphasizes and empirically confirms decisive existing scientific insights – mechanisms and mediating factors

- which are crucial for any analysis of the relationship between these scientific research areas, which include: that climatic events will not undermine human security or affect migration or conflict in isolation from other important social factors; that the impact of climatic events depend on the vulnerability of social systems and how they adapt to climate stress; that conflict increases vulnerability to climatic events; and this research singles out the importance of resources, among multiple mediating factors for human security. Overall, in this emerging, complex and multidisciplinary research field, there is a tremendous need for considerably more understanding, testing and empirical evidence on the mechanisms, intervening factors and the "conflict-induced resource scarcity theory" proposed in this paper.

Based on presented results, this paper suggests that research on the nexus between climatic events, conflict and migration may consider a diverse research approach, where conflict causes climatic event-like circumstance. In light of the prediction that climate change will be an increasingly important driver of human insecurity in the future (IPCC, 2014), the pace of gathering knowledge on climate's impact could be accelerated by considering the non-linear relationship and parallels of risks and consequences of climatic events and conflict on human security.

While targeting freshwater and water infrastructure during conflict is as old as war itself, the difference today is that the impacts of climate change make the consequences of this strategy far worse. Since 2010, the United Nations General Assembly recognizes the human right to water and sanitation and that the denial of water to civilians constitutes a war crime. Findings of this research on the use of water and electricity as weapon and tool during conflict by both, government forces and formally organized groups and its wide-ranging implications should persuade policy makers to protecting water resources, based on the UN resolution 64/292 in conflict zones and raise global awareness. Furthermore, as conflict, including conflict-induced resource scarcity increase vulnerability to climatic events, it becomes decisive for human security to improve and implement conflict-sensitive mitigation and adaptation strategies that contain conflict, for instance with strategies impeding formally organized groups to gain control over water, water systems and electricity supply. Precautious actions to reduce the risks of conflict and resource scarcity could be sought through international cooperation, effective institutional frameworks, conflict management, and governance mechanisms. Moreover, practitioners and NGOs in conflict zones may emphasize the need of resource scarcity and provide assistance and information especially among populations at risk.

Scientific research has an important role to fill in reversing the current neglect of research on the linkages between water and international peace and security and the relationship between water and conflict, fostering analysis on how water is used as weapon or tool, or both during conflict and not only as factor triggering conflict (Gleick, 2006, 2014; Tignino, 2010). Furthermore, with the debate on climatic events ramping up, coinciding with the scientific agreement that climate change is real and predominantly driven by humans, academia is fundamental in providing policy makers evidence-based information and discourses, while avoiding simple and sensationalist conclusions on the relationship between climatic events, conflict and migration. Therefore, the climate-migration literature, which emphasizes predominantly on climate as the driving factor of migration (Brzoska & Fröhlich, 2015), would benefit in analyzing the main factors for migration, such as conflict and their links to climatic events and migration.

Undoubtedly, the alarmist declarations depicting climatic events as a human security threat, since the 1990s, have spurred the UNFCCC's COP 21 and the important 2015 Paris Climate Conference, leading to a universal agreement between 196 nations to curb global warming at 1.5 C°. However, the majority of EU's member states responses to the recent so-called "migrant crisis" was on maintaining security through increased border control, which was possibly also spurred by how climate change risks are communicated or perceived, and how climatic events and its links to migration and conflict were used as "convenient truth" by policy makers. Therefore, increased understanding on the relationship between climatic events, conflict and migration, the framing of climate change risks by the scientific community, and the way policy makers are informed and understand the links between climatic events, conflict and migration is crucial to sustain and improve human, national and international security and peace.

3.7 References

Adger, W.N., & Barnett, J., Dabelko, G. (2013). Climate and war: a call for more research. Nature, 498, 178

Barnett, Jon., & Adger, W.N. (2007). Climatic events, human security and violent conflict. Political Geography, 26, 639-655. https://doi.org/10.1016/j.polgeo.2007.03.003

Beach, A. (2015). The Islamic State's Most Deadly Weapon of War: Water? Accessed 22 October 2018. Retrieved from https://nationalinterest.org/blog/the-buzz/the-islamic-states-most-deadly-weapon-war-water-12821

Berlemann, M., & Steinhardt, F.S. (2017). Climate Change, Natural Disasters, and Migration—a Survey of the Empirical Evidence. CESifo Economic Studies, 63(4), 353-385. https://doi.org/10.1093/cesifo/ifx019

Black, R., & Adger, W.N., &Arnell, N., & Dercon, S., & Geddes. A., & Thomas, D. (2011). The Effect of Environmental Change on Human Migration. *Global Environmental Change, 21*(1), s3-s11. https://doi.org/10.1016/j.gloenvcha.2011.10.001

Brzoska, M., & Fröhlich. C. (2015). Climate Change, Migration and Violent Conflict: Vulnerabilities, Pathways and Adaptation Strategies. *Migration and Development, 5*(2), 190-210. https://doi.org/10.1080/21632324.2015.1022973

Brown, O. (2008). Migration and climatic events. International Organization for Migration. Accessed 22 October 2018. Retrieved from http://www.iisd.org/publications/migration-and-climate-change

Buhaug, H, Nordkvelle, J., Bernauer, T., Böhmelt, T., Brzoska, M., Busby, J.W., Ciccone, A., Fjelde, H., Gartzke, E., Gleditsch, N.P., Goldstone, J.A., Hegre, H., Holtermann, H., Koubi, V., Link, P.M., Lujala, P., O'Loughlin, J., Raleigh, C., Scheffran, J., Schilling, J., Smith, T.G., Theisen, O.M., Tol, R.S.J., Urdal, H., & Uexkull, N. (2014). One Effect to Rule Them All? A Comment on Climate and Conflict. *Climatic Change, 127,* 291-397. https://doi.org/10.1007/s10584-014-1266-1

Burrows, K., & Kinney, P. (2016). Exploring the Climate Change, Migration and Conflict Nexus. *International Journal of Environmental Research and Public Health, 13* (4), 443-17. https://doi.org/10.3390/ijerph13040443

Carleton, T., A., & Hsiang, S.M. (2016). Social and Economic Impacts of Climate. *Science, 353* (6304), 9837-37. https://doi.org/10.1126/science.aad9837

Cattaneo, C., & Peri, G. (2015). The Migration Response to Increasing Temperatures. *Centro Euro-Mediterraneo sui Cambiamenti Climatici RP0260*, 1-46.

Cattaneo, C., & Bosetti, V. (2017). Climate-Induced International Migration and Conflicts. CESifo Economic Studies, 63(4), 500–528. https://doi.org/10.1093/cesifo/ifx010.

De Châtel, F. (2014). The Role of Drought and Climatic events in the Syrian Uprising: Untangling the Triggers of the Revolution. Middle Eastern Studies, 50(4), 521-535. https://doi.org/10.1080/00263206.2013.850076

Ghimire, R., Ferreira, S., & Dorfman, H.J. (2015). Flood-Induced Displacement and Civil Conflict. World Development, 66 (C), 614–28. https://doi.org/10.1016/j.worlddev.2014.09.021

Gleditsch, N.P., & Nordas, R. (2012). Whither the weather? Climatic events and conflict. Journal of Peace Research, 49(1), 3-9 https://doi.org/10.1177/0022343311431288

Gleick, P. H. (1993). Water and Conflict: Fresh Water Resources and International Security. International Security 18 (1), 79-112.

Gleick, P. H. (2006). Water and Terrorism. Water Policy 8 (6). IWA Publishing: 481–23. doi:10.2166/wp.2006.035.

Gleick, P. H. (2014). Water, Drought, Climatic events, and Conflict in Syria. Weather, Climate, and Society, 6 (3), 331–40. doi:10.1175/WCAS-D-13-00059.1.

Homer-Dixon, F. T. (1994). Environmental Scarcities and Violent Conflict: Evidence from Cases. MIT Press Journals, 19, 5-40.

Hsiang, M., Solomon Burke, M., & Miguel, Edward 2013. Quantifying the Influence of Climate on Human Conflict. Science, 341 (6151), 1235367–67. doi:10.1126/science.1235367.

Hunter, M., Lori; Luna, K., Jessie & Norton, M. Rachel. (2015). Environmental Dimensions of Migration. Annual Review of Sociology. 41 (1), 377–97. doi:10.1146/annurev-soc-073014-112223.

Humud, C., Pirog, R., & Rosen, L. (2015). Islamic State Financing and U.S. Policy Approaches. Congressional Research Service. 1-32.

Inglehart, R.F. & Norris, P. (2012). The Four Horsemen of the Apocalypse: understanding human security. Scandinavian Political Studies, 35(1), 71-96.

IPCC, Climatic events (1990). First assessment report (Working group II). Geneva. Retrieved from: https://www.ipcc.ch/publications_and_data/publications_ipcc_first_assessment_1990_wg1.shtml

IPCC, Climatic events (2007). Fourth Assessment. (Working Group II). Geneva. Retrieved from: http://www.ipcc.ch/publications_and_data/ar4/wg2/en/contents.html

IPCC, Climatic events (2014). Fifth Assessment Report. Working Group II. Geneva. Retrieved from: https://www.ipcc.ch/report/ar5/

IPCC. Synthesis Report (2014). Fifth Assessment Report. Geneva. Retrieved from: https://www.ipcc.ch/report/ar5/

Kelley, C P, S Mohtadi, & M A Cane. 2015. Climatic events in the Fertile Crescent and Implications of the Recent Syrian Drought. PNAS, 112 (11), 3241-3246. doi:10.1073/pnas.1421533112.

Lloyd, S. (1961). Twin Rivers: A Brief History of Iraq from the Earliest Times to the Present Day. Oxford University Press. 3rd ed., 235.

Mroue, B. (2012). Activists: Syrian rebels seize major dam in North. Daily Star Lebanon, 26 November 2012. Available online: http://www.dailystar.com.lb/News/Middle-East/2012/Nov-26/196180-activists-syrian-rebels-seize-major-dam-in-north.ashx

Miles, T. (2017) Syria committed war crime by bombing Damascus water supply: U.N. available online: https://www.reuters.com/article/us-mideast-crisis-syria-water/syria-committed-war-crime-by-bombing-damascus-water-supply-u-n-idUSKBN16L0W5

Myers, N. (2005). Environmental refugees: An emergent security issue. Vienna: Organization for Security and Co-operation in Europe.

Owen, T. (2004). Human security – conflict, critique and consensus: colloquium remarks and a proposal for a threshold-based definition. Security Dialogue, 35(3), 373-387.

Paris, R. (2001). Human security: paradigm shift or hot air? International Security, 26(2), 87-102.

Raleigh, C., Linke, A., Hegre, H., & Karlsen, J. (2010). Introducing ACLED: An Armed Conflict Location and Event Dataset. Journal of Peace Research. 47(5) 651-660. doi: 10.1177/0022343310378914

Raleigh, C. (2010) Political Marginalization, Climatic events, and Conflict in African Sahel States. International Studies Review. 12, 69-86.

Reuveny, R. (2007) Climatic Event-Induced Migration and Violent Conflict. Political Geography 26 (6), 656–73. doi:10.1016/j.polgeo.2007.05.001.

Saad, H. (2013) Syrian Insurgents Claim to Control Large Hydropower Dam, available on: https://www.nytimes.com/2013/02/12/world/middleeast/syrian-insurgents-claim-to-control-large-hydropower-dam.html?_r=0

Scheffran, J., Brzoska, M., Kominek, J., & Link, P.M. (2012). Climate Change and Violent Conflict. Science, 336 (6083), 869-871.

Scheffran, J., Brzoska, M., Brauch, H.G., Link, P.M. & Schilling J. (2012a): Climatic events, Human Security and Violent Conflict: Challenges for Societal Stability. Springer-Verlag Berlin Heidelberg, Germany, 868.

