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**When the Disaster Strikes:
(Im)mobility Decision-Making in the
Context of Environmental Shocks
and Climate Change Impacts**

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Statement

I hereby declare that this doctoral manuscript has not been and will not be, submitted in whole or in part to another University for the award of any other degree.

Signature:

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Acronyms and Abbreviations

BS	Bhola Slum
CDA	Critical Discourse Analysis
CGIAR	Consultative Group for International Agricultural Research
CPP	Cyclone Preparedness Programme
CSS	Collective Storytelling Session
DA	Discourse Analysis
DL	Dalbanga South
DOS	Disk Operating System
EU	European Union
F	Female
FGD	Focus Group Discussion
FMR	Forced Migration Review
GB	Gabtola
ICCCAD	International Centre for Climate Change and Development
IDS	Institute of Development Studies
IPCC	Intergovernmental Panel on Climate Change
KEI	Key Expert Interview
KES	Key Experience Session

LHI	Livelihood History Interview
M	Male
MC	Mazer Char
MGEC	Migration and Global Environmental Change
MRF	Munich Re-Foundation
NA	Not Applicable
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
RCE	Resettlement Choice Exercise
SKAD	Sociology of Knowledge Approach to Discourses
SMPC	Summary of Product Characteristics
TV	Television
UK	United Kingdom
UN	United Nations
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees
UNGA	United Nations General Assembly
UNU-EHS	United Nations University Institute for Environment and Human Security
US	United States
USA	United States of America

Summary

WHEN THE DISASTER STRIKES: (IM)MOBILITY DECISION-MAKING IN THE CONTEXT OF ENVIRONMENTAL SHOCKS AND CLIMATE CHANGE IMPACTS

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This study responds to the need for more research around (im)mobility decision-making to better support people facing environmental shocks and climatic changes. The concept of Trapped Populations, first appeared with the release of the 2011 Foresight report yielding repeated use in environmental migration studies and to a more limited extent policy. Although a seemingly straightforward concept, referring to people's inability to move away from environmental high-risk areas despite a desire to do so, the underlying reasons for someone's immobility can be profoundly complex. The empirical literature body referring to 'trapped' populations has similarly taken a fairly simple and narrow economic explanatory approach. A more comprehensive understanding around how immobility is narrated in academia, and how people's cultural, social and psychological background in Bangladesh influences their (im)mobility, can provide crucial research insights. To better protect and support people living with environmental shocks and changes worldwide we need to build robust and well-informed policy frameworks

To achieve this, a set of discourse analyses were carried out. Firstly, a textual Critical Discourse Analysis (CDA) reviewed how 'trapped' has been framed within academia. Secondly, a Foucauldian inspired discourse analysis was performed on field data to explore how power, knowledge and binary opposites shape and determine people's social norms in terms of their (im)mobility decision-making. These key concepts critically showcased how meaning, values and power can constrain the mobility of a social group. The analysis was carried out on a large set of field data gathered between 2014 and 2016 in Bangladesh. The data on urban immobility and rural non-evacuation behaviour was gathered through a mixed-method quant-qualitative approach that included Q-methodology, storytelling group sessions, in-depth interviews and a survey questionnaire. Other key concepts used to frame the analysis included those of subjectivity, gender, place and space.

The textual discourse analysis highlighted the dangers of framing mobility or resettlement as a potential climate adaptation. Assisted migration, could for example end up disguising other hidden political and economic agendas. The research identified how the empirical notions of 'trapped' move beyond economic immobility. People in Bangladesh described being socially, psychologically and emotionally 'trapped'. These empirical notions are useful within the area of climate policy, as they raise questions around whether mobility in fact is the solution.

Chapter 1

Introduction

1.1 Introduction

Climatic changes and global environmental shocks generate fundamental challenges to most countries' development progress. The unique location of Bangladesh in the Ganges-Brahmaputra delta for example, on one hand provides the country with valuable natural resources. However, on the other hand, the delta location also exposes its people to various environmental threats, shocks and changes (Pouliotte et al. 2009; Penning-Rowsell et al. 2013; Ayeb-Karlsson et al. 2016). One of the most common responses for people dealing with such environmental changes and shocks is to move away from them (Blaikie et al. 1994; Black et al. 2011b). People do what they can to escape, and to put themselves, and their food security or livelihood sources, in safety. These movements can take the shape of longer mobility processes, such as in the case of migration, or the mobility can be a more sudden escape of an impending hazard, such as in the case of evacuation. Other times people do not move, or manage to escape, and instead end up (in)voluntary immobile or 'trapped'.

This doctoral study responds to the need for more research around (im)mobility decision-making to better support people facing environmental shocks and climate change impacts. The concept of Trapped Populations¹ first appeared with the release of the 2011 Foresight report (Foresight 2011; Baldwin 2016). Since then, the concept has been widely used within environmental migration studies, and to a more limited extent within climate policy discussions. Although a seemingly straightforward concept, referring to people's inability to move away from environmental high-risk areas despite a desire to do so, the

¹ Trapped terminology: In this manuscript, Trapped Populations is used to refer to the existence of the concept (noun); 'trapped' is used to refer to when a person is labelled as being thus (adjective); and trapped is used to refer to the action of being rendered immobile in such a way (verb).

underlying reasons for someone's immobility can be profoundly complex. The empirical literature body referring to 'trapped' populations has similarly taken a fairly simple, narrow and economic explanatory approach. A more comprehensive understanding around how immobility is narrated in academia, and how people's cultural, social and psychological background in Bangladesh influence their (im)mobility, can provide crucial research insights. To better protect and support people living with environmental shocks and climatic changes worldwide we need to build robust and well-informed policy frameworks. This research will comprehensively support the conceptual framing around people's (im)mobility decision-making in the context of climatic stress.

To achieve this, firstly, a textual Critical Discourse Analysis (CDA) will review how 'trapped' has been framed within academia. This will reveal what and how previous, current and potential future conceptual discourses give meaning and value to the concept. Secondly, a Foucauldian inspired discourse analysis will be carried out on a large set of empirical field data collected in Bangladesh between the years of 2014 and 2016. This analysis will examine in what way power, knowledge and binary opposites² shape and determine local discourses around (im)mobility. This is important as such discourses are projected into people's social norms, decisions and behaviour. In other words, the Foucauldian inspired key concepts support the elaboration around how meaning, values and power can constrain the mobility of a social group. The empirical field data on urban immobility and rural non-evacuation behaviour will be gathered through a mixed-method quant-qualitative approach that include Q-methodology, storytelling sessions and in-depth interviews as well as a survey questionnaire. Other key concepts used to frame the analysis include those of subjectivity, gender, place and space.

² The term 'binary opposites' refers to the dual structuring where pairs (words, things or characteristics) that are opposite in meaning are defined against one and another, such as man-woman, body-soul, black-white, east-west, and rural-urban. It builds upon the idea that people feel a 'natural' need to order their reality in a way that the world makes sense to them. The system is conceptually understood as a fundamental organiser of all languages and thoughts (Foucault 2000, 2002).

The analysis will enhance the understanding of potential risks, dangers, opportunities and constraints within climate policy and climate action, to better protect vulnerable people worldwide facing climatic changes and environmental threats.

1.2 Research aim, manuscript outline and research questions

The overall aim is to enhance the understanding around (im)mobility decision-making in the context of climate and environmental changes³. These insights will support the development of appropriate climate policy initiatives and actions, while shedding light on potential risks and dangers within the current discursive framing. Under this overall aim, the objectives of the study are to investigate the depth and values of existing discourses around (im)mobility in the context of environmental threats in academia and from primary data. The discourse analysis will be done firstly textually and conceptually within academia, and secondly empirically through data collected in the field on people's (im)mobility decision-making in Bangladesh. The concept of Trapped Populations (Foresight 2011) will be applied to frame the analysis, and the intention of the research is also to critically reflect upon its current shape and form. This could open up the notion of being 'trapped' for potential expansions around the concept.

The theoretical foundation guiding the discourse analysis is extended from Foucauldian ideas around the function and structural relationship between discourse, power and knowledge (Foucault 1972, 1977, 1981, 2002). The introducing chapters include a literature review of key concepts, previous research carried out in the thematic area, the research context, as well as a description of the research methodology and material (Chapter 2 to 3). To comprehensively capture the variety of the discursive layers around environmental (im)mobility, the research will include the following three analysing steps presented as separate chapters: Firstly, a textual Critical Discourse Analysis (e.g. Fairclough 1995, 2003) of the Foresight report will be carried out, along with all academic

³ The IPCC report (2014) stated that although there is low confidence for the attribution of changes in extreme events (such as tropical cyclones) due to anthropogenic influences, it is likely that the frequency and intensity will increase due to other climate change impacts (such as increased temperature, sea-level rise and rainfall). This manuscript acknowledges the difference, and therefore refers to climate change impacts and 'environmental shocks' when drawing attention to tropical cyclone activity.

publications, to date, referring to the concept of Trapped Populations (Chapter 4). This will serve the function of problematising its conceptual definition, and the values, meaning and textual reproduction around the Trapped Populations concept. The textual analysis will also introduce power elements of ‘who speaks the truth’, or *who* states *what* and *why* in relation to the concept, keeping its crucial influence within climate policy in mind. Secondly, a separate empirical discourse analysis will investigate (im)mobility decisions in an informal urban settlement in Dhaka named ‘Bhola Slum’ by incoming environmental migrants⁴ from Bhola Island. The migrants mainly moved here due to the riverbank erosion and cyclones back on the island (Chapter 5). This discourse analysis will include Q-methodology to identify the existing discourse groups, while qualitative storytelling sessions and a survey questionnaire will further the understanding of the detected discourses. The reasoning behind this analysis is justified by the Foresight report concluding that cities in low-income countries should be considered high-risk areas for ‘trapped’ populations⁵. However surprisingly, there is little research examining urban ‘trapped’ people to date. Thirdly, the final step is a similar empirical discourse analysis to the one in Chapter 5. This analysis however, is carried out in the context of disaster (im)mobility, or non-evacuation behaviour, in three coastal study sites in southern Bangladesh frequently struck by cyclones (Chapter 6). This chapter focuses on the gender component of climate change and disaster⁶ vulnerability, and is justified by clear differences in the evacuation patterns of women and men in the area. There is also a conceptual need to expand the concept of Trapped Populations beyond geographically determined populations, and non-migration behaviour. Finally, the research manuscript is brought together by a concluding and recommending chapter (Chapter 7).

⁴ This manuscript refers to the term ‘environmental migrants’ to describe people who reported that their migration decisions were partly (or fully) influenced by environmental stressors and shocks in the geographic area that they are moving from.

⁵ These urban areas are considered ‘high-risk’ areas due to urban hazards beyond environmental stressors, such as for example socio-political and conflict related disturbances. The hazards may end up ‘trapping’ people by increasing their vulnerability while making them less able to move (Foresight 2011).

⁶ A hazard turns into a disaster once it has a negative impact on a vulnerable group of people. The severity is, therefore, a reflection of location, intensity and amount of vulnerable people hit by the disaster (Wisner et al. 2004).

The following research questions will guide the three analytical chapters (e.g. Chapter 4, Chapter 5 and Chapter 6). In the textual Critical Discourse Analysis (Chapter 4) we focus on the conceptual birth, development, and use of Trapped Populations to understand, explore and identify:

(Q: 4.1) Why the concept appeared when it did?

(Q: 4.2) How it has been shaped by environmental migration scholars to date?

(Q: 4.3) What different way(s) the term is currently being used?

(Q: 4.4) If there is a potential for direct or inadvertent policy abuse/misuse of the concept in its current form?

The first empirical discourse analysis based on field data from a slum located in Bangladesh capital Dhaka (Chapter 5) aims to answer the following research questions from an urban immobility perspective:

(Q: 5.1) Do any of the discourse groups⁷ want to move but feel like they cannot leave or escape the settlement; e.g. identify themselves as ‘trapped’?

(Q: 5.2) How do they describe their immobility (with the aim of moving beyond economic explanations); e.g. why are they immobile?

(Q: 5.3) Do the narratives reveal different notions of being ‘trapped’?

The second empirical discourse analysis (Chapter 6) elaborates around how gender can support in explaining rural non-evacuation behaviour in coastal Bangladesh while framed around the following research questions:

⁷ The discourse groups refer to the Q-factor groups identified through the Q-analysis which grouped people’s subjective responses in relation to (im)mobility decisions in such a way so that it reflects the broader discourses in the study area (as described in Watts and Stenner 2012).

(Q: 6.1) Do any of the discourse groups describe a desire to move/evacuate to the cyclone shelter(s) but feel 'trapped' or constrained to do so due to their social position?

(Q: 6.2) How is this social immobility described, and is it affecting men and women differently; e.g. why do people end up 'trapped'?

(Q: 6.3) Do the narratives disclose different notions of being 'trapped'?

Chapter 2

Conceptual Introduction and Theoretical Framework

2.1 Introduction

In recent years, the study of climatic and environmental changes, decision-making and (im)mobility has resulted in a wide corpus of literature. This literature will be reviewed in more detail in the textual analysis with respect to ideas around Trapped Populations. In this chapter, three steps to developing the theoretical framework are outlined. These are as follows:

- (1) A brief introduction to the evolution of the notion of ‘trapped’ populations, identifying the gaps in current literature, and understanding of the concept⁸. In particular, the need for more discourse analyses around the subject is introduced.
- (2) Moving onto theoretical key concepts guiding the discourse analyses. Many of them are inspired by Foucauldian publications (Foucault 1972, 1977, 1981, 2002), and Q-methodological literature (Stephenson 1935, 1953). This section will explore concepts such as *discourse (concourse)*, *power*, *knowledge*, *binary opposites* and *subjectivity*. Additionally, these theoretical key concepts will be linked to *gender*, *place* and *space*, *behaviour* and *decision-making* before moving onto the research context.
- (3) Ultimately, a review of research articles applying similar theoretical concepts in the research area will be presented. This way, what has been done already in the geographic area is portrayed before moving onto the doctoral analysis.