Theisen, M., O., Gleditsch, & Petter, N. (2013). Is climate change a driver of armed conflict? Climatic Change. 117, 613-625. doi: 10.1007/s10584-012-0649-4

Tignino, M., (2010). Water, international peace, and security. International Review of the Red Cross. 92 (879). doi: 10.1017/S181638311000055X

Uexkull, N., Croicu, M., Fjelde, H., & Buhaug, H., (2016). Civil Conflict Sensitivity to Growing-Season Drought. PNAS. 113 (44), 12391-12396. doi:10.1073/pnas.1607542113.

United Nations General Assembly. The human right to water and sanitation. available online: http://www.un.org/waterforlifedecade/human_right_to_water.shtml

United Nations Environment Program (UNEP) (2011). Livelihood Security: Climatic events, Migration and Conflict in the Sahel. Available online: http://www.unep.org/pdf/UNEP_Sahel_EN.pdf

Withagen, C. (2014). The Climatic events, Migration and Conflict Nexus. Environment and Development Economics, 19 (03), 1–4. doi:10.1017/S1355770X14000321.

Conclusion

This thesis by publication contributes to efforts to advance the understanding and exploration of the risks, links and consequences of climatic events, conflict, and migration – both independently and symbiotically – and offers novel perspectives and frameworks to determine their consequences on human, national and international security. It provides novel data on migrant's perceived drivers for international migration to Europe and insights – if any – on the perceptions of climatic events. For this purpose, existing related scientific literature was scrutinized, and individual semi-structured interviews were conducted with 100 asylum seekers from 17 countries hosted in German facilities. A key strength of the collected data is that the experiences, perceptions and decisions of individuals about their drivers for migration and climatic events were captured and thoroughly explored.

The main research question, "What are the perceived drivers for migration and – if any – the perceptions of climatic events determining migration decisions of asylum seekers in Germany, which peaked in 2015?" is addressed in all three articles of this thesis by publication. However, due to the vast and multidisciplinary scientific literature, the complexity and inherent uncertainty on climatic events, conflict, migration and their links, the researcher was compelled to take a step back and firstly gather understanding on the question, "How did asylum seekers perceive climatic events– if so – in their place of origin and how did it affect their daily lives and their decision to migrate?"

The "climate-human analytical framework" that was developed in the first paper contributes to the emerging research agenda aimed at understanding how climatic events interact with societies and shape social outcomes today. The framework containing theories and mechanisms at the macro level is meant to be applicable across countries and regions and is thought useful for describing and analyzing how climate impacts households and societies. The results validate, and the framework demonstrates that there is no direct link in the climate-human interaction that causes the same social response across regions and while climate is not the only factor, it is certainly an important one, influencing societies in numerous dimensions and at many scales (Carleton & Hsiang, 2016).

To further foster the main research question of this thesis, it was important for this study to gather understanding on the links between climatic events and migration and, separately, climatic events and conflict based on existing scientific literature and the developed climate-

human analytical framework. Overall, the results highlight that it is challenging to isolate the effect of climatic events from migration and separately from conflict, as the types of climatic events, their interaction with the dimensions of society – explored in the climate-human analytical framework – and the vulnerability of the impacted household or society are all variables that affect the dynamic. In line with the existing literature, this research reveals ambiguous results on the links between climate and conflict, and similarly, the experiences and perceptions narrated by interviewees depict a mixed picture on the links between climate and human mobility and confirm that every decision to migrate is unique (Black et al., 2011; Morrissey, 2013).

To increase understanding on the links between climatic events and migration, it was important to analyze how climatic events are perceived by individuals across regions. This focus on the perception of individuals of climatic events fills an empirical gap in scientific literature, that was recently determined by Hunter et all. (2015). While results show that the majority (56%) of interviewees - regardless their background - were able to explain how changing climate conditions were perceived or how they affected their daily lives in their place of origin, climatic events often only represent a subtle factor impacting societies, as other societal challenges overshadow the climate's impact. In the first article, this research suggests that factors such as the extent of inequalities in local power structures and access to knowledge on climatic events may play a role in people's decision and behavior when impacted by climatic events.

The importance of assessing the vulnerability of individuals, households and societies, when researching the impact of climatic events and their links to conflict and migration was recognized early on in this study. The findings demonstrate that climatic events reflect considerable local variations, with varied impacts on different segments of society and climate's impact on individuals and households alters depending on the vulnerability specific to each entity. The results confirm that vulnerability to the effects of climatic events commonly increases where the dependence on natural resources for survival is direct and high. Moreover, the third article uncovers that conflict, including the use of resources as a weapon and tool, increases the vulnerability of an individual, household and society and therefore also the entity's vulnerability to climatic events. As an important element of vulnerability assessments, an analysis of the adaptive capacity of individuals, households and societies was considered essential in this research because they alter the overall effect of climatic events. The findings confirm the existing research that adaptation strategies across

sectors and regions show great dissimilarities and that the capacity of both, states and affected populations to cope with changes and adapt to climatic events is significantly reduced during conflict (IPCC, 2014).

To gather understanding on the potential relationship between climatic events, conflict and migration, this research initially verified the existing scientific literature. It specifically investigates, with dedicated interview questions, on the widely discussed link, where climatic events cause rapid mass migration, leading to conflict in receiving areas, however, empirical results remain inconclusive and hence confirm existing ambiguous theoretical and empirical evidence in literature (Brzoska & Fröhlich, 2015).

The compelling narratives of interviewees from Syria, Iraq, Yemen and Afghanistan highlight how the government or formally organized groups such as IS, FSA and Taliban, or both, controlled, cut or contaminated water, water systems and electricity plants to oppress enemies and civilians, leading to increased insecurity. Therefore, the third article singles out resource scarcity as a crucial mediating factor in the analysis of the nexus between climatic event, conflict and migration. The third paper is concerned with the question "How did asylum seekers perceive resource scarcity in their place of origin and how is it associated with conflict, climatic events and migration?" and specifically scrutinizes the ongoing Syrian conflict as it is characterized by multiple mechanisms and mediating factors impacting the relationship between climatic events, conflict and migration. Furthermore, the Syrian conflict is a widely discussed example of a conflict with complicated but direct connections to resource scarcity, in particular water. The results of this research show that resource scarcity is an obviously perceived challenge across regions, as 81% of interviewees reported water or electricity scarcity, or both in their place of origin. Among these 81 interviewees, for the majority of Syrian, Iraqi and Yemeni interviewees, water and electricity scarcity only began after conflict started and when formally organized groups or the local government took control over the supply of resources. For these interviewees, resource scarcity aggravated circumstances of conflict, hence, increased their vulnerability.

Based on existing literature and empirical results, the "conflict-induced resource scarcity theory" was developed, where conflict, in particular, the control over resources used as weapon and tool during conflict, increases the vulnerability of affected entities, also to climatic events. Consequently, climate's impact on a vulnerable society is potentially stronger and in the absence of effective governance structure or adaptation efforts, it may contribute to human and livelihood insecurity, further aggravate conflict and instigate or increase

population movements. Therefore, while resource scarcity was not specifically mentioned as a driver for migration, it is likely that among the 49 interviewees who fled their country due to conflict, and also reported resource scarcity, the challenges faced due to water and electricity scarcity affected their decision to migrate. Moreover, while conflict increases the vulnerability of affected entities to climatic events, this research suggests, that climatic events may have impacted vulnerable societies already suffering from conflict-induced resource scarcity, and hereby even contributed, by exacerbating existing challenges of conflict, to the interviewees' successive decision to migrate.

As the current "migrant crisis" is at the core of the debate and connections of climatic events, conflict and migration, analyzing, "What were asylum seekers' perceived drivers for international migration to Europe?" is a central question for this research. As one of the few empirical studies about the drivers of international migration conducted in the German context, it provides important novel insights on the actual drivers of international migration to Europe. This research confirms that migration decisions are highly complex and usually based on multiple drivers, as the majority (61%) of interviewees were motivated by two or three sub-drivers to leave their place of origin. It is important to note, that none of the interviewees reported environmental or climatic events as a perceived driver for migration. The majority (56%) of interviewees left their place of origin primarily motivated by armed and non-state conflict and the overall need for secure livelihood opportunities. Notably, these included many interviewees who faced extreme violence, though they had to migrate mainly due to financial difficulties, shortages of resources and deterioration of education facilities and infrastructure, all of which were caused by armed conflict. The results moreover demonstrate that the driver- religion, ethnic and family issues – was indicated as one of the drivers by 50 per cent of interviewees for moving across borders and surprisingly, it exhibited the highest cultural diversity among all motivations for migration, showing that religious and ethnic persecution and discrimination is a major driver for international migration and this research suggests that it is likely to increase as it is not confined to one country or region. This research also brings to light, that drivers for migration can differ between countries and are rooted in history, governance, the dynamics of the society, and especially depend on the decision of each individual or household. Therefore, it recognizes that there do not exist exclusive drivers or root causes for migration.

Scientific research on international migration is moreover enhanced in this study by a comparison of three top European migrant destinations, which shows, that the central drivers

for migration to Europe are safety and security, as well as the presence of a family network. Findings support the claim, that the importance of Germany's or any other country's welfare, asylum support system and national policies are weak drivers for migration and overall, the choice of the destination country has little or no bearing in the migrant's initial decision to move internationally to Europe.

Considering the potential security risks of each - climatic events, conflict, migration - and their relationships, this research was keen in advancing understanding and asks, "How did asylum seekers perceive climatic events in their place of origin and how did it affect their daily lives and their decision to migrate?" The climate-human analytical framework developed in this research highlights how climate exerts significant influence and risks over every dimension in human systems, as depicted in the framework as the five dimensions of society – political/institutional, economic, environmental, demographic, and social – that represent the pillars of any society. Furthermore, results show – in particular based on the concept of vulnerability and empirical results – that climate's impact across regions and segments of society lead to different distributions of outcomes, which can be considered an important source of inequality, deepening international tensions.

Various academics, policy makers, public institutions suggest that one major consequence of climate change is that climatic events force millions of people to migrate permanently or temporary. They proclaim, that large-scale migration could lead to additional adverse outcomes, such as social unrest and armed conflict (Reuveny, 2007). This widespread portrayal of migration as a security risk, especially among policy makers is discussed in this research, though evidence on the widely debated assumption on rapid mass migration, leading to conflict in receiving areas has not been confirmed. Results confirm that knowledge gaps still remain in scientific literature (Koubi et all., 2016), that migration decisions are complex and that recent public discourse and, to an extent, policy responses about migration, have often been based on limited research and media inflated perception.

This research enhances analysis on how each of the natural and social science research areas – climatic events, conflict and migration – and their links impact human, national and international insecurity. Results highlight the importance of the role of the local government and its public policies in implementing successful adaptation strategies to reduce risks and the dangers of obstruction of knowledge on climate change and the use of scars resources as weapon or tool of conflict by local governments, as it reduces human and national security.

Moreover, the wide-ranging consequences and international security risks of the nexus between climatic events, conflict and migration are presented and how during the recent so-called “migrant crisis” climate change and its links to migration and conflict was used as “convenient truth” by policy makers to reach political goals. The analysis shows, that if policy makers primary understand vulnerability to climate change in developing countries as a risk to their national security, through migration and conflict, ignoring the actual driver of migration, it may lead their responses towards border protection, defense spending and international insecurity, as witnessed in recent history, rather than towards sustainable solutions, including the reduction of emissions and efforts to foster adaptation to climate change.

Appendix

Appendix 1: Implications for academia, policy makers and civil society

This Ph.D. research is an interdisciplinary project, as the analysis of each research area - climatic events, conflict, migration – their links and consequences for human security require evidence about social and environmental processes across multiple scales and research areas. This research presents existing theories, analyses and connects concepts and problem areas from the natural and social sciences and informs with its results academics, policy makers and civil society. Results, theories and suggestions enhance scientific research on climatic events, migration studies and conflict research, among multiple other related multidisciplinary research areas.

The current EU agenda on migration, among others, urges academia to come up with suggestions to improve the management of migration by addressing the drivers and structural factors that impede people from building and maintaining sustainable livelihoods in their country of origin and therefore seek a future elsewhere (Migali et al., 2018). Understanding the drivers for migration is an important contemporary research objective across academic disciplines. However, existing research and the multiple migration theories neglect analyzing the individual migration decisions and mostly focus on aggregated socio-economic data about migration (Hoffmann et all., 201). Koubi et all. (2016) highlight, that current empirical shortcomings in migration studies, stem on the one hand from the lack of theoretical work and data and on the other hand from the emphasis on analyzing which individuals migrate rather than why they migrate. This research attempts to fill this research gap by providing empirical evidence on the drivers of migration based on the experiences, perceptions and decisions of migrants in Germany. Moreover, its focus on the perceptions of individuals of climatic events fills an empirical gap in scientific literature, that was recently determined by Hunter et all. (2015). Results of the semi-structures interviews with 100 asylum seekers offer important insights for the analysis of each research area - climatic events, conflict, migration – their links and consequences and the drivers for migration.

The climate-human analytical framework, presented in this thesis, is particularly useful for scientific research, as it accounts from numerous findings in literature and explains them in a consolidated system, seeking to contribute to a major research gap by focusing on exploring and theorizing on the complex mechanisms of how climatic events shape social outcomes

today. Until present, the interplay of climate and societies seems to remain unpredictable to some extent, as climate's impact depends on the type of climatic events, the multiple dimensions of society and vulnerability to climate change, including adaptation strategies. The climate-human analytical framework may support academics across disciplines in advancing the emerging research agenda aimed at understanding how climate phenomena impact and shape social outcomes today and foster systematic conceptualization, addressing the entire spectrum of climatic events, considering the entire dimensions of society, analyzing vulnerability to climate change and existing adaptation gaps.

Presented up-to-date trends and multiple findings supporting existing research on migration, provide a nuanced understanding of the current pattern of international migration to Europe, including the complex and numerous drivers of international migration increase scientific literature and foster the still limited research on the "migrant crisis." This research supports academia's important role by providing evidence-based information on migration in Europe and beyond and improve public discourse and, to an extent, policy responses about migration, as they have been partially based on limited research and evidence. Based on the analysis of the climate-migration relationship, the presented wide-ranging impacts of climate and the midst of contemporary climate change, this study suggests that environmental considerations should play a more central role in mainstream migration studies. Moreover, as the climate-migration literature emphasizes predominantly climate as the driving factor of migration (Brzoska and Fröhlich 2015), it would benefit from analyzing the main factors for migration, such as conflict and their links to climatic events and migration. Multidisciplinary research is crucial in this scientific domain and academia has a fundamental role in providing evidence-based information and discourses, while avoiding simple and sensationalist conclusions on the relationship between climatic events, conflict and migration.

With the "conflict-induced resource scarcity theory" this research enhances the emerging and multidisciplinary research field concerned with the links between climatic events, conflict and migration and the existing limited knowledge and theories on this relationship. It herewith attempts to enhance existing literature, by yielding a novel nexus theory, which advances knowledge and new perspectives.

Moreover, results point to the importance of the concept of vulnerability and foster the field of vulnerability studies. The concept of vulnerability is a decisive mechanism and crucial tool to map the complex interrelation between climatic events and social entities, because at each level of any pathway, human intervention, based on scientific research, can influence these

systems. For instance, mitigation, precautious actions and adaptation strategies can serve to reduce risks, strengthen resilience, and improve sustainability. Academia is required to address climatic events and adaptation to climate change, as it is a long-term, iterative process that will span many decades.

Gathered empirical results about the ongoing conflict in Syria strengthen existing literature by highlighting the central role of resource scarcity during the conflict and by providing novel impetus to conflict research. This research highlights the importance to reversing the current neglect of research on the linkages between water and international peace and security and the relationship between water and armed conflict, fostering analysis on how water is used as weapon or tool, or both during conflict and not only as factor triggering conflict.

Moreover, results confirm the none linear connections between climatic events and conflict, as conflict leaves a society more susceptible to climatic events, and a society effected by climatic events, that increase individual's and household's vulnerability, is more susceptible to conflict (Barnett, 2007). The analysis demonstrates that the consequences of climatic events and conflict present similar circumstance and this research suggests, that conflict may cause climatic event-like circumstance, where conflict and the use of resources as weapon and tool cause comparable circumstances as climatic events, increasing vulnerability of affected entities, aggravating livelihood- and overall human insecurity. Therefore, academia could potentially accelerate the pace of gathering knowledge on climate's impact by considering the parallels of risks and consequences of climatic events and conflict on human security. Shifts in climate take decades to be clearly understood and assimilated, examining climatic event-like circumstance may provide new perspectives and insights for climate change research in academia.

Based on existing data and results, this research urges academia to foster research on the significant economic and social burdens caused by climate's impact on modern populations, which are expected to increase in the future. This interdisciplinary research provides a step forward, as scientific analysis and theories are required now, if climate's impacts are to be dealt with in a way which does not lead to increased suffering but facilitates reductions in inequality and improvements in well-being.

The findings of this research also provide important insight for policy makers and civil society. Results of this study highlight the crucial role of the local government and its public policies. Interviewees from 17 countries reported on diverse impacts of climatic events, local

government's lack of support during climatic events, incapacity to cope with changes and adapt to climatic events especially during conflict and even obstruction of knowledge on climatic events in their places of origin. Results should help to convince policy makers to take responsibility in addressing the entire spectrum of climatic events and responding to existing adaptation gaps with mechanisms to cope with the community strain and strategies for capacity building, technical assistance and support by protecting the most vulnerable populations. Governments are urged to take responsibility, improve human security including livelihoods, health and standard of living, because further neglect could lead to sociopolitical instability, political unrest, insurgencies and state failure.

Transnational migration will continue to be a key issue in international politics and in the German agenda, one can perceive the need for effective policies to overcome the era of the "migrant crisis", to respond to the expectations of civil society, containing the escalation of the political debate, and to keep in check anti-immigration parties to prevent future crises. Considering the political upheaval concerning migration and the recent "migrant crisis", today, understanding the drivers and patterns of migration is a central international concern in politics and policymaking (Migali et al., 2018). This research fostered understanding of the current pattern of international migration to Europe, that should serve policy or any program seeking to influence irregular migration to address the actual drivers with a long-term and evidence-based sustainable migration management approach and development policies at both national and international levels, in Germany, Europe, transit countries and migrant's countries of origin.

Findings of this research on the use of water and electricity as weapon and tool during conflict by both, government forces and formally organized groups and its wide-ranging implications should persuade policy makers to protecting water resources, based on the UN resolution 64/292 in conflict zones and raise global awareness. Results highlight that targeting freshwater and water infrastructure during conflict is a widely used and fatal strategy in conflict, and that today, the impacts of climate change make the consequences far worse. Therefore, collected evidence should enforce the fact, that the denial of water to civilians constitutes a war crime with significant consequences and policy makers, practitioners and NGOs in conflict zones are urged to enforce the human right to water and sanitation. Furthermore, as conflict, including conflict-induced resource scarcity increase vulnerability to climatic events, it becomes decisive for human security to improve and implement conflict-sensitive mitigation and adaptation strategies that contain conflict, for instance with strategies

impeding formally organized groups to gain control over water, water systems and electricity supply.

To date, public discourse and, to an extent, policy responses about migration, have been based on limited research and evidence. Results should serve policy makers to base their discourses on facts and avoid media inflated perceptions and reactive mitigation attempts that lead to emergency driven policy approaches such as closing entry points to Europe; and evidence-based considerations should serve civil society with the goal of enhancing the overall European discourse on migration. The more evidence-based information is provided to policy makers and civil society, the more difficult it becomes for stakeholders to deny facts and use climatic events and its links to migration and conflict as "convenient truth", to reach political goals. Results, presented drivers of international migration and evidence-based theories, including the "climate-human analytical framework" and the "conflict-induced resource scarcity theory" advance knowledge on the consequences of climatic events, as inquired by the Paris Agreement; and may help to prevent, that some policy makers continue primary to understand vulnerability to climate change in developing countries as a risk to their national security, through migration and conflict. This research encourages investment in the reduction of emissions and efforts to foster adaptation to climate change and policy makers responses should not be based on media inflated perceptions, reactive mitigation attempts and emergency driven policy approaches.

With the debate on climate change ramping up, coinciding with the scientific agreement that climate change is real and predominantly driven by humans, academia and policy makers are required to closely cooperate, provide and pronounce evidence-based information and discourses reaching civil society, while avoiding simple and sensationalist conclusions on each - climatic events, conflict and migration - and their links.

Appendix 2: Methodological considerations, limitations and validity

The major methodological considerations, limitations and validation were briefly mentioned under the methodology section in each article. However, further details on methodological considerations, limitations and validity of the research project are important to mention and may be valuable for consideration in future research.

Data collection and study participants

The first encountered major limitation of the data collection of this research was to gain access and permission to conduct interviews in migrant housings and principally to enter initial reception facilities required a difficult and protracted application processes. The researcher had to provide documentation about the purpose of the study, was questioned during a meeting with the directors of all migrant housings, provided a clearance certificate and written agreement on data protection. The final approval to conduct interviews in the different migrant housings was sought from the directors of the facilities and, in specific cases, from the federal government's regional board.

Almost all directors of the contacted migrant facilities were interested in the research project, provided support and set clear restrictions concerning the interviewer's stay in the facility. However, it is important to mention that during the application process to access the facilities, the purpose of the present research study caused confusion and debate reaching the federal government's regional board. In fact, access to one initial reception center was initially denied on the following basis, as was described by e-mail by the migrant housing director, "climate change is not an official cause for migration or persecution based on the Asylum act § 3 (§a und §b). Therefore, a research concerning this matter and its analysis is under no circumstances representative and could lead to irritation". While the debate on this issue continued over months, the federal government's regional board overruled the facility director and finally allowed the researcher to enter the camp to recruit interviewees, however denied any assistance from the staff working in the facility, access to the migrant accommodations and to conduct interviews in the migrant facility. In three other initial migrant facilities, approval was significantly eased, because the interviewer offered to provide a voluntary engagement, in the form of sports classes for the migrants, which reportedly helped to create a win-win situation between the facility directors, social workers and the researcher.

Identifying qualified interpreters was demanding, especially because the interviews were set to be conducted in nine languages. Many interpreters who worked in the migrant housings

had migration background and a few of them came to Germany about five to ten years earlier. These interpreters who had been asylum seekers themselves and were known in the migrant housings among the interviewees were clearly the most adequate for translating the interviews, because they transferred empathy and trust to the interviewee and provided valuable additional country specific information to the interviewer. The gender and cultural background of the interpreters presented an additional challenge in multiple occasions, as manifested by the reluctance or refusal of male interviewees to participate with female interpreters. Furthermore, interviewees – and more prominently African interviewees – expressed their reservations about engaging with an interpreter who was not born in their country of origin. While great effort was put into finding qualified interpreters for each interview, one cannot conclusively state that all potential misunderstandings and misinterpretations were avoided.

The identity of the interviewer – a white European woman and outsider of the migrant housing communities – represented a further limitation for the data collection, as language, gender, and cultural barriers were likely to have influenced the content and amount of data shared. For instance, in different occasions during the recruitment process it was obvious that male migrants were reluctant to talk to a female interviewer and in a few instances male migrants openly disprized the researcher. However, an attempt to balance these limitations was made through careful attention to the interview context and extensive dialogue with the interviewees.