⁸ In Chapter 4, we complement this introduction to Trapped Populations with a literature review on the discursive narratives leading up to the creation of the concept, as well as a critical discourse analysis of all publications until date referring to the concept e.g. a textual analysis post-Foresight of academic publications referring to ‘trapped’. In this way, the analytical chapter deeper reviews the key literature, as well as the values and meaning of current discourses surrounding the concept.

The detected research gaps in the literature that this doctoral study responds to are compiled in the chapter summary.

2.2 The evolution of Trapped Populations

Past studies have claimed, and to some extent shown, that climatic and environmental changes can negatively impact sustainable and productive livelihoods (Chamber and Conway 1992; Scoones 1998, 2009), and even turn some locations uninhabitable (see IPCC 2014). As a result, the debate around the future habitability of vulnerable and climatically stressed regions has opened up the question of potential limits and constraints to adaptation (Adger et al. 2009; Pelling 2010; Dow et al. 2013). One of the most common adaptive responses to livelihood system pressure, or failure, is that people move or migrate (temporary, seasonally or permanently) in search of alternative livelihood sources (El-Hinnawi 1985; Myers 1997; Black et al. 2011a, 2011b; Morrissey 2012). However, those who move away from hazards, while searching for livelihood security and safety, may instead find themselves facing other risks and vulnerabilities upon ‘arrival’ (Blaikie et al. 1994; McNamara et al. 2015). At the same time, others may be lacking resources or ability to move, and end up stuck in vulnerable areas: an idea leading up to the conceptual creation of the Trapped Populations concept (Foresight 2011).

References to involuntary immobility have been observed in the literature on migration studies for some time (e.g. Carling 2002; Lubkemann 2008), as well as in relation to people’s inability to escape risky locations (e.g. Blaikie et al. 1994; Elliott and Pais 2006; Thiede and Brown 2013). However, the idea of populations being ‘trapped’ in a geographical location by environmental hazards was largely unnoticed until its appearance in the UK Government’s Foresight: Migration and Global Environmental Change (MGEC) Report (Foresight 2011). In this report, ‘trapped’ populations were proposed to define those who are “*unable to move away from locations in which they are extremely vulnerable to environmental change*” (Foresight 2011:9) as they are facing a “*double set of risks*” (Foresight 2011:14). This referred to being unable to escape or move away from environmental hazards, while at the same time being highly vulnerable to their impacts. Urban areas located within low-income countries were therefore stated to be particular areas of attention (Foresight 2011:201).

Migration towards such high-risk locations, and the potential for people ending up ‘trapped’ there, were of particular concern according to the report. Even though the concept marked an important step in the process of improved protection of those people most vulnerable to environmental changes, little in the way of critical analysis around the concept’s potential, as well as the actual existence of ‘trapped’ populations has until today been observed. This conceptual weakness perhaps emerged from the long dispute on the role of the environment within the literature body of migration studies.

Regardless of the conceptual birth of Trapped Populations, there is, as yet, no general agreement on what determines whether a migration decision is fully forced by environmental stress, rather than a livelihood strategy people use to adapt to various and multifaceted changes. Nevertheless, references to environmental migration and climate refugees are made on a widespread basis within academia, climate policy and action (Myers 1997; Foresight 2011; IPCC 2014; UNFCCC 2011, 2015). The notion of ‘trapped’ is potentially useful as a policy tool to identify those most vulnerable and exposed to environmental and climatic changes. Their extreme vulnerability, likely rooted in other socio-economic and socio-normative inequalities, are assumed to end up reducing their ability and adaptive capacity to respond to such changes. However, until today, the ambivalent shape and roots of the concept have restricted its functionality, and the potential risks and consequences of its use to identify populations ‘trapped’ or in need of support and protection, are yet unknown. The concept has generally been used to refer to geographically ‘trapped’ populations in environmentally high risk rural areas due to mainly socio-economic constraints (Milan and Ruano 2014; Warner et al. 2015; Adger et al. 2015; Adams 2016). However, more research is required to better understand and establish *how* people are ‘trapped’, *where* they are ‘trapped’ and *who* may be ‘trapped’. This research intends to address these conceptual and empirical gaps.

The weaknesses in defining ‘Trapped Populations’ have been acknowledged by some migration scholars. Black and Collyer (2014b) for example, pointed out that the concept needs to include social and legal constraints to people’s mobility and that more research is required to enhance its conceptual understanding (also noted in Black et al. 2013 and Adams 2016). However, although these more critical contributions have been useful, they have broadly focused on the structural reasons for being ‘trapped’, while largely ignoring

the importance of people's *subjectivity* involved in their (im)mobility decision-making. How an individual understands oneself within a social context, and what it momentarily *feels* like to exist in this set of social relations, space and place (see Morales and Harris 2014:706), will greatly affect whether a person identifies as 'trapped' or not. This understanding also supports expanding the relationship between mobility and immobility, as they are not simply binary opposites. A person may be temporarily immobile, or end up 'trapped' after an extreme weather event, and then return to being mobile. People can go from being mobile to immobile, manage to move away from one environmentally risky location, but find themselves 'trapped' or unable to move away from another urban high-risk area (Foresight 2011; McNamara et al. 2015).

This gap in the literature was in part, highlighted by Black et al (2013: S36) who stated that it is "*difficult to distinguish, either conceptually or in practice, between those who stay where they are because they choose to, and those whose immobility is in some way involuntary*". Attention must be drawn to *who* is to determine that a population is 'trapped' or that an area should be considered 'high-risk' and *why*. The conceptual development therefore already established that 'trapped' only ought to refer to those expressing a desire to move but still finding themselves unable to do so, while in no way addressing their right to stay in 'risky' locations (Black et al. 2013; Black and Collyer 2014b). This leads us towards a conceptual need to define and distinguish between the levels of (un)ability to move (Black et al. 2011, 2013; Black and Collyer 2014b). In an early attempt to dissect the layers around 'ability' to move, the following diagram was presented to illustrate how immobility relates to financial, social and human or political capitals. According to the diagram, poor people were portrayed as less able to move although their desire may be greater (see fig. 2.1). It was in this way that they ended up facing a double set of risks: Not only are they more vulnerable to threats, but also less able to escape them (Foresight 2011; Black et al. 2013).

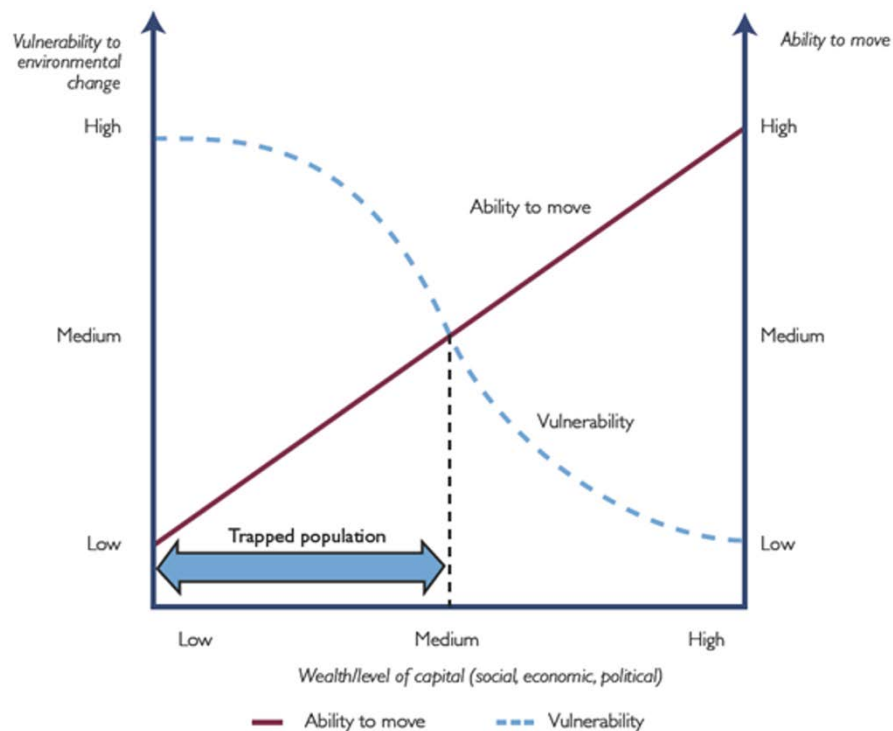
Figure 2.1 Trapped Population model

Figure 2.1 Shows diagram presented in the Foresight report (2011:14) indicating high and low-risk scenarios for people to end up ‘trapped’. Here, the relationship between population’s vulnerability to environmental change, ability to move, and wealth/level of capital (economic, social and political) is what determine the risk of them becoming ‘trapped’.

Even though the capitals included in the figure (fig. 2.1) refer to socio-political elements, such as a place to go, means to go, and potential fear for what is awaiting, or left behind, the language framing this conceptual definition appearing in the Foresight report was criticised for being strongly economic (Felli and Castree 2012; Baldwin 2016). The potential risk is that heavily economic and neoliberal descriptions end up disguising financial benefits or other political agendas. The financial framing identified within the language describing the concept of Trapped Populations, can be observed through, for example, the repetitive use of words such as *capital*, *wealth*, *resources*, *economic*, *poor*, and, *low-income*. The textual reproduction of a heavily economic language may also result in other policy consequences such as how policy-makers perceive, analyse and understand the language produced within the topic area. Even though the publications referring to ‘trapped’ most likely are well-meaning, and intend to address a sensitive,

urgent and complex issue, the linguistic reproduction risk to write off the topic as more simplistic and linear than envisioned by the authors.

Another attempt to conceptualise the Trapped Populations' concept was found in Black et al. (2013) while addressing the question of when people end up 'trapped'. In the elaboration around potential scenarios that may lead to people being 'trapped', another figure was presented linking mobility outcomes to underlying vulnerability, hazardous events and recovery phases (see fig. 2.2). The figure shows that that immobility, displacement and migration is complex and multidirectional, and strongly dependant on vulnerability, hazard impact and recovery. As illustrated in the figure (fig 2.2), people may end up being 'trapped' during the exposure of a hazardous event, but not after the event or during the recovery phase.

Figure 2.2 Illustrates hazard impact, recovery and immobility connections

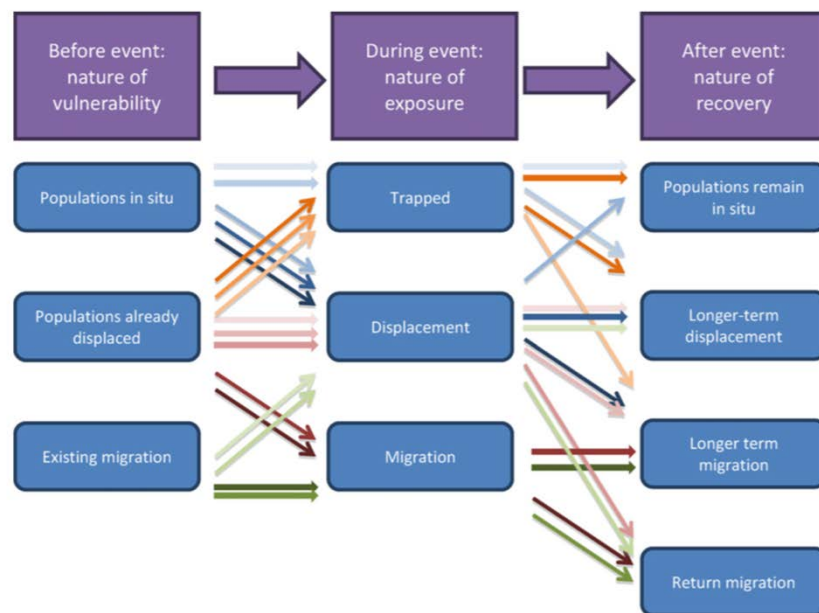


Figure 2.2 The figure presented in Black et al. (2013: S38) shows how the relationship between migration, displacement and immobility is multidirectional and strongly dependant on vulnerability, hazard impact and recovery. Immobility, or people risk ending up 'trapped' during the exposure of a hazardous event but not after.

The (im)mobility scenarios expands on the suggested distinctions in mobility patterns, including those of categorising the movements according to time, place and choice (Piguet 2013; Black et al. 2013):

(1) In *time* by distinguishing between temporary (below three months), short-term (above three months) and long-term (above a year).

(2) In *place* by differing between short- and long-distance moves, or internal- and international moves.

(3) In *choice* by referring to the distinction between involuntary or forced and voluntary movements.

However, to fully determine whether the language describing ‘trapped’ is economic and when people are described as being ‘trapped’, the values and meaning related to the descriptions appearing in publications that refer to the concept must be critically analysed. One way of examining what linguistic and textual meanings and values that are projected is to carry out a Critical Discourse Analysis. This research will therefore begin its analysis with such a discourse analysis of the textual use of ‘trapped’ within academia to critically elaborate around the surrounding discourses of the concept.

It is interesting that despite a clear conceptual ambiguity surrounding the concept since its appearance in the 2011 Foresight report, empirical studies determining populations ‘trapped’, or at risk of becoming ‘trapped’, to date, have neither vanished or ceased to appear. The immediate acceptance by migration scholars of the objective existence of such ‘populations’ worldwide could potentially be explained by the conceptual weakness and confusion. Similarly, to a disease not yet fully understood, the symptoms preceding its diagnosis are most diverse and widespread. Survey questionnaires are currently being re-shaped to capture such populations ‘trapped’ in environmentally risky locations, and previously conducted field data is being squeezed and reframed into describing people as immobile instead or mobile. However, the aftereffects of such empirical evidence within academia, future empirical research and climate policy are yet to be observed. This is why to further the understanding, of what it subjectively, psychologically and emotionally, means to be ‘trapped’, it is crucial to explore the underlying discourses around people’s empirical values and notions of being ‘trapped’. There is an urgent need to develop an evidence base by those experiencing immobility due to environmental stresses and shocks.

The key to this is to understand who defines whether migration is a solution, what environmental threats prompt mobility, and the reasons why people sometimes do not move away or manage to escape such threats. In this doctoral study, we will use discourse analysis to capture people's discursive subjectivity in relation to the research topic or people's notions around being trapped. We also acknowledge that understanding of other key concepts (such as power, knowledge, gender, binary opposites as well as space and place) will be necessary to fully comprehend the dynamics and functions of the discourses we are to analyse. Many of these concepts are heavily inspired by Foucauldian literature that will support sharpening the analysis of the qualitative empirical field data. Q-methodology (e.g. a factor analytical approach that groups people's attitudes or viewpoints around a specific topic or research area) will be used to identify the existing discourses. One of the research gaps that this doctoral study addresses, is a critical analysis of the meanings and values, or discourses, surrounding the notions of 'trapped' populations. This will be done conceptually within academic texts, and empirically through (im)mobility data from an urban non-migration perspective, as well as a rural non-evacuation context. The urban perspective is important as no empirical studies on 'trapped' people to date have been carried out in urban areas. This is surprising since the Foresight report stated that these areas in low-income countries are of particular concern for such immobile populations. The rural sudden immobility perspective of non-evacuation behaviour will address another empirical research gap around subjective attitudes, feelings and emotions of being temporarily or momentarily 'trapped' during a hazardous event. A Foucauldian inspired theoretical framework can support in explaining the roots of such immobility. A Critical Discourse Analysis will investigate what discursive realities, social norms, power relations and discursive patterns of behaviour are active in the study sites. In this way, the choice of theoretical foundation will assist the exploration of immobility decision-making from an empirical perspective, and thus facilitate greater understanding of the causality behind being 'trapped'.

2.3 Theoretical framework

When reviewing the environmental vulnerability literature within the areas of disasters, climate change and migration, one observes that it has been heavily framed by a *behavioralist* and a *structuralist* (or political ecological) point of view. The behavioralist

perspective frame environmental and disaster vulnerability as a lack of planning and preparedness, while the structuralist viewpoint rather argues that the vulnerability is deeply rooted in social structures (White et al. 2001; Cutter 2003; Adger 2006). The structuralist framing around vulnerability to environmental changes has therefore been linked to the distribution of wealth and power (Blaikie et al. 1994; Oliver-Smith 1996). From a behaviorist point of view, human migration is a behaviour that has been learned through the interaction with the environment, and therefore purely focuses on an ‘objectively’ observed stimulus-response behaviour (e.g. Pavlov 1897; Watson 1913, 1930). People have learned that the best way to respond to environmental changes is by migrating or trying to move away from them. A structuralist point of view would instead argue that such migratory behaviour, and the human culture around this behaviour, must be understood as part of a larger system or structure. Only when uncovering this structure, can one understand what people do, think, perceive and feel (e.g. Lévi-Strauss 1955; De Saussure 2011). Out of this idea grew a critique of structuralism known as post-structuralism (e.g. Michel Foucault and Judith Butler). This critical response generally rejected the idea of a self-sufficient system and its fixed binary opposites. The assumption that one word of the two in the pair dominates the other was also rejected. The post-structuralists argued that the only way to fully understand the purpose of the binary opposites is to critically and separately analyse the term(s), and then its relationship to its related pair. This is because knowledge, and the production of knowledge is central to understanding the structure. In other words, to understand an object (such as text), it is necessary to study the system of knowledge that produced the object, and not only the object itself. This is also the way we approach the notions of Trapped Populations, with the aim of enhancing the understanding around (im)mobility decision-making. The theoretical foundation suggested to guide our analysis includes key concepts such as discourse, power, knowledge, binary opposites and gender, many of which have been developed and shaped by Foucauldian literature. The way we apply the theoretical framework within the area of environmental (im)mobility and decision-making offers an alternative way to approach the research topic.

Discourse, power and knowledge are not Foucauldian concepts, however the many Foucauldian conceptual publications have supported and shaped their framing. To

summarise, a conceptualisation around (1) *discourses*⁹ was expanded beyond ‘language’ to include practices and behaviour (e.g. different from the framing of the 1950s structural linguistics), (2) the flexible and temporary shape of *power* relations within a network of people differ from the Marxist top-down idea where power is obtained by the state, and (3) the concept of *knowledge* was framed as a construction of a truth rather than the history of ideas (Foucault 1972, 1977, 1981, 1982, 2002). To analyse the textual use of ‘trapped’ within academia, or the discourses surrounding the concept of Trapped Populations, a Critical Discourse Analysis of the textual relationships within the publications will be carried out (e.g. Fairclough 1995, 2003). This kind of critical analysis generally implies an analysis of text, speech, communication and conversation (Fairclough 1995, 2003). A Foucauldian discourse analysis instead pays more attention to behaviour, practices, performance and actions, and how these are ruled and regulated by power. People actively construct social norms, rules and boundaries through communicative language. In a similar way, behaviour, practices and body language, as well as people’s observations and reflections (e.g. knowledge) around the actions of a collective group also create and reproduce social discourses (Foucault 1981, 1982, 2002). This doctoral study will apply an experimental discursive framework that pays attention to both language and practises. Language will for example guide the textual- and conceptual discourse analysis (in Chapter 4), while the empirical findings additionally will include field observations around discursive behaviour and practices (in Chapter 5 and 6).

Discourses can compete, contradict or complement one another (Foucault 1981; Fairclough 2003). In other words, it is the structural similarities that group them together rather than their viewpoints or realities (see fig. 2.3).

⁹ The concept of Discourse is here defined as “the general domain of all statements, sometimes as an individualised group of statements, and sometimes as a regulated practice that account for a number of statements (Foucault 1972:80).”

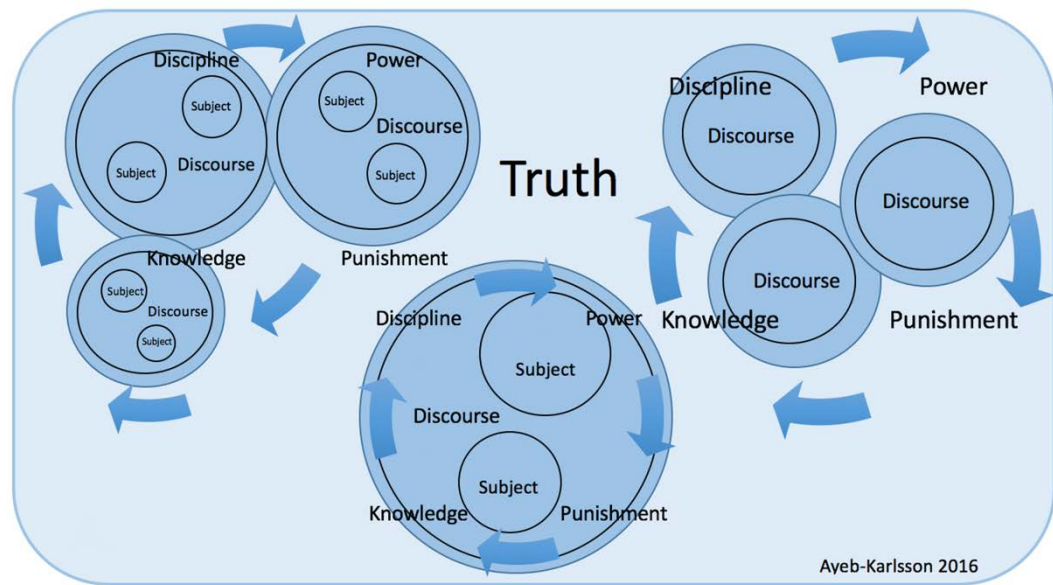
Figure 2.3 Model illustrating discourse relations

Figure 2.3 The figure illustrates the subjective relationship to the collectively shared discourses or discursive reality, as well as how discourses can exist in the same world (or truth), but yet compete, contradict or complement one another. The discourses appearing attached to one another in a group can be thought of as a complementing discourse group, while the three separate discourse groups may compete against, or contradict, each other's viewpoints, attitudes or realities. The arrows indicate the reproduction and repetition of these discursive attitudes, and the productive relationship between discourses, power and knowledge which helps maintain their survival (authors own creation).

In this theoretical context, everything is socially constructed through its discursive creation and reproduction within the collective group. The Foucauldian description of the structure which keeps it all in a functional state extends to the discursive relationship between *discourse*, *knowledge* and *power*. There can be no power without the correlative constitution of knowledge¹⁰, nor knowledge that does not produce or structures power. In this way, power relations go beyond 'the powerful powering the powerless'. Power is not something one social group or institution permanently possesses, but rather something

¹⁰ Foucault claimed that "All knowledge, once applied in the real world, has effects, and in that sense at least, 'becomes true'. Knowledge, once used to regulate the conduct of others, entails constraint, regulation and the disciplining of practice. Thus, there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time, power relations (Foucault 1977: 27)". In other words, knowledge is produced through power, and new knowledge is produced, and social norms confirmed, through observations of power relations. The effects of power can therefore be creative and imply positive growth.

operated every day within social relations between people and institutions (Foucault 1977, 1980).

The concepts of knowledge and power in this way influence and limit people's (e.g. the subject's) decision-making process through their discursive reality. Take for example the context of immobility or non-evacuation behaviour during environmental shocks in Bangladesh; some people may immediately consider evacuating to the shelter once receiving warning messages of a cyclone approaching, while for others, this may not even be an option. An unmarried woman may perhaps not find safety in a public shelter, while a married woman or an unmarried man would (see function illustrated in fig. 2.4). The unmarried woman may decide not to evacuate as the shelter is considered an inappropriate space for her, or the evacuation action as inappropriate behaviour. The social-norms or social power relations in place within this discourse then prevent her from evacuating. Her place of belonging may be restricted to the space of the home. The rest of the family may evacuate, while she stays behind in the house. The knowledge around how someone in her social position 'should' behave, and where they 'should' be prevents her from evacuating or leaving the house. It is in this way that the reproduced knowledge ends up disciplining people's decisions and behaviour within a discourse. The knowledge may imply that she could get raped in the shelter, or on the way to the shelter. This knowledge could prevent her from evacuating as she may fear getting assaulted. The discourses also contain a punishing element regulating people's thoughts and behaviour. For example, it may be enough that it was perceived by others that the unmarried woman was assaulted in the shelter for her to end up not getting married. As a result, she could become an economic burden to her family. In this way, she feels 'safer' trying to survive the cyclone at home than by putting her 'social value' at risk. This is an example of how discursive power and knowledge may end up influencing people's decision-making processes, and result in them being immobilised or trapped in a geographical place or social space (Alam and Rahman 2014; Ayeb-Karlsson et al. 2018b, 2018d, 2018f).

Figure 2.4 Model illustrating subject-discourse relationship

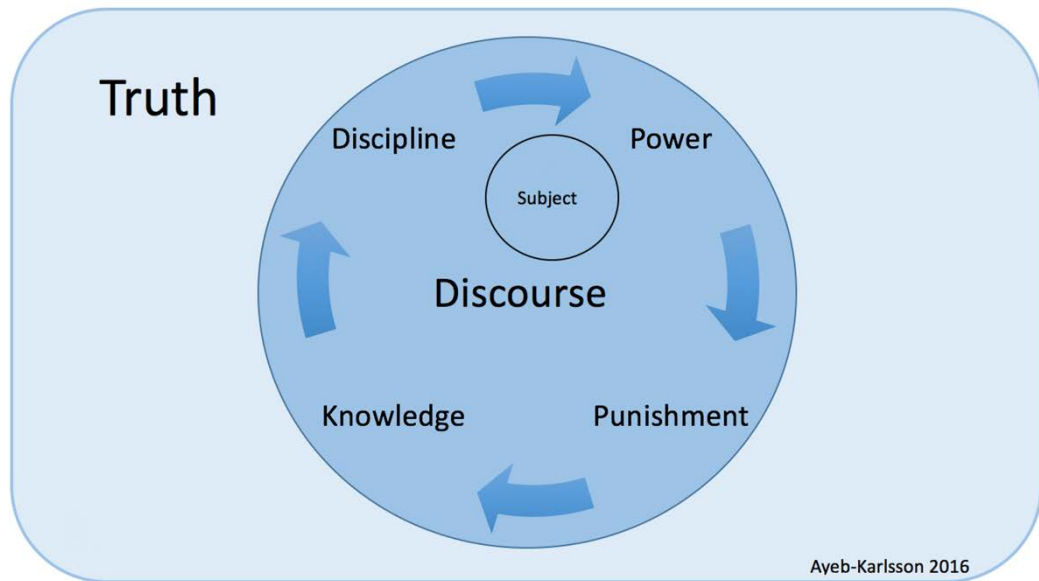


Figure 2.4 The figure illustrates how the subject is locked in a discourse, or a discursive context, where the reproduction of a specific reality, and one's understanding of its social context (e.g. subjectivity) is regulated by the repetition of the active knowledge and power relations. Elements of discipline, such as normative and subjective control of one's behaviour, thoughts and language, as well as social punishment, such as shame and social stigma once transgressing normative boundaries, maintain the discourse, discursive structure or its reality intact (authors own creation).

This introduces another key concept in our theoretical framework; *subjectivity*¹¹, or self-formation, meaning how someone understands what it feels and means to exist in a social context, in a specific time, space and place. Foucauldian inspired descriptions of the subject (Foucault 1981, 1982; Butler 1997; Skinner 2013) and its relationship to discourses can at times be perceived as passive from a classical structuralist point of view. The subject may appear to be locked into a discursive system, or trapped in its reproductive structures. However, since the subject constantly participates in the construction of the self, and its discursive reality, it is rather an active 'agent of change'. Subjectivity is, rather than agency, the opposite to structure (Foucault 1982; Butler 1997; Morales and Harris 2014). It is the subject, through the way that (s)he understands and

¹¹ Morales and Harris (2014) define subjectivity as "how one understands oneself within a social context - one's sense of what it means and feels like to exist within a specific place, time, or set of relationships" (Morales and Harris 2014:706).

perceives the world, and its reality, that changes and transformations of discourses, power relations and knowledge take place (Nightingale and Ojha 2013; Morales and Harris 2014). Here, the reproduction or repetition of thoughts, language and behaviour is key. Several subjects repeating one and the same thing, or one thought repeated by one subject in a particular role of power, can transform a discursive reality. To give an example, one unmarried woman evacuating to a shelter once may simply be socially punished back into the current social-norm, or normatively ‘appropriate behaviour’, but a group of unmarried women all reproducing evacuation behaviour, or an educated unmarried woman, such as the daughter of the local chairman, repeatedly evacuating during several cyclone strikes may push for a discursive change. In this way, discourses are flexible, transformable and changing through the social reproduction taking place within them.