The very first few interviewees who explicitly refused to be recorded, including one interviewee who started shivering and crying when asked to be recorded, clearly demonstrated that using a recording device was counterproductive for data collection in this research. Conscious of the fact that handwritten protocols could reduce the attention of the interviewer on the content and even risk of losing important information, this research believes that the decision not to use a recording device that was made in response to the feedback provided by the first round of interviewees, increased trust between the interviewer and interviewee and improved the data collection.

The consent form presented an additional major hurdle, as the majority of migrants were apprehensive about signing it while others were visibly ashamed of being illiterate. Even if great effort was invested in explaining the purpose of the consent form, highlighting that its main purpose is to protect the interviewees' data and anonymity, many interviewees refused to participate in the research, because the form evoked distrust to them. Moreover, a few

women, who were willing to participate in the research explained, that their husbands forbid them to sign any document in their absence and as the husbands were not available or did not agree to be interviewed, the interview could not be held. While the use of a consent form is crucial for validity of scientific research and verbal consent forms are widely criticized, the challenges faced due to the consent form reduced the possible size of the research sample and significantly hampered the interview process.

The recruitment process proved to be a major challenge because many migrants were reticent or anxious to participate, most likely because out of fear of reliving past trauma. Numerous migrants rejected the invitation to participate in the research project; many agreed to a meeting, though did not appear; or, some even aggressively denied the participation as for instance this African interviewee exclaimed: “Why should I talk to you? In any case, you don’t help me, no one helps us”. The trauma interviewees experienced in their place of origin, during their flight and the stress and challenges faced in Germany as asylum seekers were often physically visible and mentally observable during the interviewee recruitment process and interviews. Engaging as volunteer in the migrant facilities not only was welcomed by most migrants, but the daily interaction facilitated integration, participant observation and significantly facilitated the recruitment process.

The European Commission established for all member states common standards of living conditions in accommodations for migrants, however this research confirms that standards vary significantly across German initial reception centers (Safouane, 2016) and considerable differences between the follow-up accommodations were also observed. For instance, in some initial reception facilities families of up to five members shared a single room, however in other facilities, multiple families shared huge rooms, which were separated only by bed sheets that were used as curtains. Moreover, hygiene was a major problem in different initial reception centers. The follow-up accommodations varied highly, however overall, provided more privacy and comfort for migrants.

Germany’s EASY distribution system, the IT application that allocates asylum seekers to initial reception facilities and dispatches them quantitatively across the country is certainly exemplary among European countries’ migrant administration and integration approaches. However, early observations during the fieldwork confirm that the distribution of migrants within Germany do not seem to follow common standards (Müller, 2013). For instance, some migrant housings were culturally mixed and in others, migrants from only three different nationalities were present. Moreover, according to the Asylum act § 3 (§a und §b), the asylum

seeker should move to the follow-up accommodation after six months, during or after the decision of the asylum application. This research confirms existing literature that there exist significant differences in distribution of migrants within Germany and even within Federal States and municipalities (Müller, 2013). Numerous interviewees reported to have lived in initial reception facilities for over one year and according to social workers, interpreters and migrants, it seems rather a matter of luck, where, under which conditions and for how long an asylum seeker finds shelter in Germany. Therefore, to capture a diverse and comprehensive sample of study participants, it was decisive for this research to increase the planned number of migrant housings for the interviews to be conducted to four initial reception facilities and four follow-up accommodations throughout three Federal States in Germany. As it was almost impossible to anticipate the backgrounds of the migrants in the different housings, the selected purpose sampling method was adequate for this research.

Research process and data analysis

To ensure validity, reliability and soundness of this qualitative research, different methodological strategies were applied in the different stages of this research project. In this thesis, a rich and thick description of the research procedure, analysis strategies and reporting of the findings is presented, which has the goal to transport the readers to the setting of the fieldwork and provide a solid framework for anyone interested in transferability of the research. The triangulation method, which involves using multiple data sources fosters the validity of the data analysis.

Moreover, the relatively flexible research approach, including semi-structured interviews based on purpose sampling and participant observations results in a comprehensive research sample. The resulting highly heterogeneous research sample of 100 validated interviews out of 105 conducted, which proved to be comparable to the official annual BAMF report 2016, is believed to have increased validity, reliability and soundness of this qualitative research. However, given the aforementioned limitations, as well as the relatively small research sample size of 100 interviewees, this research does not claim to be representative of the overall migrant population in Germany. Overall, the thorough integration into the migrant facilities was crucial for the interviewer to build trust and increase the soundness of the research results. However, this research considers it important for future studies to even extend the duration of the data collection, in order to have sufficient time to integrate, build trust to the migrants, carefully choose qualified and adequate interpreters and understand the

different dynamics in each migrant facility. Future research may consider member checking as a further strategy to ensure validity of the findings, which may imply to conduct a follow-up interview with interviewees. This approach was not applied to this research, due to the limited number of interviewers and time constraints. Moreover, this research suggests including at least two interviewers - preferably male and female – to conduct the interviews. This research recognizes its one-sided focus, as it solely includes migrants that already moved to Germany. Why some people stay in one place whereas others choose to leave is a crucial question to understanding the decision to migrate amid a complex environmental and social context and should be considered in future studies to increase reliability and soundness of the collected data.

The accuracy of the research project was enhanced by the Ph.D. qualification exam on November 22, 2016**,** the university internal preliminary Ph.D. defense on November 28, 2018, multiple peer briefings and reviews over the course of research process by experienced advisors and co-authors.

Appendix 3: Interview date, place, time and language

Interviewee *	Language of interview	Date and time of interview	German federal state**	Location of interview**
INTWE 001	Dari Persian	29/12/16 11:00	Hesse	Initial reception facility
INTWE 002	Persian	29/12/16 13:00	Hesse	Initial reception facility
INTWE 003	Arabic	30/12/16 11:30	Hesse	Initial reception facility
INTWE 004	German	01/01/17 16:00	Hesse	Initial reception facility
INTWE 005	Arabic	03/01/17 15:00	Hesse	Initial reception facility
INTWE 006	Tigrinya	04/01/17 10:00	Hesse	Initial reception facility
INTWE 007	Tigrinya	04/01/17 11:00	Hesse	Initial reception facility
INTWE 008	Kurdish	05/01/17 16:56	Hesse	Initial reception facility
INTWE 009	Kurdish	06/01/17 10:30	Hesse	Initial reception facility
INTWE 010	Arabic	06/01/17 11:30	Hesse	Initial reception facility
INTWE 011	English	09/01/17 10:30	Hesse	Initial reception facility
INTWE 012	Kurdish	10/01/17 14:30	Hesse	Initial reception facility
INTWE 013	Kurdish	10/01/17 18:00	Hesse	Initial reception facility
INTWE 014	Arabic	11/01/17 15:00	Hesse	Initial reception facility
INTWE 015	Somali	11/01/17 16:00	Hesse	Initial reception facility
INTWE 016	Kurdish	20/01/17 11:00	Hesse	Initial reception facility
INTWE 017	Dari Persian	20/01/17 14:30	Hesse	Initial reception facility
INTWE 018	English	21/01/17 11:30	Hesse	Initial reception facility
INTWE 019	English	21/01/17 13:00	Hesse	Initial reception facility
INTWE 020	Somali	23/01/17 11:00	Hesse	Initial reception facility
INTWE 021	Kurdish	24/01/17 16:00	Hesse	Initial reception facility

INTWE 022	Arabic	26/01/17 15:00	Hesse	Initial reception facility
INTWE 023	Arabic	31/01/17 12:30	Hesse	Initial reception facility
INTWE 024	Arabic	31/01/17 13:00	Hesse	Initial reception facility
INTWE 025	Urdu	31/01/17 14:30	Hesse	Initial reception facility
INTWE 026	English	01/02/17 13:15	Hesse	Follow-up accommodation
INTWE 027	Arabic	01/02/17 14:00	Hesse	Follow-up accommodation
INTWE 028	Arabic	01/02/17 14:30	Hesse	Follow-up accommodation
INTWE 029	German	02/02/17 13:00	Hesse	Coffee shop
INTWE 030	Dari Persian	02/02/17 14:00	Hesse	Initial reception facility
INTWE 031	German	02/02/17 16:30	Hesse	Initial reception facility
INTWE 032	English	03/02/17 10:30	Hesse	Initial reception facility
INTWE 033	Arabic	07/03/17 13:00	Berlin	Initial reception facility
INTWE 034	Arabic	07/03/17 14:00	Berlin	Initial reception facility
INTWE 035	Arabic	07/03/17 14:45	Berlin	Initial reception facility
INTWE 036	English	07/03/17 15:30	Berlin	Initial reception facility
INTWE 037	Arabic	07/03/17 16:00	Berlin	Initial reception facility
INTWE 038	Arabic	08/03/17 12:00	Berlin	Initial reception facility
INTWE 039	Arabic	08/03/17 12:30	Berlin	Initial reception facility
INTWE 040	Arabic	08/03/17 13:00	Berlin	Initial reception facility
INTWE 041	Arabic	08/03/17 14:30	Berlin	Initial reception facility
INTWE 042	Arabic	08/03/17 15:00	Berlin	Initial reception facility
INTWE 043	German	10/03/17 10:00	Brandenburg	Follow-up accommodation
INTWE 044	Arabic	10/03/17 11:30	Brandenburg	Follow-up accommodation
INTWE 045	Arabic	10/03/17 12:00	Brandenburg	Follow-up accommodation
INTWE 046	Arabic	15/03/17	Brandenburg	Follow-up

		11:00		accommodation
INTWE 047	French	15/03/17 11:30	Brandenburg	Follow-up accommodation
INTWE 048	Arabic	15/03/17 12:00	Brandenburg	Follow-up accommodation
INTWE 049	Arabic	15/03/17 16:00	Brandenburg	Follow-up accommodation
INTWE 050	English	15/03/17 17:00	Brandenburg	Follow-up accommodation
INTWE 051	French	16/03/17 13:00	Brandenburg	Follow-up accommodation
INTWE 052	Arabic	16/03/17 16:30	Brandenburg	Follow-up accommodation
INTWE 053	English	17/03/17 12:30	Brandenburg	Follow-up accommodation
INTWE 054	Persian	17/03/17 13:30	Brandenburg	Follow-up accommodation
INTWE 055	Persian	17/03/17 14:30	Brandenburg	Follow-up accommodation
INTWE 056	Persian	17/03/17 15:00	Brandenburg	Follow-up accommodation
INTWE 057	English	17/03/17 16:00	Brandenburg	Follow-up accommodation
INTWE 058	Arabic	18/03/17 12:00	Berlin	Apartment
INTWE 059	Kurdish	18/03/17 14:00	Berlin	Follow-up accommodation
INTWE 060	Arabic	18/03/17 15:00	Berlin	Follow-up accommodation
INTWE 061	Arabic	18/03/17 15:30	Berlin	Follow-up accommodation
INTWE 062	Kurdish	18/03/17 17:00	Berlin	Follow-up accommodation
INTWE 063	French	18/03/17 18:00	Berlin	Follow-up accommodation
INTWE 064	English	19/03/17 12:00	Brandenburg	Follow-up accommodation
INTWE 065	English	19/03/17 13:00	Brandenburg	Follow-up accommodation
INTWE 066	English	19/03/17 13:30	Brandenburg	Follow-up accommodation
INTWE 067	Arabic	20/03/17 15:00	Brandenburg	Follow-up accommodation
INTWE 068	Arabic	20/03/17 16:00	Brandenburg	Follow-up accommodation
INTWE 069	German	21/03/17 10:00	Brandenburg	Coffee shop
INTWE 070	Arabic	21/03/17 13:00	Brandenburg	Follow-up accommodation