As power in this doctoral study is understood as a chain or network of social relations that can shift, or be resisted, ‘*place*’ and ‘*space*’¹² are other key concepts to reflect upon. The movement from one place or space to another may for example shift a power relation (Ayebe-Karlsson et al. 2018b; Foucault 1977, 1980). In this doctoral study, attention will be given to shifts in power relations when people move from rural to urban areas, or shifts in power relations when people move from the space of a home to the space of a cyclone shelter. People migrating from rural to urban areas may on one hand end up facing new socio-normative challenges, but on the other hand, the move could open up for other opportunities. The power relations existing in one rural place may not apply to the urban space, or migrating destination. The social norms and power relations that people may be used to in their home villages are sometimes knocked out of order when people change places. Transformations of this kind can take place although people migrate together in a social group. This doctoral analysis will elaborate on the ways this may influence people’s (im)mobility, and decision-making process around staying and going.

¹² In this manuscript *space* is thought of as a more short-term social area that is given meaning or value in relation to a specific time, while *place* is understood as a more long-term cultural area where people feel or are aware of the socio-cultural codes, attitudes and regulations surrounding it.

If *gender* is mentioned at all in a climate change context, it generally refers to particular, and rather post-colonial¹³, descriptions of ‘poor undeveloped women living in the South’ (Nielsen and D’haen 2014; Baldwin 2003, 2016). Key concepts, such as *discourse* and *binary opposites*, could be applied to explain some of this conceptual framing. The climate change discourse has for decades been linguistically framed by climate modellers, natural-, and environmental scientists, while social scientists fairly recently started to engage in the research area (Adger 2010; Nielsen and D’haen 2014; Baldwin 2003, 2016). The way discourses maintain and reproduce a system, structure or a relationship between binary opposites is described in ‘The Order of Things’ (Foucault 2002). The idea that words contain ‘masculine and feminine’ values and meaning helps explain why environmental science, climate change and gender studies are described as each others’ opponents. Over time, and through social discursive reproduction, this order and how we describe the terms appears to us as ‘natural’ or logical. Various literature has applied such a dichotomous theoretical framework to analyse gender relations, in a world structured in binary opposites, where what is described and reproduced as *masculine* and *feminine* must be kept apart for order to remain (Hirdman 1990; Cornwall 2003; Kulick 2008).

The inclusion of gender as a key concept of (im)mobility decision-making is important due its linguistic separation, or absence within the climate change literature (MacGregor 2009; Terry 2009). Questions around climatic vulnerability, immobility and ‘trapped’ populations ought to include a gender perspective for several reasons. In some disasters, or due to the impacts of some environmental changes, more women than men die. These lethality differences, were registered already in the beginning of the twenty-first century. To give some some examples, five times more women than men died in the 1991 Gorky cyclone in Bangladesh (e.g. Begum 1993; Terry 2009; Alam and Rahman 2014; Jordan 2018). Female casualties were also higher than male in the 2004 Indian Ocean tsunami (e.g. Revathi 2007). The literature shows that women are not only harder impacted by the immediate extreme weather event, but also by the disaster aftermath (Cannon 2002; Nadiruzzaman and Wrathall 2015). These mortality differences and gender vulnerability

¹³ ‘Post-colonial’ in this manuscript refers to the continuous occurrence or existence of something, such as thought systems, hierarchies and power relations, after the end of colonial rule.

generally trace back to women's socio-economic status (Neumayer and Plümper 2007; Rahman 2013; Juran and Trivedi 2015).

Social capital can be a question of life and death. Those with higher social capital, for example, are more likely to receive training, warning messages, shelter space, water, food and other relief (Rahman 2013; Alam and Rahman 2014; Nadiruzzaman and Wrathall 2015). Additionally, even though women may receive a warning message, they might still decide to stay back due to socio-cultural or socio-normative constraints. Emotions and feelings, such as shame or fear, may compel them to leave the house or evacuate to a public shelter as it may be perceived as an un-appropriate space or a dangerous place.

Alam and Rahman (2014) claimed, in a study focusing on women's vulnerability to disasters in coastal Bangladesh, that almost all female respondents (about 80 percent) stated that they knew that the cyclone was approaching. Nevertheless, most of them still decided not to evacuate to the shelters. Most respondents (60 percent), said that fear of harassment and discrimination in the shelters were important reasons as to why they stayed back. In particular, pregnant and adolescent women reported having faced unwelcome physical behaviour in the shelters before. Almost all, (90 percent) said that the lack of sanitary privacy, lavatory facilities and separate toilets made them stay home (Alam and Rahman 2014).

The conceptual idea, based on key concepts such as discourse power and knowledge, can be illustrated in the following way in regards to how these discursive social norms are thought to influence people's decision-making process (see fig. 2.5). The aim is to present a conceptual idea that can support in explaining how social norms, emotions and feelings may influence the decision-making process of, for example a woman deciding not to evacuate to a cyclone shelter.

The reasons behind immobility, or why populations may end up 'trapped', is never straightforward, but there are a few central components supporting this decision-making framework (inspired by Foucault 1977, 1980): (1) a decision is not seen as an event going immediately from intention to action or behaviour, but thought of as a longer decision-making process including several steps such as intention, aspiration, desire, action, behaviour, norm and value. Before an idea (intention, aspiration, desire) turns into action

(practise, behaviour, norm), it is perceived to be tested socially through communication, speech and stories; (2) emotions and feelings are passing through all these decision-making layers, and help regulate, or channel people into normative thoughts, decisions and behaviours; (3) a decision is not a linear process going from A to Z, but people move back and forward, may turn back from almost instigating an action, and refrain back to an aspirational state. This is thought to be regulated by feelings and emotions taking place when elaborating or testing the 'decision' socially; and finally (4) as people are locked into social discourses their decisions are discursively regulated by power (punishment) and knowledge (discipline). These regulations interactively take place on a collective and subjective level. People for example discipline their desires and intentions according to their knowledge of what is socially accepted, or could get socially punished for behaving in a way that is beyond the discursive norm of accepted behaviour in a place.

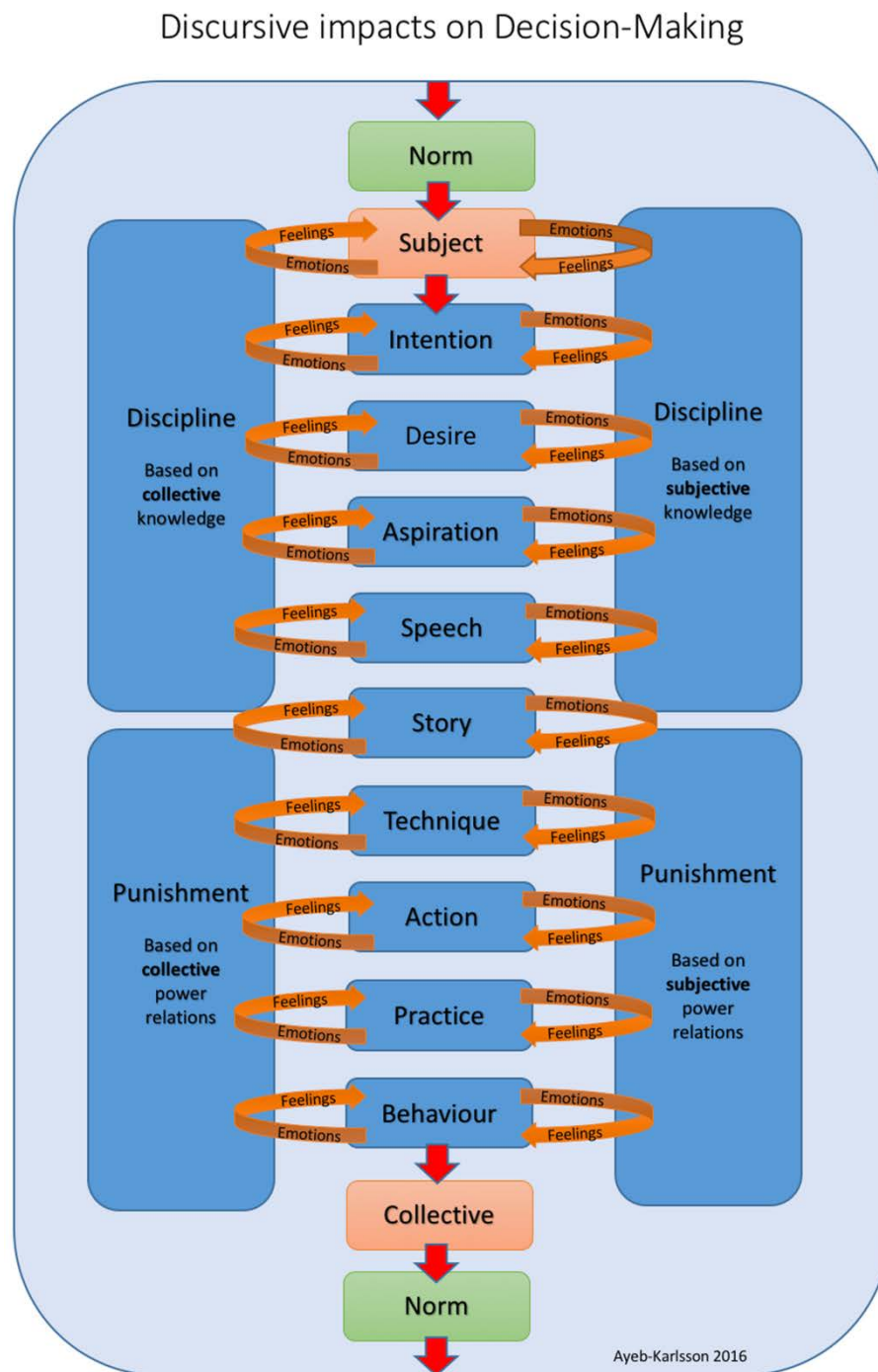
Figure 2.5 Discursive decision-making model

Figure 2.5 The figure illustrates a conceptual idea of how the decision-making process could be linked to discursive and social-norms through the interaction of power (through punishment), knowledge (through discipline), feelings and emotions (authors own creation).

The socio-normative constraints impacting someone's decision-making process is also interlinked to binary opposites around for example 'female' and 'male' behaviour. When the disaster strikes, women are expected to *care* for the house and for the family, such as for the children and the elderly, while men are expected to *protect* the household assets and family lives. The binary opposites of for example the 'active man' and 'passive woman', result in social restrictions around 'female' mobility, including swimming, running and climbing trees, all very useful to survive a cyclone strike. These 'female' mobility constraints are also found in socio-cultural traditions such as, in this regional context for example, the way women dress using a saree¹⁴ and how they keep their hair (e.g. long and spread out). It has been reported that women therefore often get stuck in trees and bushes during floods, which increases their risk of drowning (Ikeda 2015; Ayeb-Karlsson et al. 2018d, 2018e, 2018f).

There are a limited number of publications applying a somewhat similar theoretical framework in the context of the research topic. Eriksen et al. (2015) for example, applies a theoretical framework of discourse, power and knowledge to illustrate how subjectivity, identity, and social space may enable or constrain people's ability to adapt to climatic changes and shocks. Adaptation strategies, or people's adaptive behaviour, are seen as socio-political processes that showcase how subjects or social groups interrelate with one another, while responding to environmental or societal changes and disruptions.

Manuel-Navarrete and Pelling (2015) on the other hand, uses life-story narratives around coastal adaptation strategies and hurricane risks in the Yucatan Peninsula of Mexico to understand the operations of power. The findings show how discursive patterns shape authorities and their subjectivity. According to Manuel-Navarrete and Pelling (2015), the politics around development and adaptation are built upon authorities that promise security, and improvement, in exchange for domination over the subject. Authorities are presented to the subject through the lens of binary opposites, such as underdeveloped and developed, vulnerable and self-reliance or security and risk. This framing ends up

¹⁴ A garment worn by South Asian women, consisting of a long piece (8 to 15 meter) of cotton or silk wrapped around the body with one end draped over the head or over one shoulder.

constraining people in their decision-making process or limiting their choices and freedom. Wellbeing is perceived as becoming an extension of the organisation. Although useful, the publications (Eriksen et al. 2015; Manuel-Navarrete and Pelling 2015) apply a top-down policy oriented analytical approach, while this doctoral study aims to be more people-centred. In the analysis, people's decision-making processes will be elaborated upon through a combination of methodology applied within psychology, anthropology (ethnology), human geography and sociology.

2.4 Research context and area

The location of Bangladesh, in one of the largest deltas in the world, make the country prone to environmental hazards such as droughts, floods, cyclones and riverbank erosion (Penning-Rowsell et al. 2013; Ayeb-Karlsson et al. 2016). The study site selection, three rural villages (*Dalbanga South*, *Mazer Char* and *Gabtola*) in the coastal south and one urban settlement in the capital of Dhaka (*Bhola Slum*), includes a diverse set of livelihood systems experiencing various climatic, urban and socio-political extreme events (see fig. 2.6). Although the list of environmental hazards is long, people here mainly described the impacts the riverbank erosion and the cyclones have on their lives. In the rural villages people are currently dealing with these climatic events, while Bhola Slum was built by migrants moving here from Bhola Island after the devastating 1970 Bhola cyclone. People express being more afraid of the cyclones strikes, as riverbank erosion is a slow-onset process that does not lead to immediate (im)mobility decisions (e.g. evacuation to shelters) nor does it result in instant lethality (Ayeb-Karlsson et al. 2016). This doctorate will therefore pay special attention to (im)mobility decisions in the context of the cyclone strikes.

Figure 2.6 Hazard map of Bangladesh indicating study sites

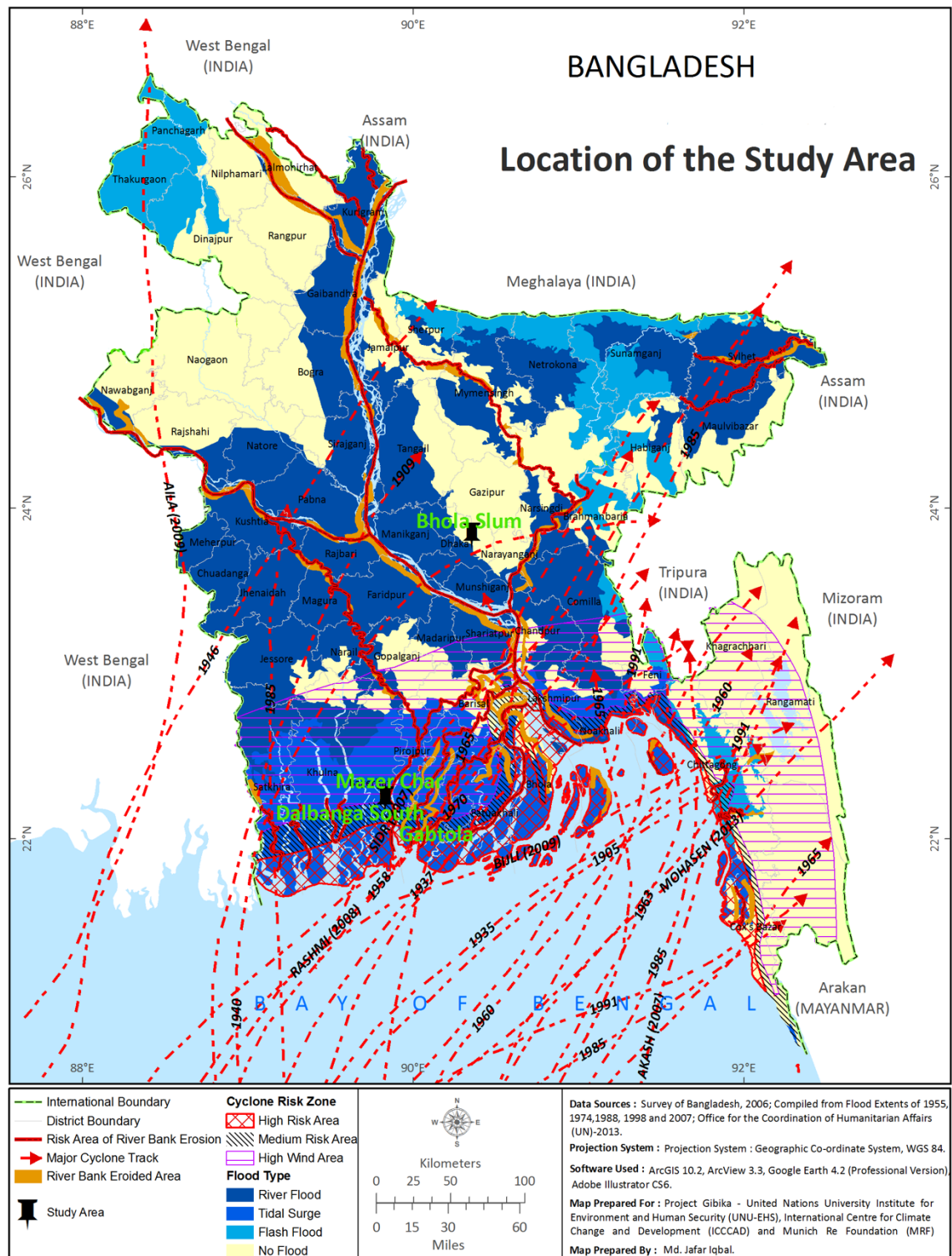


Figure 2.6 The hazard map of Bangladesh illustrates the current environmental stressors and shocks that people face within the study locations, as well as their locations within the country (Modified from Md. Jafar Iqbal 2015).

A tropical storm turns into a tropical cyclone when the wind reaches 74 m.p.h. or more, with an average of 13 depressions formed each year in the Bay of Bengal. People are therefore forced to learn to live with the storms, and the risk of them turning into cyclones¹⁵. Out of the tropical storms that turn into tropical cyclones in the Bay of Bengal, not all strike Bangladesh, and one single cyclone will never be able to hit the whole coast. Between the years of 1960 and 2009, for example, there were 15 cyclone strikes, whereof nine struck the south-eastern coast, four the south-western coast and two the central-eastern coast (Penning-Rowse et al. 2013; Alam and Rahman 2014). Over the last 200 years, about 70 cyclones struck Bangladesh and are claimed to have killed about a million people in total. The two deadliest were the 1970 Bhola cyclone, which killed about half a million to a million people, and the 1991 Gorky cyclone causing the death of over hundred thousand people (Chowdhury et al. 1993; Penning-Rowse et al. 2013; Alam and Rahman 2014). There are however great uncertainties around the death toll numbers as they were largely estimated. People who passed away after the strike, due to medical complications, lack of food, or water for example, were usually not included in the casualties.

The successful Cyclone Preparedness Programme (CPP) was created by the Bangladeshi government in collaboration with the Red Crescent Society after the deadly 1970 Bhola cyclone. It is widely argued, by research studies such as Haque (1995) and Penning-Rowse et al. (2013), that the initiative played an important role in reducing the losses of human lives in the more recent cyclone strikes (see fig. 2.7).

¹⁵ Tropical cyclonic storms have different names depending on where they are formed. Storms formed in the Atlantic Ocean are called hurricanes, storms in the Pacific Ocean are named typhoons and cyclones are storms formed in the Indian Ocean (UK Gov Met Office 2018). Since this doctoral study focuses on Bangladesh, the term cyclones will be used throughout the doctoral manuscript.

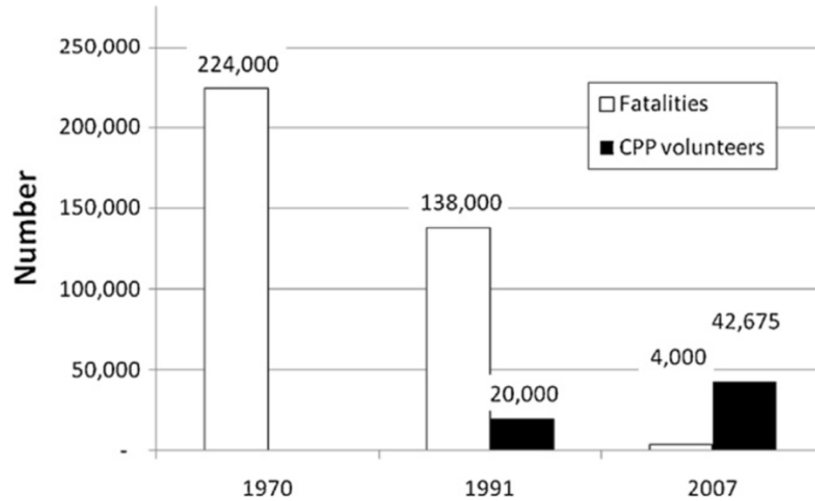
Figure 2.7 Overview of CPP volunteers and evacuation rates

Figure 2.7 The figure presented in Penning-Rowse et al. (2013: S47) shows how the number of casualties heavily decreased between the 1970, 1991 and 2007 cyclones. This was supposedly explained by the start of the Cyclone Preparedness Programme (CPP), however, various elements should be taken into consideration.

The CPP volunteers are currently in charge of the early warning system in the coastal villages, they facilitate, and support, people's evacuation to the cyclone shelters. These volunteers usually consist of local schoolteachers, government officials, village leaders and social workers in the area. The amount of CPP volunteers listed more than doubled between the years of 1991 and 2007, from 20,000 to over 42,000 volunteers (Haque 1995; Penning-Rowse et al. 2013). The positive evacuation trends registered around that time are thought to be a result of the CPP initiative. This includes the 350,000 people evacuating to 508 cyclone shelters during the 1991 Gorky cyclone. Nevertheless, a large number of people did not evacuate to the cyclone shelters, neither during the 1991 Gorky cyclone nor during the 2007 cyclone Sidr (Bern et al. 1993; Chowdhury et al. 1993; Parvin et al. 2008). Paul et al. (2010) even estimated that the average evacuation rate during cyclone Sidr in 2007, 33 percent according to the survey study, was not that different from the 1991 Gorky cyclone evacuation numbers (see fig. 2.8).

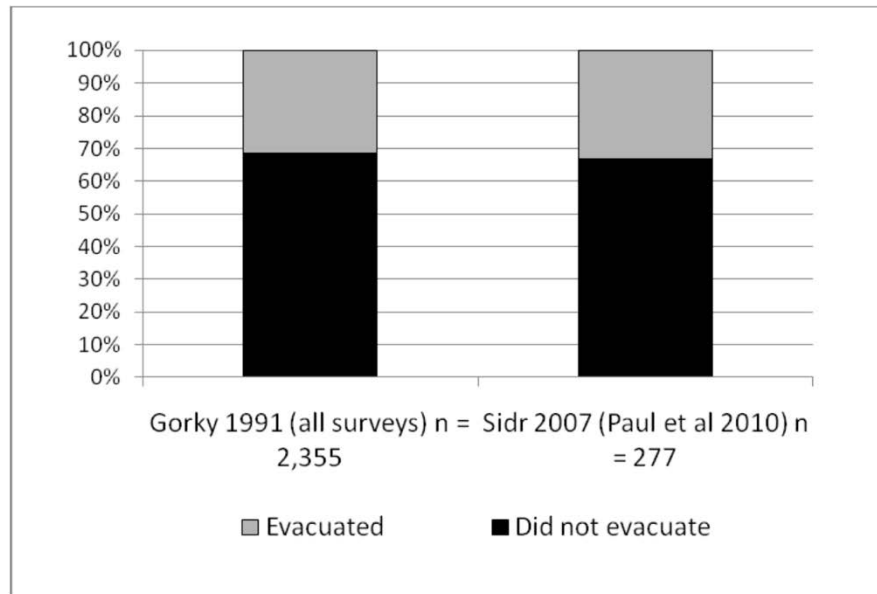
Figure 2.8 Overview of evacuation rates during cyclone Gorky and Sidr

Figure 2.8 The figure, also appearing in Penning-Rowsell et al. (2013: S49), was used to raise concerns around non-evacuation behaviour during the more recent cyclone strikes. According to the statistics presented, based on household survey data, only about a third of the respondents stated that they evacuated during the 1991 and 2007 cyclone strikes. To conclude, even though there were less fatalities, more people did not evacuate in the 2007 cyclone than in the 1991 cyclone.

These evacuation numbers were also comparable with the government's estimations around the whole coastal residential area (Paul et al. 2011; Paul 2014). Additionally, relatively few of the people who evacuated went to the cyclone shelters (see fig. 2.9). Similar concerns were raised by various authors, but explained by different reasoning including shelter availability, location, or socio-normative constraints (Penning-Rowsell et al. 2013; Mallick 2014; Ahsan et al. 2016).

Many of these publications were case studies in the 2011 Foresight initiative, investigating the potential future scenarios of immobility in a climate changed world (e.g. Paul et al. 2011; Penning-Rowsell et al. 2013). The findings encouraged a more comprehensive understanding of people's decision-making in relation to environmental immobility in this geographical area. This was supported by the research results pointing against the idea that people will move away from, or try to escape, environmental hazards as long as they have the means (e.g. early warning systems and cyclone shelters) to do so. The Foresight case studies (Paul et al. 2011; Penning-Rowsell et al. 2013), were

carried out in neighbouring areas to this doctoral study, which interestingly observed similar differences in the evacuation rates between the Barguna (e.g. study site *Dalbanga South*) and Bagerhat (e.g. study site *Gabtola*) districts (Penning-Rowsell et al. 2013; Ayeb-Karlsson et al. 2016).

Figure 2.9 Overview of evacuation rates to shelters and other buildings

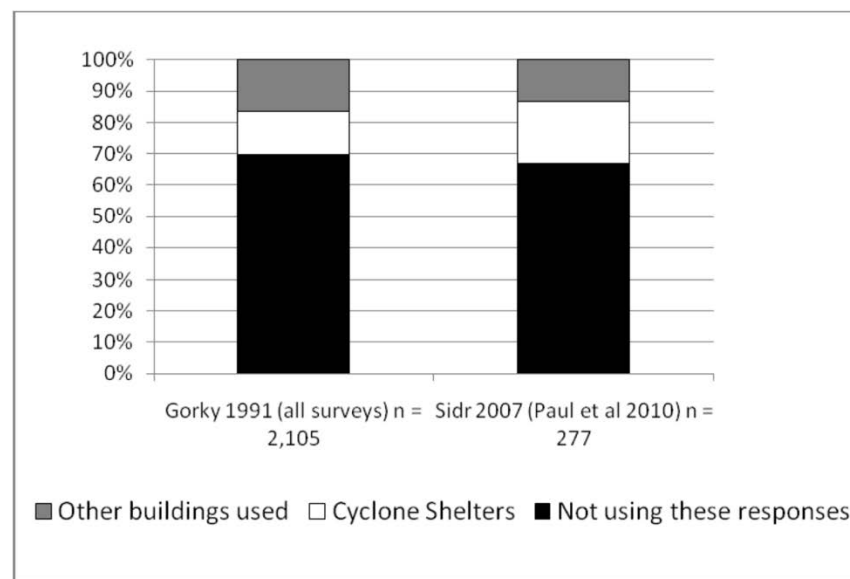


Figure 2.9 Building onto the concerns raised in Paul et al. (2010) and Penning-Rowsell et al. (2013: S50). The figure showed that (1) most people do not evacuate, and (2) out of the few people who evacuated, many did not choose to move to the cyclone shelters for different reasons.

More recent studies, published after the 2011 Foresight initiative, also confirmed the low evacuation rates. Ahsan et al. (2016) carried out a survey in Khulna division with 420 households investigating responses during 2009 cyclone Aila. Although almost all respondents (97 percent) received the warning messages, they found that only one out of four (26 percent) evacuated to the shelters. A brief review of the reasoning behind the decision to stay back, concluded that socio-economic background, livelihood mobility and access to evacuation tools (such as early warning messages and shelters) strongly influenced the evacuation rate (Asgary and Halim 2011; Paul 2012; Ahsan et al. 2016). Roy et al. (2015), concluded that it was mainly the lack or delay of warning messages that determined whether people decided to evacuate to the cyclone shelters or stay behind.