INTWE 071	Arabic	27/03/17 20:00	Berlin	Initial reception facility
INTWE 072	Arabic	27/03/17 20:30	Berlin	Initial reception facility
INTWE 073	Arabic	27/03/17 21:00	Berlin	Initial reception facility
INTWE 074	Arabic	27/03/17 21:30	Berlin	Initial reception facility
INTWE 075	Arabic	27/03/17 22:00	Berlin	Initial reception facility
INTWE 076	English	28/03/17 14:30	Brandenburg	Follow-up accommodation
INTWE 077	Arabic	28/03/17 19:30	Berlin	Initial reception facility
INTWE 078	Arabic	28/03/17 20:15	Berlin	Initial reception facility
INTWE 079	Arabic	28/03/17 20:45	Berlin	Initial reception facility
INTWE 080	English	28/03/17 21:45	Berlin	Initial reception facility
INTWE 081	Persian	29/03/17 14:00	Brandenburg	Follow-up accommodation
INTWE 082	Persian	30/03/17 14:00	Brandenburg	Follow-up accommodation
INTWE 083	Persian	30/03/17 15:30	Brandenburg	Follow-up accommodation
INTWE 084	English	01/04/17 16:00	Hesse	Entrance of initial reception facility
INTWE 085	German	01/04/17 16:30	Hesse	Entrance of initial reception facility
INTWE 086	Turkish	01/04/17 17:00	Hesse	Entrance of initial reception facility
INTWE 087	English	04/04/17 15:00	Hesse	Entrance of initial reception facility
INTWE 088	English	04/04/17 17:00	Hesse	Entrance of initial reception facility
INTWE 089	Somali	05/04/17 16:00	Hesse	Entrance of initial reception facility
INTWE 090	Somali	05/04/17 17:00	Hesse	Entrance of initial reception facility
INTWE 091	Somali	05/04/17 17:30	Hesse	Entrance of initial reception facility
INTWE 092	English	08/04/17 15:00	Hesse	Entrance of initial reception facility
INTWE 093	English	08/04/17 16:30	Hesse	Entrance of initial reception facility
INTWE 094	English	08/04/17 17:30	Hesse	Entrance of initial reception facility
INTWE 095	English	08/04/17	Hesse	Entrance of initial

		18:30		reception facility
INTWE 096	Kurdish	10/04/17 10:30	Hesse	Initial reception facility
INTWE 097	Kurdish	10/04/17 11:30	Hesse	Initial reception facility
INTWE 098	Kurdish	12/04/17 11:30	Hesse	Initial reception facility
INTWE 099	Tigrinya	12/04/17 13:30	Hesse	Initial reception facility
INTWE 100	Tigrinya	12/04/17 14:00	Hesse	Initial reception facility

* To preserve the anonymity of the study participants, the names of interviewees are not disclosed.
** To preserve the anonymity of the interviewees, exact locations of interviews are not disclosed.

Appendix 4: Consent form for study participants

Consent form for Interviews and the analysis of interview data

Research Project: Ph.D. concerning migration, climate change and conflict in the Middle East and Africa. (Provisional title: The Nexus Between Climate Related Disasters, Migration and Violent Conflict)

Institution: Centro de Desenvolvimento Sustentável (CDS) / Universidade de Brasília (UnB), Brazil

Project manager/Interviewer: Christina Kohler (Tutor: Marcel Bursztyn)

Interview date:

Description of the research project and consent was done with:

☐ oral explanation

☐ written explanation

Dear interviewee,

I am a student from University of Brasilia (UnB) in Brazil. I would like to ask you, if you would like to participate in my study. With this introductory explanation, I will give you all information, so that you can decide if you want to participate in the study. You can always ask questions about any aspect of this research, like the reasons, goals, risks and advantages. This document is a consent form for an interview and the participation in the research project.

Goal of this Interview and my study: I would like to learn more about your country and about the reasons why you had to leave your country. This should help for a better integration for refugees in Europe in the future. This conversation will last about 30 minutes.

Risks and advantages to participate in this study: It could happen, that I ask you difficult and uncomfortable questions. Also, in exceptional occasions, such as I lose my bag, it could happen, that your data may accidentally fall in the hands of other people. With your participation and statements, you can contribute that people in Europe will understand and know more about migrants/refugees and their countries. They will understand more about the reasons why migrants/refugees come to Europe. I would like to learn from you and hence improve the integration of migrants/ refugees in Europe. Unfortunately, I cannot offer you any compensation for your participation in this study.

Confidentiality/Data privacy: Your information and the confidentiality of your data is very important to me. I will write down your information only in handwriting. Only I have your data and will not give it to others. I will not use your name in the study, only if you ask me to do so. At no time will your identity be revealed. I, herewith assure, that for the analysis of the data, all information that may lead to the identification of your person will be changed or deleted. The data you give me, will in parts, probably be used as the basis for articles or presentations in the future. I won't use your name or information that would identify you in any publications or presentations.

The participation in this research and interview is voluntary. At any time, you can interrupt the interview or cancel it to a later point of time (before the analysis). You can also contact me at any time concerning the study.

Agree to participate in the research project and the interview.

☐yes ☐no

_____

(Interviewee) first name; name

_____

Place, date, signature

_____

(Interviewer) Place, date, signature

Contact
Christina Kohler
christinakohler@gmx.net
Tel: +49 (0) 1577436 1824
Tel: +55 61 9823 10847

Formulaire de consentement pour Interview, collecte e traitement des données

Projet de recherche : Thèse de doctorat sur migration, changement climatique e conflit dans le Moyen-Orient et Afrique (Titre provisoire : The Nexus Between Climate Related Desasters, Migration and Violent Conflict)

Institution : Centro de Desenvolvimento Sustentável (CDS) / Universidade de Brasília (UnB), Brésil

Chef de Projet/enquêtrice : Christina Kohler (Tuteur : Marcel Bursztyn)

Date du Interview :

Description du projet de recherche de façon :

☐ oral

☐ par écrit

Cher Interviewée,

Je suis étudiante à l'université de Brasilia (UnB), en Brésil. Je voudrais te demander si tu voudrais participer dans mon projet de recherche. Avec cette description e divertissement j'aimerai te donner tous les informations nécessaires pour te décider. Tu peux toujours demander les raison, objectifs, risque et les bénéfices de participé. Ce document est un formulaire de consentement.

L'objectif de recherche : J'aimerai bien apprendre plus sur ton pays d'origine e comprendre pourquoi tu devais fuir jusqu'ici. Mon travail e ton histoire devrai contribuer à une meilleure intégration pour les réfugiés en Europe dans le futur. L'interview a une durée de 30 minutes.

Risques e bénéfices de ta participation : È possible que je te pose des questions difficiles e désagréables. Lors de l'entrevue, que le fait de parler de ton expérience t'amène à vivre une situation difficile. Deuxièmement, dans le cas exceptionnel, si par exemple je perte mon ordinateur, tes informations seront perdues e quelqu'un les voit. Avec ta participation, tu peux contribuer que les personnes en Europe apprenne plus sur ton pays e comprenne mieux pourquoi tu es réfugiée en Europe. J'aimerai bien

apprendre de ton histoire e aider à une meilleure intégration des refugiée en Europe. Malheureusement je ne peux pas rémunérer ta participation.

Protection des données/ confidentialité: La protection de tes données est très importante pour moi. Tes informations restent seulement avec moi e je ne vais pas les passer à tiers. Ton nom ne va pas être mentionné dans la recherche. Je m'oblige de ne pas utiliser des informations que pourrai t'identifier, je vais les modifier ou éliminer. Tous les renseignements recueillis au cours du projet de recherche demeureront strictement confidentiels. Afin de préserver ton identité et la confidentialité de ces renseignements, tu ne seras identifié(e) dans la recherche. Les données du projet de recherche pourront être publiées dans des revues scientifiques ou partagées avec d'autres personnes lors de discussions scientifiques. Aucune publication ou communication scientifique ne renfermera d'information permettant de t'identifier.

Il est entendu que ta participation à ce projet de recherche est tout à fait volontaire et que tu reste libre, à tout moment, de mettre fin à ta participation sans avoir à motiver ta décision ni à subir de préjudice de quelque nature que ce soit. Il vous sera toujours possible de revenir sur votre décision (avant l'analyse des informations). Maintenant ou après l'interview, n'hésitez pas à poser des questions.

D'accord de participer dans une interview du projet au-dessus expliqué.

☐oui ☐non

_____

(Personne interviewée) Prenom; Nom

_____

Lieu, date, signature

_____

(enquêtrice) Lieu, date, signature

Contact :
Christina Kohler
christinakohler@gmx.net
Tel: +49 (0) 1577436 1824

Einwilligungserklärung zur Erhebung und Verarbeitung personenbezogener InterviewdatenForschungsprojekt: Doktorarbeit bezüglich Migration, Klimafolgenforschung und Konflikte im Nahen Osten und Afrika (Vorläufiger Titel: The Nexus Between Climate Related Desasters, Migration and Violent Conflict)

Durchführende Institution: Centro de Desenvolvimento Sustentável (CDS) / Universidade de Brasília (UnB), Brasilien

Projektleitung/Interviewerin: Christina Kohler (Tutor: Marcel Bursztyn)

Interviewdatum:

Beschreibung des Forschungsprojekts (zutreffendes bitte ankreuzen):

☐ mündliche Erläuterung

☐ schriftliche Erläuterung

Lieber Interviewpartner,

Ich bin Studentin an der Universität von Brasilia (UnB), in Brasilien. Ich möchte Dich fragen, ob Du an meiner Studie teilnehmen möchtest. Mit dieser einführenden Unterhaltung, möchte ich Dir alle Informationen geben, damit Du Dich entscheiden kannst, ob Du an meiner Studie teilnehmen möchtest. Du kannst mich jederzeit unterbrechen und Fragen stellen. Du kannst mich jederzeit nach den Gründen, Zielen, Risiken oder Vorteilen fragen. Dies ist eine Einwillungserklärung.

Das Ziel meiner Studie

Ich möchte mehr über Dein Land erfahren und verstehen, weshalb Du aus Deinem Land fliehen musstest. Dies soll, in der Zukunft, zu einer besseren Integration für Flüchtlinge in Europa führen. Diese Unterhaltung (Interview) dauert etwa 30 Minuten.

Risiken und Vorteile in dieser Studie teilzunehmen

Es kann sein, dass ich Dir Fragen stelle, die unangenehm für Dich sind. Es kann auch in absoluten Ausnahmefällen dazu kommen, dass die Informationen, die Du mir anvertraust in die Hände dritter gelangen. Du kannst mit Deinen Aussagen dazu beitragen, dass die Menschen in Europa mehr über Dein Land erfahren und besser verstehen weshalb Du und andere Flüchtlinge in Europa sind. Ich hoffe von Dir zu lernen und somit zu helfen die Integration und Aufnahme von Flüchtlingen in Europa zu verbessern. Leider kann ich Dir keine Bezahlung hierfür anbieten.

Datenschutz

Deine Informationen und der Datenschutz sind mir sehr wichtig. Ich werde Deine Informationen handschriftlich mitschreiben. Zu Deinen Daten habe nur ich Einsicht. Ich werde Deinen Namen in der Studie nicht erwähnen, es sei denn, Du bittest mich ausdrücklich darum. Ich verpflichte mich für weitere wissenschaftliche Auswertungen, alle Angaben, die zu der Identifizierung deiner Person führen könnten, zu verändert oder aus dem Text zu entfernt. In wissenschaftlichen Veröffentlichungen wird unsere Unterhaltung nur in Ausschnitten zitiert, um gegenüber Dritten sicherzustellen, dass der entstehende Gesamtzusammenhang von Ereignissen nicht zu einer Identifizierung deiner Person führen kann.

Die Teilnahme an dieser Unterhaltung (Interview) ist freiwillig. Du hast jederzeit die Möglichkeit das Interview abzubrechen, oder es zu einem späteren Zeitpunkt (vor der Auswertung) zu annullieren. Du

kannst mich jederzeit bezüglich der Studie kontaktieren.

Einverstanden, im Rahmen des genannten Forschungsprojekts an einem Interview teilzunehmen.

☐ja ☐nein

_____

(Interviewpartner) Vorname; Nachname in Druckschrift

_____

Ort, Datum, Unterschrift

_____

(Projektleiter) Ort, Datum, Unterschrift

Kontakt

Christina Kohler

christinakohler@gmx.net

Tel: +49 (0) 1577436 1824

Tel: +55 61 9823 10847

Appendix 5: Consent form for interpreters

Einwilligungserklärung für Übersetzer für die Mitarbeit bei der Erhebung personenbezogener Interviewdaten

Forschungsprojekt: Doktorarbeit bezüglich Migration, Klimafolgenforschung und Konflikte im Nahen Osten und Afrika (Vorläufiger Titel: The Nexus Between Climate Related Desasters, Migration and Violent Conflict)

Durchführende Institution: Centro de Desenvolvimento Sustentável (CDS) / Universidade de Brasília (UnB), Brasilien

Projektleitung/Interviewerin: Christina Kohler (Tutor: Marcel Bursztyn)

Datum der Einwilligungserklärung:

Beschreibung des Forschungsprojekts (zutreffendes bitte ankreuzen):

☐ mündliche Erläuterung

☐ schriftliche Erläuterung

Lieber Übersetzer,

Ich bin Studentin an der Universität von Brasilia, in Brasilien. Ich möchte Sie fragen, ob Sie an meiner Studie, als Übersetzer, teilnehmen möchten. Mit dieser einführenden Unterhaltung, möchte ich Ihnen alle Informationen geben, damit Sie entscheiden können, ob Sie als Übersetzer an diesem Projekt teilnehmen möchten. Sie können mich jederzeit unterbrechen und Fragen stellen. Sie können mich jederzeit nach den Gründen, Zielen, Risiken oder Vorteilen fragen. Dies ist eine Einwillungserklärung.

Das Ziel meiner Studie

Ich möchte mehr über Die Länder der Flüchtlinge in Europa erfahren und verstehen, weshalb Sie aus Ihrem Land fliehen mussten. Dies soll, in der Zukunft, zu einer besseren Integration für Flüchtlinge in Europa führen. Die Interviews dauern etwa 30 Minuten.

Risiken und Vorteile in dieser Studie teilzunehmen

Es kann sein, dass ich Den Flüchtlingen unangenehme Fragen stellen muss, die sie emotional belasten. Sie können mit Ihrer Mitarbeit dazu beitragen, dass die Menschen in Europa mehr über die Länder der Flüchtlinge erfahren und besser verstehen weshalb sie flüchten mussten. Ich hoffe in diesen Interviews, mit Ihrer Hilfe, viel zu lernen und somit zu helfen die Integration und Aufnahme von Flüchtlingen in Europa zu verbessern.

Datenschutz

Die Informationen und der Datenschutz der Flüchtlinge ist mir sehr wichtig. Es ist wesentlich, dass keine Informationen aus diesen Interviews an Dritte gelangen. Nur Ich habe Einsicht in die Daten. Ich werde Ihren Namen in der Studie nicht erwähnen, es sei denn, Sie bitten mich ausdrücklich darum.

Sie verpflichten sich mit dieser Einwillungserklärung alle Informationen rechtens zu übersetzen und alle Informationen die in dem Interview besprochen werden, nicht an dritte weiterzugeben. Selbstverständlich können Sie mich jederzeit bezüglich der Studie kontaktieren.

Einverstanden, im Rahmen des genannten Forschungsprojekts als Übersetzer teilzunehmen.

☐ja ☐nein

_____

(Übersetzer) Vorname; Nachname in Druckschrift

_____

Ort, Datum, Unterschrift

_____

(Projektleiter) Ort, Datum, Unterschrift

Kontakt
Christina Kohler
christinakohler@gmx.net
Tel: +49 (0) 1577436 1824
Tel: +55 61 9823 10847

Appendix 6: Interview guide

General information about the interviewee and his life in his/her place of origin

Where are you from?
Tell me about your city or village.
With whom did you live?
Did you live in a house or apartment?
How many children do you have? Are you married?
Were you satisfied with your life and job?
What was your main activity? Did you have other jobs? Did you change jobs frequently? Was it difficult to find a new job?
When did you move for the first time and where to?

Reasons for leaving his/her country of origin

Do you remember the day when you decided to leave your home? What happened that day? What changed and made you want to leave your home?
When did these changes start?
Can you tell me the main reason that made your life intolerable and motivated you to leave?
Did you perceive any changes in the weather or climate patterns over the last 10 years?
Did you perceive a resource shortage over the last 10 years? Water, electricity or other?
Did you perceive an increase in resource prices? Were there peaks of e.g. food prices over the last 10 years?
Did you perceive tensions, protest or violence around you or against you?
Did you perceive an inflow/outflow of migrants and/or refugees? How did this affect you and your family? If so, when?

Information about the destination

Where were you planning to go to?
Is there a special reason for your choice of country?
Did you move alone?
Do you have family in the country you moved to?

Views of the interviewee

Do you believe the situation in your home country will improve? How, why or why not?
Who do you think is responsible for the situation in your country?
If the situation improves, do you want to go back?
Do you have questions? Anything you would like to add?

Appendix 7: Impact of climatic events on interviewees in their place of origin (detailed)

	Affected by climatic events	No perceived climatic events	Perceived climatic events
Total interviews	15	44	41
Iran (Islamic Republic of)	0	0	5
Syrian Arab Republic	10	10	14
Turkey	0	3	1
Iraq	0	6	6
Yemen	0	2	0
Sudan	0	0	1
Jordan	0	1	0
Egypt	0	2	0
Total (Middle East)	10	25	26
Afghanistan	0	7	4
Pakistan	0	1	2
Total (Southern Asia)	0	8	6
Ethiopia	1	1	1
Somalia	1	2	2
Eritrea	1	4	1
Kenya	2	0	3
Total (Eastern Africa)	5	7	7
Cameroon	0	3	0
Chad	0	1	0
Total (Middle Africa)	0	4	0
Russian Federation	0	1	0
Total (Eastern Europe)	0	1	0
Stateless	0	0	1
Total Stateless	0	0	1

Appendix 8: Drivers and sub-drivers of international migration

		Violence, armed conflict* and non-state conflict**		
		Extreme violence, deteriorated economy, infrastructure, health-and education system	Violence, occupation and persecution by formally organized groups***	Forced military service
INTWE	**Origin**			
1	Afghanistan		x'	
2	Iran (Islamic Republic of)			
3	Syrian Arab Republic	x'	x	
4	Iran (Islamic Republic of)			
5	Syrian Arab Republic			x'
6	Eritrea			
7	Eritrea			x'
8	Turkey	x	x'	
9	Iraq			
10	Syrian Arab Republic	x	x	x'
11	Ethiopia			
12	Syrian Arab Republic	x'		
13	Syrian Arab Republic		x'	x
14	Syrian Arab Republic	x'	x	
15	Yemen			
16	Iraq			
17	Afghanistan		x'	
18	Somalia		x'	
19	Pakistan			
20	Ethiopia		x'	
21	Iraq	x		
22	Syrian Arab Republic			x'
23	Stateless			
24	Syrian Arab Republic	x		x'
25	Pakistan			
26	Iraq	x	x'	
27	Iraq		x'	
28	Iraq	x'	x	
29	Syrian Arab Republic	x'		
30	Afghanistan		x'	
31	Russian Federation			
32	Syrian Arab Republic		x'	
33	Syrian Arab Republic	x'	x	
34	Iraq			
35	Syrian Arab Republic	x'		

36	Afghanistan		x'		
37	Syrian Arab Republic	x	x		
38	Syrian Arab Republic	x'			
39	Iraq	x'			
40	Jordan				
41	Syrian Arab Republic		x'		
42	Syrian Arab Republic	x'	x		
43	Afghanistan				
44	Syrian Arab Republic	x'	x		
45	Syrian Arab Republic	x'	x		
46	Afghanistan		x'		
47	Cameroon				
48	Syrian Arab Republic	x'			
49	Syrian Arab Republic	x		x'	
50	Cameroon				
51	Chad				
52	Syrian Arab Republic	x'	x		
53	Cameroon				
54	Iran (Islamic Republic of)				
55	Afghanistan				
56	Iran (Islamic Republic of)				
57	Kenya		x		
58	Syrian Arab Republic	x'			
59	Syrian Arab Republic	x		x'	
60	Iraq		x'		
61	Syrian Arab Republic	x'			
62	Syrian Arab Republic	x	x	x'	
63	Syrian Arab Republic	x			
64	Kenya		x'		
65	Kenya				
66	Kenya				
67	Syrian Arab Republic	x	x	x'	
68	Syrian Arab Republic	x		x'	
69	Somalia		x'		
70	Sudan				
71	Egypt				
72	Egypt				
73	Syrian Arab Republic	x	x	x'	
74	Iraq				
75	Iraq				
76	Kenya				
77	Syrian Arab Republic	x'		x	
78	Syrian Arab Republic			x'	
79	Syrian Arab Republic	x'			
80	Afghanistan		x'		
81	Afghanistan				
82	Iran (Islamic Republic of)				

83	Afghanistan		x'	
84	Iraq	x	x'	
85	Turkey			x'
86	Turkey	x		
87	Somalia		x'	
88	Ethiopia			
89	Yemen			
90	Somalia		x'	x
91	Somalia		x	
92	Eritrea			
93	Pakistan		x'	
94	Afghanistan			
95	Eritrea			x'
96	Syrian Arab Republic			x'
97	Syrian Arab Republic	x'		
98	Turkey	x		
99	Eritrea			x
100	Eritrea			
TOTAL		35	37	19
Main driver (x')		19	22	15

*As of the Uppsala Conflict Data Program (UCDP), armed conflict is a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths in one calendar year.
**As of the UCDP, non-state conflict implies the use of armed force between two organized armed groups, neither of which is the government of a state, which results in at least 25 battle-related deaths in a year.
***As of the UCDP, a formally organized group is any non-governmental group of people having announced a name for their group and using armed force.