2.4 Summary

The literature review presented in this chapter identified various research gaps in the literature. These include a conceptual weakness of Trapped Populations, as well as potential dangers in its economic framing. The first conceptual gap ought to be addressed by carefully analysing the language, values and meaning (e.g. discourse) describing the concept. The second empirical gap requires research designed through methodological approaches that deeper investigate people's decision-making and behaviour in 'trapped' situations. There is to date, a lack of research studies investigating urbanely 'trapped' people, although the Foresight report, already in 2011, stressed that cities in low-income countries are of particular concern for such immobile populations. Nonetheless, no empirical urban studies referring to 'trapped' can be found to date.

Additionally, a common framing, based on the binary opposites between 'soft and hard research data' influences the academic climate change debate., The general assumption is that research in the area of environmental science or climate change needs to be quantitatively designed, and key findings presented through indexes, numbers and statistics (Adger 2010; Nielsen and D'haen 2014; Balwin 2016). The problem with this is that people's behavioural responses are rarely linear or straightforward, but instead strongly influenced by complex and seemingly unstructured feelings and emotions. This doctoral study aims to feed into this literature gap by taking a social science inspired approach. The selected research approach includes analytical methods commonly used within psychology, sociology and anthropology (ethnology) such as Q-methodology, storytelling interviews and discourse analysis. Another detected research gap in the literature is the lack of gender components while analysing people's vulnerability to climatic changes and disasters (see Begum 1993; Boyd 2002; Terry 2009). A gender lens can serve as a tool to comprehend the roots of the socio-normative or cultural restrictions that people face in their decision-making process. This is key to understanding why people choose to evacuate or not during a cyclone strike. Although it is registered that primarily women and children died in the Bangladeshi disaster strikes (Begum 1993; Cannon 2002; Jordan 2018), relatively few studies comprehensively investigate the reasons behind these differences in mortality. A gender framing of selected key concepts will therefore guide the analysis in the final empirical chapter.

Chapter 3

Research Methodology and Material

3.1 Introduction

The research design builds on a mix-methodological approach including quantitative and qualitative methods as well as primary and secondary research material. Each analytical chapter includes a detailed description of the selected research methods and material, while this chapter rather describes the empirical data collection, the fieldwork and ethical concerns.

The research builds upon fieldwork carried out in Bangladesh between the years of 2014 and 2016. The methodology includes Q-methodology, a survey questionnaire, participatory observations and a variety of qualitative storytelling sessions. These sessions were conducted with individuals, through in-depth interviews such as Livelihood History Interviews and key informant sessions, as well as in groups, through Focus Group Discussions and story telling games. The first set of fieldwork, between the years of 2014 and 2015, was purely qualitative (including three separate field visits of one to three months). The final fieldwork in 2016 introduced a quantitative element through a survey questionnaire and Q-methodology. The survey questionnaire helped identify discursive key attributes and background information of the people in each discourse group. These insights support an explanation of the reasoning behind the attitudes, meaning and values of each discourse group.

The fieldwork plan allowed for the qualitative findings to feed into the survey design and Q-statements. The research design also fulfilled a conceptual purpose of identifying existing discourses (or concourses) for the discourse analysis, while ensuring time to go back to test and deeper elaborate around them. The strength of the empirical data collection in this doctoral study is therefore found in (1) the repeated and longer fieldwork

visits spread over almost 3 year's time; (2) the combination of the qualitative and quantitative methods applied; and (3) the depth, richness and details of the collected data.

To give an example, one 20 statement Q-study, or one in-depth interviewing session, may be sufficient to detect some of the existing discourses. However, it also implies a risk of having to present rather general and shallow findings around each discourse. At the same time, to only conduct storytelling methodology, such as interviews and collective storytelling sessions, would potentially allow rich descriptions of the discursive realities. Nonetheless, it would make it harder to identify various competing and opposing discourses. To conclude, the long presence in field allowed for a sharp and on the spot Q-set design. The following chapter will further describe (1) the selected methodology; (2) the collected research material; and (3) ethical considerations of the study before moving on to the analysis.

3.2 Research methodology: Survey questionnaire and Q

During the first fieldwork visit in 2014 it became evident, particularly in the southern study sites, how the women did not feel comfortable interacting with male researchers. Female researchers would therefore conduct the female sessions and interviews to ensure everybody's comfort. The survey questionnaires were carried out by four enumerators, two female researchers who conducted the female participant surveys, and two male researchers conducted the male informant surveys. The enumerators all had an academic background in anthropology, and three out of four had previous experience in conducting survey questionnaires with some of the most influential research institutes in the country.

The whole research team attended a methodological and conceptual training prior to the fieldwork that introduced them to the study sites, research questions and concepts, as well as the storytelling methodology, survey design and Q-sorting activity. The final edits on translation and expressions used in the research sessions also took place during this training. The survey questionnaire was pre-tested in Dhaka for two reasons (1) to identify questions and expression that did not work or were wrongly comprehended; (2) for the enumerators to get familiar with the survey questions before the actual fieldwork.

This study applied a snowball sampling technique (also called chain-, referral- or respondent-driven sampling). Snowball sampling is a non-probability sampling technique where existing informants recruit future study subjects from among their acquaintances (Goodman 1961). There are advantages and disadvantages to the sampling technique, one of the advantages for example is that the method does not require any time-consuming planning. The survey informants were not randomly selected, but efforts were made to ensure that the initial set of informants included a diverse range of socio-economic, age and livelihood backgrounds. This helped broaden the selection of future informant backgrounds (Brace-Govan 2004; Kurant et al. 2011). The informant sample reflected the overall representation of socio-economic, religious, as well as age, gender, and livelihood backgrounds in the study sites. It was also ensured that different views from the whole village or settlement were captured. A respondent-driven sampling route was in this way planned before arriving in the village. This also helped avoid losing time on running back and forward in the villages (Heckathorn 2002; Browne 2005). In this way some of the weaknesses of the sampling technique were improved.

The combination of a short survey with the Q-sorting activity worked well (see appendix II). Q-methodology is a way to group people's subjective responses, through sorting-patterns of a set of Q-statements around a specific topic, so that it reflects the broader discourses. A common problem in many Q-studies however, is that the post-sorting interview does not result in enough details. The analysis then fails to explain why the participants sorted, or felt the way they did around the Q-statement(s). In an attempt to change this, and ensure more detailed insights in people's discursive reasoning, the Q-sorting activity was combined with a survey questionnaire and storytelling methodology. In a fairly experimental approach, the identified Q-narratives were linked to a separate empirical discourse analysis of qualitative storytelling data.

The experimental approach used in this doctoral study to analyse discourses, can be better understood by reviewing the conceptual creation, development and variety of techniques within Discourse Analysis (DA). Discourse studies or Discourse Analysis is a general term for a number of approaches used to analyse vocal, written, sign language or any semiotic (meaning-making) event. The main difference between text-linguistic analysis and discourse analysis is that DA aims to identify and comprehend the socio-

psychological characteristics of a person rather than the text structure. During the 1960s and 1970s, a diverse set of cross-disciplinary methods of Discourse Analysis appeared within the social sciences. These related to a wide range of disciplines such as sociolinguistics, psycholinguistics, semiotics and pragmatics. Many of the approaches favoured a more dynamic analysis of talk-in-interaction which set the foundation for discourse analytical techniques such as Conversation Analysis (CA). This was later expanded by Michel Foucault who pushed the concept beyond linguistics and towards structural patterns operating through the relationship between knowledge and power (Foucault 1972; Garfinkel 1974; Fairclough 1995).

This conceptualisation strongly influenced social sciences, in particular in Europe, although one can find a wide range of different analytical approaches working from Foucault's definition and theoretical framework. Others re-developed these ideas such as the creation of Sociology of Knowledge Approach to Discourses (SKAD). SKAD was established to deal with the micro-macro problem in Sociology, and to understand processes of the social construction of reality (Keller 2011; Berger and Luckmann 1966). Critical Discourse Analysis (CDA) on the other hand, which this doctoral study partly applies, is an interdisciplinary way of understanding language as a form of social practice. Discourse scholars working from a CDA approach generally claim that linguistic practice and social practice (non-linguistic) account for one another. Focus therefore ought to be on investigating *how* societal power relations are created and confirmed through the use of language (Fairclough 1995, 2003; Wodak 2001).

When it comes to Q-methodology, a mathematical factor analysis of subjectivity in a specific concourse (or discourse), it is important to understand how it differs from discourse analysed through (C)DA. Concourse theory within Q was a manifest by Stephenson (1978, 1986) to move away from mental concepts such as mind and consciousness. The definition of concourse as “[a] *universe of statements for [and about] any situation or context*” (Stephenson 1986: 44) however, shares many similarities with the discourse concept. According to Stephenson there is a concourse for every concept, wish and object when viewed subjectively. All the statements of a concourse can be understood as common [or cultural] knowledge. A concourse is also likely to be shaped and defined by a selection of statements spoken by the participants active in this universe.

The nature of the discourse to be sampled will therefore not become clear until it has been framed by particular research questions within a specific research study.

Another Q-concept marking out the difference from DA is social constructionism (instead of social constructivism). However, just like many of Stephenson's concepts it is essentially an umbrella term that summarises several different and rather separate ideas. Constructionism was described as a way to identify the social or sociological aspects of the meaning-making process through language. The focus moves away from personal knowledge and values, towards socially shared viewpoints or 'social facts', while constructivism rather focuses the attention on personal and psychological aspects of meaning construction (Stephenson 1986; Watts and Stenner 2012).

A disciplinary difference was made where Q is grouped with clinical psychology, while DA is more cultural sociology. This was partly because Q uses a statistical model to detect sorting patterns of Q-statements which in turn identifies the subjective attitudes, discourse- or factor groups. However, the critical depth of its analytical approach has been criticized. Q has been accused of generalising, lacking transparency, and for suggesting to present subjective data in a more objective way than other qualitative DA approaches (Brown 1996; Previte et al. 2007; Kanim 2000). A person's subjectivity within Q is, as Brown (1980:46) describes it, fundamentally a person's point of view. It is explained as behaviour of the type that we encounter during the normal course of the day. What a person feels, conceives and perceives is a reflection of this viewpoint (Brown 1980; Watts and Stenner 2012). The advantage of using Q in this doctoral analysis is that it supports the identification of such subjectivities in the study sites. The way Q systemises and quantifies the grouping of people's experiences or viewpoints will be useful. However, some of the nuances and complex links to contexts beyond the Q-statements, that DA of language captures, are lost. It is important to remind oneself that a Q-analysis is topic, group and time specific. The captured Q-viewpoints only make sense in relation to these elements.

To expand beyond some of these potential weaknesses the doctoral analysis will attempt an experimental approach of combining Q and CDA. Several Q-scholars have used Q as a method of discourse analysis in the past. This includes Addams and Proops (2000),

Dryzek (1990, 1994), Stainton-Rogers (1997) and Stenner (2008), where Dryzek has been the most prominent in applying a framework of DA within Q. The conceptual understanding of discourse within Q however, is potentially more narrow and general than discourse within (C)DA. This is because discourse is a special case of the former, or it relates to a specific group or topic. Kaufmann (2012), another doctoral study combining Q and DA, describes his approach as '*complementary methods for executing Q-methodology*' which is based on ethnographic work. This combination is favourable according to some scholars, as Q opens up possibilities to include qualitatively analysed data sources in a statistical analysis. In this way, it widens the opportunity to shift the analysis from a specific individual narrative to complex and contradictory discursive viewpoints of collective groups (Jacobson and Aaltio-Marjosola 2001; Previte et al. 2007; Zografos 2007).

This combined methodological approach proved to be useful for the Q-narratives of each discourse group. The informant background captured in the survey helped identify key attributes of the people reproducing each discourse. Clear gender, age, livelihood and educational differences were revealed for each discourse group with the support of the survey questionnaire. These characteristics facilitated the connections between the discourse groups and the storytelling session material.

Each survey took about an hour to conduct, and each enumerator aimed to finish N=15 surveys per study site (e.g. N=62 surveys per study site or N=248 surveys in total). The questionnaires, kept to 10 questions per survey (see appendix II), were designed to capture a quantitative understanding of people's evacuation and migration decisions (see table 3.1). The surveys were structured in two parts; the first part focused on the informant's background, and was kept the same in all four study sites. The second survey part focused on cyclone evacuation decisions in the three coastal study sites, and migration decisions in Bhola Slum. Previous migration history was also included as a part of the informant background and recorded in all four study sites. After the two survey questionnaire parts the last part included the migration or evacuation Q-set. Two separate Q-sets were therefore introduced in the urban and coastal study sites presenting either Q-statements around migration or evacuation decisions.

Table 3.1 Overview of survey respondents

Study site	Female	Male	Total
Dalbanga South	31	31	62
Mazer Char	31	31	62
Gabtola	31	31	62
Bhola Slum	31	31	62
Total	124	124	248

Table 3.1 The table shows the total amount of survey questionnaires conducted in this study as well as a breakdown of how many of them were carried out with women and men, and the balance between the three coastal study sites (e.g. Dalbanga South, Mazer Char and Gabtola) and the urban Bhola Slum site.

There is no single correct way to create a Q-set. A Q-set may be compiled based on theoretical grounds, from re-occurring events, or for experimental purposes to fit into the specific requirements of an investigation. Many Q-articles also tend to be rather vague about the nature of their design describing it as a straightforward process. In this doctoral Q-study, 100 statements or quotes describing prominent (im)mobility narratives were pulled out from the qualitative story-session transcripts. In urban Bhola Slum, the statements described migration and non-migration behaviour, while the statements from the coastal study sites related to evacuation and non-evacuation behaviour. The 100 statements were then grouped into themes, storylines and narratives that appeared to be re-occurring. In Bhola Slum for example, several narratives described how people's (im)mobility interlinked with the social network in the settlement, while the research sessions in the coastal study sites had captured intense discussions around women's specific evacuation (im)mobility. The original plan was to extract 100 statements per study site in the coastal area. However, it became evident in the statements thematic grouping that the overall narrative and topics described were very similar. The similarity was to the very extent that some quotes were the same although they had been recorded in different study sites. This is not very surprising as two of the study sites are located next to one another with constant in and outflow. People living on Mazer Char island

sometimes use Gabtola village as an arrival port when they cross over the river to mainland.