		Religious, ethnic and family issues		
		Religious and ethnic marginalization, discrimination, violence and persecution	Repressive ethnic and cultural norms and traditions	Family issues, persecution and reunification
INTWE	**Origin**			
1	Afghanistan			
2	Iran (Islamic Republic of)	x'		
3	Syrian Arab Republic			
4	Iran (Islamic Republic of)			
5	Syrian Arab Republic	x		
6	Eritrea			

7	Eritrea						
8	Turkey						
9	Iraq					x'	
10	Syrian Arab Republic						
11	Ethiopia						
12	Syrian Arab Republic						
13	Syrian Arab Republic	x					
14	Syrian Arab Republic						
15	Yemen	x'					
16	Iraq	x				x'	
17	Afghanistan	x					
18	Somalia						
19	Pakistan	x'					
20	Ethiopia	x					
21	Iraq	x				x'	
22	Syrian Arab Republic					x	
23	Stateless						
24	Syrian Arab Republic						
25	Pakistan	x'				x	
26	Iraq						
27	Iraq						
28	Iraq						
29	Syrian Arab Republic	x					
30	Afghanistan						
31	Russian Federation	x					
32	Syrian Arab Republic						
33	Syrian Arab Republic						
34	Iraq			x			
35	Syrian Arab Republic						
36	Afghanistan						
37	Syrian Arab Republic						
38	Syrian Arab Republic						
39	Iraq						
40	Jordan	x				x'	
41	Syrian Arab Republic						
42	Syrian Arab Republic						
43	Afghanistan					x'	
44	Syrian Arab Republic						
45	Syrian Arab Republic						
46	Afghanistan						
47	Cameroon					x'	
48	Syrian Arab Republic						
49	Syrian Arab Republic						
50	Cameroon					x	
51	Chad						
52	Syrian Arab Republic						
53	Cameroon	x				x'	
54	Iran (Islamic Republic of)						
55	Afghanistan			x'			

56	Iran (Islamic Republic of)	x			
57	Kenya	x			x'
58	Syrian Arab Republic				
59	Syrian Arab Republic				
60	Iraq				x
61	Syrian Arab Republic				
62	Syrian Arab Republic				
63	Syrian Arab Republic				
64	Kenya				x
65	Kenya			x'	
66	Kenya				x'
67	Syrian Arab Republic				
68	Syrian Arab Republic				
69	Somalia				
70	Sudan				
71	Egypt				
72	Egypt				
73	Syrian Arab Republic				
74	Iraq	x'			
75	Iraq	x'			
76	Kenya				x
77	Syrian Arab Republic				
78	Syrian Arab Republic				
79	Syrian Arab Republic				
80	Afghanistan				x
81	Afghanistan	x'			
82	Iran (Islamic Republic of)	x'			
83	Afghanistan				
84	Iraq	x			
85	Turkey	x			
86	Turkey	x'			
87	Somalia	x			
88	Ethiopia				
89	Yemen	x'			
90	Somalia				
91	Somalia	x'			x
92	Eritrea				
93	Pakistan				
94	Afghanistan				x
95	Eritrea				x'
96	Syrian Arab Republic	x			
97	Syrian Arab Republic				
98	Turkey	x'			
99	Eritrea				
100	Eritrea	x			
TOTAL		29		3	18
Main driver (x')		12		2	10

		Political, institutional and social issues		
		Political and social oppression and lack of freedom and safety	Persecuted or convicted by local justice system	To seek better education in the country of destination
INTWE	**Origin**			
1	Afghanistan			
2	Iran (Islamic Republic of)	x		
3	Syrian Arab Republic			
4	Iran (Islamic Republic of)	x'	x	
5	Syrian Arab Republic			
6	Eritrea	x'		
7	Eritrea	x		
8	Turkey			
9	Iraq			
10	Syrian Arab Republic			
11	Ethiopia		x'	
12	Syrian Arab Republic			
13	Syrian Arab Republic			
14	Syrian Arab Republic			
15	Yemen			
16	Iraq			
17	Afghanistan			
18	Somalia			
19	Pakistan			
20	Ethiopia			
21	Iraq			
22	Syrian Arab Republic			
23	Stateless	x	x'	
24	Syrian Arab Republic			
25	Pakistan			
26	Iraq			
27	Iraq			
28	Iraq			
29	Syrian Arab Republic	x		
30	Afghanistan			
31	Russian Federation		x'	
32	Syrian Arab Republic			
33	Syrian Arab Republic			
34	Iraq	x'		
35	Syrian Arab Republic			
36	Afghanistan			
37	Syrian Arab Republic			x'
38	Syrian Arab Republic			

	39	Iraq						
	40	Jordan						
	41	Syrian Arab Republic						
	42	Syrian Arab Republic						
	43	Afghanistan						
	44	Syrian Arab Republic						
	45	Syrian Arab Republic						
	46	Afghanistan						
	47	Cameroon						
	48	Syrian Arab Republic						
	49	Syrian Arab Republic						
	50	Cameroon						
	51	Chad						
	52	Syrian Arab Republic						
	53	Cameroon						
	54	Iran (Islamic Republic of)	x'					
	55	Afghanistan						
	56	Iran (Islamic Republic of)	x'					
	57	Kenya						
	58	Syrian Arab Republic						
	59	Syrian Arab Republic						
	60	Iraq						
	61	Syrian Arab Republic						
	62	Syrian Arab Republic						
	63	Syrian Arab Republic	x'					
	64	Kenya						
	65	Kenya						
	66	Kenya			x			
	67	Syrian Arab Republic						
	68	Syrian Arab Republic						
	69	Somalia						
	70	Sudan						
	71	Egypt						
	72	Egypt			x'			
	73	Syrian Arab Republic						
	74	Iraq						
	75	Iraq						
	76	Kenya					x	
	77	Syrian Arab Republic						
	78	Syrian Arab Republic						
	79	Syrian Arab Republic						
	80	Afghanistan	x					
	81	Afghanistan						
	82	Iran (Islamic Republic of)	x					
	83	Afghanistan						
	84	Iraq						
	85	Turkey						

86	Turkey						
87	Somalia						
88	Ethiopia				x'		
89	Yemen						
90	Somalia						
91	Somalia						
92	Eritrea		x'				x
93	Pakistan		x				
94	Afghanistan						
95	Eritrea		x				x
96	Syrian Arab Republic						
97	Syrian Arab Republic						
98	Turkey						
99	Eritrea		x'				
100	Eritrea		x'				
TOTAL			17		7		4
Main driver (x')		9		5		1	

		Economic issues	
		Unemployment and lack of economic opportunities	Poverty
INTWE	**Origin**		
1	Afghanistan		
2	Iran (Islamic Republic of)		
3	Syrian Arab Republic		
4	Iran (Islamic Republic of)		
5	Syrian Arab Republic		
6	Eritrea		
7	Eritrea		
8	Turkey		
9	Iraq		
10	Syrian Arab Republic		
11	Ethiopia		
12	Syrian Arab Republic		
13	Syrian Arab Republic		
14	Syrian Arab Republic		
15	Yemen		
16	Iraq		
17	Afghanistan		
18	Somalia		
19	Pakistan		
20	Ethiopia		
21	Iraq		
22	Syrian Arab Republic		

	23	Stateless		x		
	24	Syrian Arab Republic				
	25	Pakistan				
	26	Iraq				
	27	Iraq				
	28	Iraq				
	29	Syrian Arab Republic				
	30	Afghanistan				
	31	Russian Federation				
	32	Syrian Arab Republic				
	33	Syrian Arab Republic				
	34	Iraq				
	35	Syrian Arab Republic				
	36	Afghanistan				
	37	Syrian Arab Republic				
	38	Syrian Arab Republic				
	39	Iraq				
	40	Jordan				
	41	Syrian Arab Republic				
	42	Syrian Arab Republic				
	43	Afghanistan				
	44	Syrian Arab Republic				
	45	Syrian Arab Republic				
	46	Afghanistan				
	47	Cameroon				
	48	Syrian Arab Republic				
	49	Syrian Arab Republic				
	50	Cameroon		x'		
	51	Chad	x'			
	52	Syrian Arab Republic				
	53	Cameroon				
	54	Iran (Islamic Republic of)	x			
	55	Afghanistan				
	56	Iran (Islamic Republic of)				
	57	Kenya				
	58	Syrian Arab Republic				
	59	Syrian Arab Republic				
	60	Iraq				
	61	Syrian Arab Republic				
	62	Syrian Arab Republic				
	63	Syrian Arab Republic				
	64	Kenya				
	65	Kenya				
	66	Kenya				
	67	Syrian Arab Republic				
	68	Syrian Arab Republic				
	69	Somalia				
	70	Sudan		x'		

71	Egypt		x'		
72	Egypt				
73	Syrian Arab Republic				
74	Iraq				
75	Iraq				
76	Kenya				x'
77	Syrian Arab Republic				
78	Syrian Arab Republic				
79	Syrian Arab Republic				
80	Afghanistan				
81	Afghanistan				
82	Iran (Islamic Republic of)				
83	Afghanistan				
84	Iraq				
85	Turkey				
86	Turkey				
87	Somalia				
88	Ethiopia				
89	Yemen				
90	Somalia				
91	Somalia				
92	Eritrea				
93	Pakistan				
94	Afghanistan				
95	Eritrea				
96	Syrian Arab Republic		x		
97	Syrian Arab Republic				
98	Turkey				
99	Eritrea				
100	Eritrea				
TOTAL			4		4
Main driver (x')		2		3	

Appendix 9: Resource scarcity in interviewees' places of origin (only Syrian interviewees)

INTWE	City of origin	Drivers for international migration	Resource shortages	Water/ electricity/ both	Resource shortages (details)
3	Yarmouk camp	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Before the war, everything was good Before the war started in 2011, they sometimes had electricity shortages, but during the war, there were electricity and water shortages
5	Tartus	Violence, armed conflict and non-state conflict Religious, ethnic and family Issues	yes, after the conflict started	water	After the war started, they had problems especially with water and resources decreased strongly since 2013
10	Al-Hasakah	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Before the war started, electricity was perfect, only slowly reducing water/groundwater After the start of the war there was no electricity and much less water available
12	Al-Malikiyah	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Before the war, there were no problems with water. After the war started, there was no water and no electricity. They had to wake up at 3AM to use the little available electricity.

	13	Al-Hasakah	Violence, armed conflict and non-state conflict Religious, ethnic and family Issues	yes, after the conflict started	electricity	Before the war there were no problems with electricity After the war started, they did not have electricity anymore For 5 years they did not have electricity and had to use generators	
	14	Aleppo	Violence, armed conflict and non-state conflict	yes, after the conflict started	electricity	Before the war, there were no problems After IS invaded the village, the state strongly reduced the electricity supply. They only had electricity for 2 hours per day and they had to buy a generator	
	22	Al-Hasakah	Violence, armed conflict and non-state conflict	yes	water	There was always enough drinking water, but not enough water for agriculture. No problems with electricity	
	24	Aleppo	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Water reduced heavily. IS controlled half of the city and also controlled the water and electricity supply She knows that the other side of Aleppo was invaded by other groups, who also controlled the water supply	

	29	Tartus	Religious, ethnic and family Issues Political, institutional and social issues	yes, after the conflict started	Water	With the start of the war in 2011 government services started to deteriorate. And before, especially in 2004 there were problems with the water supply due to the drought Electricity was always ok
	32	Aleppo	Violence, armed conflict and non-state conflict	yes, after the conflict started	electricity	Only little problems before war After the war started, there was no electricity available IS invaded their city But they did not have problems with water, because there was a river very close to their home
	33	Al Yarmouk Camp	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Water and electricity were normal and ok before the war Since the Free Syrian Army took over Jarmuk, they only had 2h electricity per day. And the water was extremely dirty and polluted.
	35	Aleppo	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	After the war started, they did not have electricity at all They pumped water with a generator from the groundwater

	37	Idlib	Violence, armed conflict and non-state conflict Political, institutional and social issues	yes, after the conflict started	both	Before the war, there was water available, sometimes shortages of maximum 2-3h. They also used groundwater. After the war, it all changed Those who had the money bought a generator for electricity	
	38	Homs	Violence, armed conflict and non-state conflict	no	no		
	41	Aleppo	Violence, armed conflict and non-state conflict Religious, ethnic and family Issues	yes, after the conflict started	both	Before IS came into the city, there were no problems After IS entered, there was no electricity, water or telephones anymore	
	42	Al-Hasakah	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Before the war, there were no problems with electricity and the water supply was also ok. After the war started, there was suddenly no water and electricity available. They had only 1h electricity per day. The state told them, that the factory was bombed and therefore there is no electricity.	
	44	Tell Abyad	Violence, armed conflict and non-state conflict	no	no	No problems with water, because the city has two rivers (Al-Belir und Al Jalab)	

	45	Sarmin	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	yes, since the war started
	48	Golan	Violence, armed conflict and non-state conflict	no	no	
	49	Lattakia	Violence, armed conflict and non-state conflict	yes, after the conflict started	electricity	Water was rarely a problem, because they have lots of groundwater But after the war started, there was no electricity and water anymore
	52	Deir Hassan	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	After the war started, electricity and water supply were very rare
	58	Qamishli	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Only little water available since the war started and only 1hour electricity per day
	59	Al-Malikiyah	Violence, armed conflict and non-state conflict	no	no	In Damascus water and electricity was available.
	61	Damascus	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Before the war started, the water supply was normal, however they always had little problems. But after the war started, there was especially no electricity anymore

	62	Ein Al Fejeh	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Before the conflict, water was only a problem for farmers, because in the village there were 2 wells. After the war started, there was no water anymore, since they did not have electricity and hence could not pull up the water from the well. After war started there were also great problems with electricity
	63	Damascus	Violence, armed conflict and non-state conflict Political, institutional and social issues	yes	electricity	Only 2 hours of electricity per day. Therefore, they had a generator. The river was nearly dead, though, lots of groundwater. Hence there was water.
	67	Homs	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	There were no problems with the water supply before the war. After the war started, there was no water at all. There was no water during the war, because it was under the rule of Assad. No problems with the electricity supply before the war, but after, there were only 3 hours of electricity per day and in the winters maybe 6 hours per day.