The statement sampling process continued by making sure that each Q-sample presented a good coverage and balance of the concourse. A good sample must be broadly representative of the overall opinions in the concourse, while presenting a balanced set of statements. This does not imply that half of the statements need to be negative (con) and the other half of them positive (pro). Balance has a wider meaning, which is to ensure that the statements are not biased towards a specific opinion or viewpoint. It is important that a few statements from each thematic group are selected. This way, the patterns of several statements being sorted in a similar, or different, way can help increase the analytical nuances and support the summary of each discourse group's collective storyline. Each statement was read out loud to make sure that it was a good Q-statement. In the case that a statement would risk being confusing smaller edits on wording (not context or meaning) were made to them.

A good Q-statement is clear and simple so it does not create any confusion. Technical or complicated language is therefore not suitable. It is also important that each statement provides the participant with one meaning. Q-statements should not be double-barrelled. If a statement presents a Q-participant with two or more propositions, meanings or qualifications it will be impossible for the researcher to know which one(s) the participant is agreeing or disagreeing with. For example, let us take the hypothetical statement '*A person needs commitment and compromise to be able to migrate*'. If a participant disagrees with the statement, one cannot know if (s)he agrees with the suggestion that it requires commitment, but disagrees with the suggestion that it requires compromise. Other problematic phrasing involves words such as *regularly* or *because*, or negatively structured items. For example, the hypothetical statement '*I do not find the cyclone shelter safe*' is confusing (due to the I do not), while '*I find the cyclone shelter unsafe*' is straightforward and easy to agree or disagree with. A good Q-sample should provoke and invite a range of different reactions, while holding onto minimal research assumptions around what reactions they will create and why (Brown 1980; Watts and Stenner 2012). The Q-samples were reviewed by colleagues at the University of Sussex. Their comments led to further changes of the statements. This was also done in Bangladesh with the field

team. The English statements were evaluated with the research team to make sure they made sense. After they had been translated, another field preparation session involved re-translating the Bengali into English to make sure to avoid translation shifts.

The Q-sorting activity presented Q-statements of attitudes to the participants (see table 3.2). The statements were framed to gather an understanding of people's subjective attitudes in relation to (im)mobility decisions, or evacuation in the rural area and migration in the urban settlement. Q-methodology can support in capturing the discursive socio-normative knowledge and behaviour of people in a specific place, or within a specific topic area. The methodology provides a 'science of subjectivity' that clusters individuals according to how their subjectivities reproduce a shared discourse (Stephenson 1953). Subjectivity in this way supports an exploration of the meaning, value and importance people assign to ideas (Woods 2010). In other words, subjectivity is how one understands oneself in a social context, or what it feels and means to a person to exist in a place, space, time and relationship (Morales and Harris 2014:706). When grouping the subjectivities together, a shared way of structuring and understanding the world, a discourse, is presented and can be identified as a discourse group (Dryzek 1998; Morinière and Hamza 2012).

In other words, instead of an assemblage of people, Q-methodology enables the grouping of people according to subjective characteristics that are constructed over time according to social roles, socio-economic background, age, education, gender, cultural experiences, identity processes and more. The influence of such social constructions result in flexible and changeable groups. The captured subjectivity of a Q-participant should therefore be considered as registered in a specific moment, and in relation to a specific issue. It is therefore likely that the same participant involved in another Q-study related to a different topic (or same topic at a different time) would sort the Q-statements differently, and position him or herself in another Q-factor or discourse group.

Table 3.2 Overview of Q-sets and statements

Statement number	Q-set Evacuation (conducted in Dabanga South, Mazer Char and Gabtola)	Q-set Migration (conducted in Bhola Slum)
1	Early warning messages are crucial to our survival.	I could get evicted tomorrow.
2	I am afraid someone will steal my belongings.	The riverbank erosion forced us to move here.
3	One can never know whether you will reach the shelter safely.	My health issues do not allow me to migrate.
4	Women are not safe in the shelter.	I sacrificed my honour in the struggles here.
5	If people in the village told me to evacuate I would go.	Things would have been better if I never moved here.
6	The outcome is not in my hands.	My family does not want to move.
7	I will not leave my valuables behind.	There have to be people I know in the new destination.
8	Something could happen to my family.	One is safer in Bhola Slum than where I was living.
9	People normally tell me when to evacuate.	Moving is not the right thing to do.
10	The disaster training is helpful.	If I could move from Bhola Slum I would.
11	I only go when I see others evacuate.	It does not feel right to abandon the people living here.
12	One should never leave their family behind.	The cyclones were the main reason why I moved here.

13	I know just how to prepare when I see an early warning flag.	Women live a better life here.
14	I feel safe after reaching the shelter.	Lack of land is the main reason why I cannot leave.
15	Evacuating is the right thing to do.	I migrated because education here is better.
16	I am afraid of dying in the cyclone strikes.	If I only had enough money to start up a new life elsewhere I would go.
17	I am better off because my valuables can be taken into the shelter	I am not mentally strong enough to move.
18	I never get the warning messages.	Bhola Slum is not a good place.
19	The shelter is not a place where I should be.	If I was offered a job elsewhere I would go.
20	There is no point going to the shelter.	One should never leave their family behind.
21	If the the warning signal is low the cyclone will not be dangerous.	It was unsafe where I was living.
22	Most people live too far away from the cyclone shelter(s).	If I leave I lose everything I invested in this place.
23	I normally get the warning too late.	This is not where I belong.
24	There is not enough space for everybody in the cyclone shelter.	People I knew in Bhola Slum told me to come here.
25	Nobody wants to leave their belongings behind.	My place is here.
26	My place is at home.	If others would decide to move so would I.
27	You cannot trust warning messages from people coming from other villages.	I thought my living conditions would improve after I migrated.

28	God decides who lives and dies.	I am afraid something may happen when I get to the new destination.
29	An unmarried woman should not go to the shelter.	The outcome is anyways not in my hands.
30	You can tell from the storm whether the cyclone will be strong.	I would like to return to my home district.
31	Some people are not allowed into the shelter.	Job opportunities played an important role in our decision to move here.
32	Lack of time is the main problem.	I am unhappy here.
33	Terrible things may happen to you in the way to the shelter.	People here in Bhola Slum would not like it if I left.
34	When a volunteer tells me to evacuate I will.	My indebtedness does not allow for me to go.
35	It is wrong for a man to evacuate and leave his wife behind.	Improved healthcare is why we decided to come here.
36	The cyclone can rip the shelter a part.	I am caught in a bad circle.
37	It is better to die at home than in the shelter.	It did not turn out like I had hoped last time so why should I move again.
38	It does not feel right to leave the house.	I would jump on the next bus if I only had enough money for the ticket.
39	I am afraid something may happen in the shelter.	My husband needs to be the one deciding whether we stay or go.
40	People depend on natural warning messages.	People told me I should migrate.

Table 3.2 The table gives an overview of the 80 Q-statements included in the two separate Q-sets. The Q-sets were carefully designed as coverage, balance and language is key to an effective set. The cyclone evacuation Q-set was conducted in the three neighbouring coastal study sites, Dalbanga South, Mazer Char and Gabtola, while the migration Q-set was used in Bhola Slum.

The translation from English to Bengali was carried out in such a way that the statements perceived similar meaning and value through the wording. The Q-statements were read out to the participants in Bengali to avoid potential sensitivities around illiteracy. The decision to read the statements instead of having the participants reading them was based on previous field-experiences. It is fairly common in the study sites that people cannot read or write. This way negative feelings, such as shame or embarrassment, leading to reluctance towards the sorting activity were avoided. The facilitating researcher also did not need to worry about offending people by asking whether they were able to read the statements cards, or face participants claiming that they could read them but rather ending up randomly sorting symbols on a grid. The communication also allowed people to react and openly express their feelings towards a statement, while pre-sorting the cards into agreement, neutral and disagreement piles. This is an important element in making sure that the sorting activity truly captures the viewpoints, feelings and attitudes of the participant.

The Q-grid was carefully selected ensuring that it was well-suited for a 40-statements Q-sort. A shallow grid offers greater opportunities to identify smaller differences at the extremes than a steeper grid, but it can only be used when the participants are highly familiar with the research topic (Watts and Stenner 2012). Brown (1980) suggests an 11-point (-5 to +5) distribution grid for Q-sets numbering 40-60 items. The forced-choice distribution forces participants to assign a specific number of Q-statement into each ranking value, while a free distribution does not. A free distribution may appear to give the participants more freedom, but in reality people are faced with a whole load of additional decisions that ultimately make no difference to the extracted factor groups (Carroll 1961; Block 2008; Watts and Stenner 2012). Brown (1980:267) for example proved that a Q-set of only 33 Q-statements, faced with a nine-point (-4 to +4) forced-choice distribution, leaves the participants with roughly 11 times more sorting options than there were people in the world.

The factor analysis of each Q-set was carried out based on study sites. The Q-sorts from Bhola Slum (N=62) were analysed separately as they presented a separate set of Q-statements. The coastal Q-set was both run through PQ Method as a whole (N=186) and then separately (N=62 x 3) based on study sites.

Q-methodology offers a few strengths in relation to its ability to capture discourses: (1) the Q-sorting activity is participant-led and seeks to rank the views, attitudes, and subjective reality of people, while avoiding a situation where researchers can test pre-conceived ideas; and (2) the Q-sorting activity heavily depends on participant feelings around agreement and disagreement. In other words, there are lower participant assumptions for what may be perceived as the ‘right’ or ‘wrong’ answer (Watts and Stenner 2005). This however certainly does not mean that Q in any way is completely free of researcher influence.

3.2 Research methodology: Qualitative storytelling sessions

Storytelling methodology is an open-narrative interviewing approach allowing space to construct stories without unnecessary interruption. Leading or closed questions should be avoided as cultural and social values are captured within the storyline (Hodge et al. 2002; Kasper and Prior 2015). The method has been widely used to empower vulnerable groups, such as women, children, immigrants and medical patients (Overcash 2003; Davis 2007; Rodriguez 2010). The methodological approach is an effective way to ensure rich and informative discursive data, well-suited for a discourse analysis. It can be difficult to capture power relations and socio-normative patterns, as people generally tend to be ‘blind’ to them. People also often say one thing but do another. Practices or socio-normative behaviour are often rather captured in between the lines of a story.

Personal narratives allow for the storyteller to choose what stories to tell, and who’s discursive reality to describe. A story selection is generally not random, but represents a deeper meaning, and can give important insights in the inter-social and subjective decision-making process. People use stories to position themselves, and to justify their behaviour. In this way, storytelling is a methodological window into the subjective space available to the subject (Pfahl and Wissener 2007; Bell 2010; Ali 2013).

A broad variety of storytelling sessions were carried out in the study sites, including in-depth interviews, such as Livelihood History Interviews, Key Experience Sessions and Key Expert Interviews, as well as group sessions and games, such as Focus Group Discussions, Collective Storytelling Sessions and Resettlement Choice Exercise (see table 3.3 and appendix I).

Table 3.3 Overview of storytelling sessions¹⁶

Method	Description	Year	Sessions	Female	Male	Total
Livelihood History Interviews (LHI) (builds upon Ayeb-Karlsson et al. 2016)	Individual in-depth interviewing sessions focusing on livelihood changes, environmental stressors and shocks, as well as on people's experiences of them.	2014-2016	65-70	8	8	16
Focus Group Discussions (FGD)	Focus Group Discussions on cyclone evacuation, disaster preparedness and migration experiences. Carried out in groups of 15 to 25 participants.	2014-2015	8	60-100	60-100	120-200
Key Expert Interviews (KEI)	Individual key expert interviews with 'expert'-informants on specific topic areas such as early warning systems, women empowerment and disaster trainings	2014-2016	25-30	8	8	16

¹⁶ The second stage of the empirical discourse analyses, after identifying the discourse groups through Q, included a textual analysis of the storytelling transcripts generated from the storytelling methods included in this table. These storytelling extracts complemented the Q-discourse groups by providing explanations, narratives and descriptions of people's discursive reasoning. A selection of extracts from these storytelling methods are presented in analytical Chapter 5 and Chapter 6.

	The respondents include village heads, community leaders, NGO focal points and managers of infrastructural processes and buildings, such as shelters, electricity, and financial schemes.					
Resettlement Choice Exercise (RCE) (builds upon Kloos and Baumert 2015)	Collective game sessions around mobility, movement, migration and relocation choices and values. Carried out in groups of 20 to 30 participants.	2014-2015	4	40-60	40-60	80-120
Collective Storytelling Session (CSS)	Collective storyline creations around cyclone, evacuation and migration stories. Fully open ended, and narrated, after being presented with different storyline characters. Carried out in groups of 15 to 25 participants.	2016	8	60-100	60-100	120-200
Key Experience Sessions (KES)	Individually repeated interviews around cyclone and migration	2016	24	4	4	8

(builds upon Experience Sampling Method e.g. Koro-Ljungberg et al. 2008; Csikszentmihalyi and Larson 2014)	experiences where the re-visitation of a story allows for it to be adopted, modified or further explained over time. The idea of separate interviewing sessions builds upon the hypothesis that people remember experiences differently, or have different feelings and emotions towards a memory, depending on time, place and state of mind.					
¹⁷ Total			134-144	180-280	180-280	360-560

Table 3.3 The table gives an overview of the different storytelling methods conducted in the study between the years of 2014 and 2016. As illustrated a balance between female and male informants was strictly maintained. This was necessary to assure a comfortable and relaxed conversation. The open and unstructured nature of the group sessions, where people would come and go, allowed for sensitive topics to be discussed. However, women for example, would usually stop talking or leave if men would try to join in a female session.