	68	Qamishli	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	In Al Khamishly they had a well, but lots of people suffered, because they did not have water. Since 2011 they had huge problems. No heating oil was available and no electricity during war. The diesel to use pull up water from the well was also missing.	
	73	Damascus	Violence, armed conflict and non-state conflict	no	no	No problems with the water supply, also during war Electricity supply was ok	
	77	Homs	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Before the war started, they sometimes had water shortages. But rarely had problems with electricity cuts. After the war started there were problems with the electricity supply. People started using the groundwater. Before the war started, water and electricity were administered by the state, but now, no one knows	
	78	As-Safira	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Since the war started, there is no water available and people in his village use the water of the river. They have 2/3 hours of electricity per day.	

79	Darayya	Violence, armed conflict and non-state conflict	yes, after the conflict started	electricity	Before the war there was always water and electricity. After the war started, they had 1 or maximum 2 hours of electricity per day.
96	Damascus	Violence, armed conflict and non-state conflict Religious, ethnic and family Issues Economic issues	yes	electricity	Yes, there was water, but sometimes none for 24 hours. Electricity supply was very bad
97	Aleppo	Violence, armed conflict and non-state conflict	yes, after the conflict started	both	Before the war started there were no problems with the water supply, but after the war started, there was much less water available. Lately, before she fled, they did not drink the water from the tab, because it was polluted. Before the war started, there were electricity cuts of 1h/day, but after the war started, they only had 3h of electricity per day

0.5 References of the introduction, conclusion, appendix 1, appendix 2

Bundesamt für Migration und Flüchtlinge (BAMF) (2017). Das Bundesamt in Zahlen 2016. Asyl, Migration und Integration. Accessed 14 October 2018. Retrieved from http://www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Broschueren/bundesamt-in-zahlen-2016.html?nn=9121126

Beine, M., & Parsons, C. (2015). Climatic Factors as Determinants of International Migration. The Scandinavian Journal of Economics, 117(2), 723-767. https://doi.org/10.1111/sjoe.12098

Berlemann, M., & Steinhardt, F.S. (2017). Climate Change, Natural Disasters, and Migration—a Survey of the Empirical Evidence. *CESifo Economic Studies, 63*(4), 353-385. https://doi.org/10.1093/cesifo/ifx019

Black, R., Adger, W.N., Arnell, N., Dercon, S., Geddes. A., & Thomas, D. (2011). The Effect of Environmental Change on Human Migration. Global Environmental Change, 21(1), s3-s11. https://doi.org/10.1016/j.gloenvcha.2011.10.001

Bohra-Mishra, P., Oppenheimer, M., & Hsiang, S. (2014). Nonlinear Permanent Migration Response to Climatic Variations but Minimal Response to Disasters. *Proceedings of the National Academy of Sciences, 111*(27), 9780-9785. https://doi.org/10.1073/pnas.1317166111

Brzoska, M., & Fröhlich. C. (2015). Climate Change, Migration and Violent Conflict: Vulnerabilities, Pathways and Adaptation Strategies. Migration and Development, 5(2), 190-210. https://doi.org/10.1080/21632324.2015.1022973Buhaug et al. 2014

Burrows, K., & Kinney, P. (2016). Exploring the Climate Change, Migration and Conflict Nexus. International Journal of Environmental Research and Public Health, 13 (4), 443-17. https://doi.org/10.3390/ijerph13040443Carleton and Hsiang 2016

Cattaneo, C., & Peri, G. (2015). The Migration Response to Increasing Temperatures. Centro Euro-Mediterraneo sui Cambiamenti Climatici RP0260, 1-46.

Coniglio, N.D., & Pesce, G. (2015). Climate Variability and International Migration: An Empirical Analysis. *Environment and Development Economics, 20* (04), 434-68. https://doi.org/10.1017/S1355770X14000722

Cummings, C., Pacitto, J., Diletta, L., & Foresti, M. (2015). Why People Move: Understanding the Drivers and Trends of Migration to Europe. Overseas Development Institute (ODI), Working Paper 430.

De Châtel, F. (2014) The Role of Drought and Climate Change in the Syrian Uprising: Untangling the Triggers of the Revolution. Middle Eastern Studies, 50:4, 521-535. https://doi.org/10.1080/00263206.2013.850076.

Fankhauser, S. (2016). Adaptation to Climate Change. Centre for Climate Change Economics and Policy. Working Paper, 287, 1-38.

Geddes, A., Scholten, P. (2016). The politics of migration & immigration in Europe. 2nd edition. Retrieved from http://dx.doi.org/10.4135/9781473982703

Gleick, Peter H. 2006. Water and Terrorism. Water Policy 8(6). IWA Publishing, 481-23. http://dx.doi.org/10.2166/wp.2006.035.

Gleick, P. H. (2014). Water, Drought, Climate Change, and Conflict in Syria. Weather, Climate, and Society, 6 (3), 331-40. https://doi.org/10.1175/WCAS-D-13-00059.1

Gray, C., & Mueller, V. (2012). Droughts and population mobility in rural Ethiopia. World Development, 40(1), 134-145.

Heering, L., Van der Erf, R., & Van Wissen, L., (2004). The Role of Family Networks and Migration Culture in the Continuation of Moroccan Emigration: A Gender Perspective. Journal of Ethnic and Migration Studies, 30(2), 323–337. https://doi.org/10.1080/1369183042000200722

Hoffmann, EM., Konerding, V., Nautiyal, S., Buerkert, A. (2019) Is the push-pull paradigm useful to explain rural-urban migration? A case study in Uttarakhand, India. PLoS ONE 14(4): e0214511.

Hsiang, S. M., M Burke, M., & Miguel, E. (2013). Quantifying the Influence of Climate on Human Conflict. Science, 341(6151), 1235367-67. https://doi.org/10.1126/science.1235367

Hunter, L. M., Luna, J., K., & Norton, R., M. (2015). Environmental Dimensions of Migration. Annual Review of Sociology, 41 (1), 377-97. https://doi.org/10.1146/annurev-soc-073014-112223.Raleigh 2010

International Organization for Migration (IOM). (2008). Migration and Climate Change., No.31,1-64. Geneva, Switzerland: Brown, O.

IPCC (Intergovernmental Panel Climate Change). (2007). Working Group II: Impacts, Adaptation and Vulnerability. Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

IPCC. (2014). Working Group II: Impacts, Adaptation, and Vulnerability. Cambridge, UK: Cambridge University Press.

Kelley, C P, S Mohtadi, & M A Cane. 2015. Climatic events in the Fertile Crescent and Implications of the Recent Syrian Drought. PNAS, 112 (11), 3241-3246. doi:10.1073/pnas.1421533112.

Kharin, V.V., Zwiers, F.W., Zhang, X., & Hegerl, G.C. (2007). Changes in Temperature and Precipitation Extremes in the IPCC Ensemble of Global Coupled Model Simulations. Journal of Climate, 20(8), 1419-1444. https://doi.org/10.1175/JCLI4066.1

Marchiori, L., Maystadt, J.F., & Schumacher, I. (2012). The Impact of Weather Anomalies on Migration in Sub-Saharan Africa. Journal of Environmental Economics and Management, 63 (3), 355-74. https://doi.org/10.1016/j.jeem.2012.02.001

McLeman, R.A. (2014). Climate and Human Migration. Past Experiences, Future Challenges. Population and Development Review, 40(2). https://doi.org/10.1111/j.1728-4457.2014.00684.x

Migali, S., Natale, F., Tintori, G., Kalantaryan, S., Grubanov-Boskovic, S., Scipioni, M., Farinosi, F., Cattaneo, C., Benandi, B., Follador, M., Bidoglio, G., McMahon, S. and Barbas, T. (2018). International Migration Drivers, Publications Office of the European Union, Luxembourg. doi:10.2760/63833

Montesquieu, C. (1746). The Spirit of the Laws.

Morrissey, J. W. (2013). Understanding the Relationship Between Environmental Change and Migration: the Development of an Effects Framework Based on the Case of Northern Ethiopia. Global Environmental Change, 23(6), 1501-10. https://doi.org/10.1016/j.gloenvcha.2013.07.021

Müller, A. (2013). Die Organisation der Aufnahme und Unterbringung von Asylbewerbern in Deutschland. Fokus-Studie der deutschen nationalen Kontaktstelle für das Europäische Migrationsnetzwerk (EMN). Bundesamt für Migration und Flüchtlinge 2013. Working paper 55.

Mueller, V., Gray, C., & Kosec, K. (2014). Heat stress increases long-term human migration in rural Pakistan. Nature Climate Change, 4, 182-185.

Myers, N. (2005). Environmental Refugees: An Emerging Security Issue. 13th Economic Forum, 1-5.

Otto, I.M., Reckien, D., Reyer, C.P.O., Marcus, R., Le Masson, V., Jones, L., Norton, A., & Serdeczny, O. (2017). Social Vulnerability to Climate Change: a Review of Concepts and Evidence. Regional Environmental Change, 17 (6), 1651-62. https://doi.org/10.1007/s10113-017-1105-9

Raleigh, C., Jordan, L., & Salehyan, I. (2008). Asessing the impact of climate change on migration and conflict. Paper prepared for the social dimensions of climate change. World Bank.

Reuven, R. (2007). Climate Change-Induced Migration and Violent Conflict. Political Geography, 26 (6), 656-73. https://doi.org/10.1016/j.polgeo.2007.05.001

Rummukainen, M. (2012). Changes in climate and weather extremes in the 21st century. WIREs Clim Change 2012, 3, 115-129. https://doi.org/10.1002/wcc.160

Safouane, H. (2016). Manufacturing Striated Space for Migrants: An Ethnography of Initial Reception Centers for Asylum Seekers in Germany. Voluntas: International Journal of Voluntary and Nonprofit Organizations, 28:1922–1939. https://doi.org/10.1007/s11266-016-9813-1

Scheffran, J., Brzoska, M., Kominek, J., & Link, P.M. (2012). Climate Change and Violent Conflict. Science, 336 (6083), 869-871.

Talò, T. (2017). Public attitudes to immigration in Germany in the aftermath of the migration crisis. Migration Policy Centre 2017/23, 1–8. https://doi.org/10.2870/516256

Powell, N., Larsen, R.K., De Bruin, A., Powell, S., & Elrick-Barr, C. (2017). Water Security in Times of Climate Change and Intractability: Reconciling Conflict by Transforming Security Concerns into Equity Concerns. Water. 9(12), 934-13. https://doi.org/10.3390/w9120934

Van Hear, N. (2014). Reconsidering Migration and Class. International Migration Review, 48/3, S100-21. https://doi.org/10.1111/imre.12139

Van Hear, N., Bakewell, O., & Long, K. (2014). Drivers of Migration. Migrating out of Poverty RPC Working Paper 1. Migrating out of Poverty, 1-44. University of Sussex. Brighton, UK.

Zhang, D. D., Lee, H.F., Wang, C., & Li, B. (2011). The Causality Analysis of Climate Change and Large-Scale Human Crisis. PNAS, 108(42), 1-6. https://doi.org/10.1073/pnas.1104268108