The informant selection of the qualitative storytelling sessions, in particular for the in-depth interviews, differ from the survey and Q-participant selection criteria. These informants were willing and interested to participate in longer and repeated interviewing sessions. Trust was established between the researcher and respondent through repeated visits and interviews. This facilitated a deeper insight into the existing discursive reality

¹⁷ The amount of sessions and informants vary as the storytelling sessions and interviews are difficult to estimate due to their open and unstructured nature. People come and go during the group sessions, while the individual interviewing sessions get interrupted at times and picked up later.

and the current socio-normative structures in the locations. The intimate researcher-respondent relationship also disarmed the interviewing situation. Pre-constructed stories are also often deliberately delivered to development workers in Bangladesh to ensure a part in the relief distribution. The fact that the informants were made aware of the researcher's objective and focus from the start lowered the risk of collecting inaccurate data (Polanyi 1982; Nadiruzzaman and Wrathall 2015; Ayeb-Karlsson et al. 2016).

The selected respondents from the coastal study sites had all experienced the more recent cyclone strikes, and some of the elderly informants were even able to recapture the 1970 Bhola cyclone. Most of the informants in the urban settlement had migrated there from Bhola Island as a result of the cyclone strikes and riverbank erosion. The value of returning for follow-up interviews was that it allowed for clarifications of the interview transcripts, and expansion or further elaboration around specific stories and topics. The interview transcripts played an important role in supporting the 2016 fieldwork's methodological design. When the situation allowed, the earlier individual informants from the 2014-2015 fieldwork were included in the survey questionnaire, the Q-sorting activities and the final storytelling sessions. These overlaps facilitated the factor group analysis and ensured detailed descriptions of the identified discourse groups.

The collective game sessions supported in disarming sensitive topics, provided insights into normative boundary areas, and delicate issues that otherwise may not have been addressed. These sessions were kept open and unstructured to allow narrative space for the storytelling process. To give an example, in one the female collective storytelling sessions where the women create storylines around cyclone evacuation, sexual harassment and rape in the cyclone shelters were mentioned, as well as honour and suicidal ideation (CSS DLF 2016).

The games also eliminated rumours around relocation or forced evacuation plans in the urban slum. It was an effective way of assuring that the respondents felt safe and comfortable in the discussions, while revealing valuable insights of discursive meanings and socio-cultural values without offending someone by bluntly asking a question. The researchers also kept a field diary for reflexive logs, reflections and participatory observations. In the group sessions, body language, behaviour and practices were

recorded. These notes were an important supplement to understand and identify power relations, transgressions of social roles or discursive attitudes. An interruption, or correction, of a storyline goes beyond verbal language, and may instead take place through a look, or the action of entering and leaving a space. The level of participation was moderate, where the researcher balances between outsider and insider roles (Spradley 1980; Clark et al. 2009).

3.3 Ethical reflexion and positionality

This doctoral study was carefully aligned with the ethical guidelines of the two research institutes involved (University of Sussex post-2015, and United Nations University pre-2015). Official ethical clearance at UNU-EHS and University of Sussex took place before any empirical research began. My disciplinary background in International Relations and Ethnology, proved to be useful during the fieldwork, and for the data collection. I either conducted the research sessions myself with a translator, or they were carried out under my guidance. Ethical workshop training before the fieldwork around ethical considerations and informant sensitivity was also mandatory for all involved researchers.

The more extensive fieldwork visits consisting of a larger field-team, were all carefully coordinated as a part of the doctoral work from beginning to end. This included everything from the selection of field researchers, to the research session design, the informant selections and interactions. Before leaving for field, a week-long training workshop was carried out in Dhaka. The training was set up as a knowledge-sharing platform covering research tools, concepts, methods, translation, avoidance of extractive research, informant rights, specific ethical considerations and sensitivities. Once in field, each fieldwork day consisted of a briefing and debriefing session before and after the fieldwork visits. These scheduled sessions, also mandatory, helped detect and address ethical issues as they arose. The discussions here included everything from gender sensitivities, dealing with offensive behaviour, ensuring the wellbeing of informants, signs of post-traumatic stress disorders, to difficulties in translation or understanding of the conceptual framework. The field team meetings were organised as roundtable sessions that encouraged everybody to speak. During the briefing sessions, points of particular importance to the study site were addressed. The debriefing sessions started off

with everybody sharing '*today's amazing discovery*', and then moved on to more sensitive ethical considerations or difficult encounters.

Informants were briefed, provided with a general description of the research, and intended use of the research material before the interview sessions began. Consent forms in Bengali were also discussed before and after the interview sessions (see appendix III). The informants were notified that they had the full right to drop out at any time of the research, and that they could exclude particular parts, or the interview as a whole if they wanted to. A consent form was signed by all the informants, including the group sessions. Those who were illiterate, and could not sign, were given the option of signing it with the assistance of the facilitating researcher.

Communicative informants were overrepresented in the individual interviews due to the open-ended narrative structure, but serious considerations were put into the informant sampling process. The researchers made sure that all the selected informants' conditions and experiences generally reflected a majority of people living in the villages. The informant sample aimed to present a balance of age, gender, ethnic groups, religious background, livelihood activities and socio-economic background of the area. The field schedule included time to walk around and converse with several people in the area before the selection process and interviewing sessions began. Many of the individual informants were identified during the group sessions.

The interview sessions took about two-three hours each, and were spread out over several days to avoid response fatigue. The researchers still faced some minor challenges with informants dropping out due to other commitments, livelihood activities and time constraints. The fact that the interviews were spread out over a couple of days helped minimise drop outs (Ayeb-Karlsson et al. 2016). Ethical considerations around compensation, and how to best deal with the informants' investment of time, was taken very seriously. During the first interview sessions, the field-team tried to compensate people taking part in the research sessions with a kilo of sugar. Sugar is fairly expensive and sometimes difficult to find in the rural areas of Bangladesh. This proved to be problematic as it created tension in the villages around who did not receive sugar and who should not. Additionally, the research team was perceived as a carrying out poverty relief.

Purchasing snacks, fruits and beverages for each research session instead and leave it open for everybody to consume proved to be more successful.

The in-depth interviews followed a topic checklist rather than questions. Narratives and storylines around these topics left the respondents in charge of the interview structure. The translation into Bengali of research topics and concepts were critically discussed before the fieldwork and revisited during the debriefing sessions. I understand enough Bengali to spot misunderstandings during the interview sessions and in the transcripts. The large amount of time spent in the country and in field also created a deeper level of trust, and allowed for better comprehension of socio-cultural structures, behaviour and norms. At times, I stayed in the rural villages for weeks at a time, cut off from infrastructural structures such as electricity or running water. This on one hand created difficulties in recording the research, batteries for example would run out of charge, but it also disarmed my presence in the villages. This deeper trust resulted in valuable insights into the societal structures, orders and values.

The interviews were carefully transcribed and translated from Bengali into English. Most of them transcribed by a native Bengali speaking anthropologist, and others jointly by the interpreter and myself. The first set of transcriptions was carried out while in field to avoid knowledge-gaps. Once back from the field, the transcripts went through another three to four sets of corrections to ensure translation accuracy (Ayeb-Karlsson et al. 2016). Questions or uncertainties that could not be clarified by the researchers and interpreters were brought back to the informants. Next to the ethical considerations described in this section, the doctoral study went through the standard ethical review of the University's Research Governance Committee (URGC) at University of Sussex.

Positionality aims to shed light on the differences in position, privilege and power in the research, or fieldwork, in relation to gender, class, ethnicity, socio-economic or demographic background for example. These are all traits that will influence the researcher and participant relationship. The key concepts of power and knowledge in this doctoral study, acted as a reminder to maintain an awareness of how they relate to the research design. I would like to think that I actively tried to maintain an attitude where power was shared between researchers and participants, while knowledge was being

produced in our interactions. However, the researcher's power position in relation to the production of knowledge should not be ignored. My identity, experiences and knowledge are constructed within European 'modernity', and will therefore affect what I see, and how I think. I experience the world as a White European woman raised in a European culture. I will never be able to fully remove these social and cultural differences, and instead ought to embrace these differences while challenging my thought processes. Some of the differences felt easier to overcome by seeking communalities (Said 1978; Spivak 1988; Manning 2018). For example, I found similarities within the struggle of being a young woman in a patriarchal social system controlled by men.

My aim was to maintain an open dialogue around power relations in the research process, but this will not immediately eliminate local or global power relations. They can be observed in the special treatment some researchers received in Dhaka, as well as in the interviewing battles between people from the city and village. Throughout the research I tried not to use terminology describing the research participants as 'Others' for the simple reason that language creates, reproduces and establishes power positions. This however does not imply that I am blind to their vulnerability. I simply felt that using humane words, such as people, supported in shifting the narratives to reproduce a more positive and empowering language.

I also felt that terms describing a knowledge sharing, such as informants, projected a positive idea of information or knowledge transference taking place. The framing of this doctoral research supported reflexivity by encouraging me to constantly elaborate around power relations and representational practices. I kept asking myself who produces or owns this knowledge? What kind of knowledge is this? (Brewis and Wray-Bliss 2008; Manning 2018). This approach perhaps allowed for deeper elaborations throughout the research sessions and affected the way that I was communicating with people in the context of the research questions. It soon became clear to me that the 'knowledge' being conveyed to me by research, policy and action experts in Dhaka, did not align well with the narratives of people's experiences in the study sites.

I chose to base my analysis on the narratives and stories of the people, and not the experts. I must however still question whether I can represent the lived experiences of vulnerable

people in a village or slum of Bangladesh facing climatic stress, and whether I can facilitate the process of letting them tell their own stories (Said 1978; Spivak 1988; Manning 2018). I therefore tried to position myself as ‘the Other’, and continuously reminded myself to openly face my insecurities around power and ethics. I was clearly the Other here, and my feelings around this Otherness could perhaps help me understand some elements of the marginalisation and vulnerability that my informants were facing. I found myself questioning my identity, my lived experiences, and our relationships, together with the research participants. I took a step back and tried to acknowledge how our relationship was changing and transforming over time, while asking myself why.

In the beginning of the research process, I was made aware of how my approach to carrying out field research was different from some of my colleagues. Knowledge and information was often described and understood as an entitlement of the educated, the rich and the privileged. In the early research sessions, for example I realised that some colleagues would skip the female group discussions, or they would ask fewer questions, or take a limited amount of notes during these sessions. When asked why, they claimed that women did not understand, or have any information to share. This proved to be rather problematic at times, I was confronted with the question of how to solve this issue effectively in a respectful manner.

On the one hand, I felt as if my role was partly to maintain an open dialogue around these gender perceptions, on the other hand I found it difficult to not get offended. These perceptions around knowledge were not only structured around gender. People also pointed out how I should only interview those who had attended school. Those who were educated, or who were involved in local politics, were the ones who would know. This made me realise that my understanding of knowledge was fairly wide and unstructured. I also became aware of the fact that as an outsider I was allowed more space to question and criticize the knowledge of local experts, while my local research colleagues did not have the same liberty. The local hierarchies did not apply to me, which resulted in research opportunities as well as constraints. As an international researcher I was expected to know everything, and to provide a fix.

This position, or the assumption that I will speak, interpret data (or interpret others speaking), and write out the results, is nothing but a position of power. I must therefore acknowledge that I am currently writing from an extreme position of privilege. It would be pure ignorance to turn a blind eye to the fact I can do this because I was born into a wealthy European country, and 'rewarded' with a passport that supports open movement. The same privilege allows me to carry out this doctoral study at a prominent university in the UK. I was reminded of this privilege every single day in Bangladesh when people asked me how they could do what I did. I had no clear answer to this question.

Simultaneously however, I was a young woman working as a project manager, in a project setting where many of the team members were men finding it hard to work with a female supervisor. This came to influence my researcher experience, as my day to day work was filled with ambiguity and confusion around this combination. On the one hand I was given special treatment due to my foreign nationality. People came to see me and were eager to talk to me when I first arrived in the study sites. I rarely struggled to find informants for the research sessions, and I was unfamiliar to some of the struggles my local research colleagues expressed having experienced in field. On the other hand, I represented a potential danger. People would call me in Dhaka and clarify that there must have been a mistake as they wanted to talk Sir Ayeb-Karlsson. People often 'naturally' assumed that I was a man. When I went to the shop with one of my male colleagues, my change was handed back to him although I was the one who had paid in the first place. My male colleagues were told not to follow my guidance, or to ignore a 'woman's command'. I was accused of setting a bad example in the villages as my presence may create dangerous temptations. The young village women could suddenly give up having children and leave their homes in favour of a job elsewhere. I wondered how the local women dealt with these attitudes and soon noticed how my female research colleagues would make up stories to create a safer working environment. Their descriptions included husbands and children back in Dhaka although I knew they were single. I realised that these stories helped them escape certain stigmas.

Some of these experiences created difficulties in carrying out my work, and added on to personal frustrations. Each time I felt offended I tried to remember to take a step back, and ask myself what made me feel this way, why I felt this way, and how I would describe

the feelings. I also constantly reminded myself of how many of the women I spoke to each day would have loved to have the opportunity to face some of these battles.

Over the years, and throughout repeated field visits some of these narratives changed. People started expressing how I, and we as a team, were different. None of the other visitors were willing to stay the night, or even for lunch or a tea. The other visitors generally promised financial and practical support that they could not keep, while all I repeated was that I would try my best to share their stories. Through this attitude shift, the descriptions around what I represented as a woman also changed. People started referring to how I had made an effort to dress respectfully in traditional Bengali cloths, and how I was learning or spoke some Bengali. I think I decided to locate myself in field to deeper explore the researcher and participant power relationship. My 'normal' presence in a way disarmed some of my position, or reduced my privilege while creating a more neutral power relationship. It was when I started staying overnight in the villages that I became more of a human being to them. People would come to watch me eat and sleep. I drank a lot of tea and coffee, they concluded, and I seemed relatively harmless. The lack of privacy and personal space was frustrating at times but worth it. It opened up a space to negotiate identity constructions and further develop our relationships.

3.4 Summary

This doctoral research is based on a mixed-methodological approach where quantitative and qualitative methods helped gathering primary and secondary data which was analysed through an experimental discursive framework. The secondary material is based on literature referring to 'trapped' populations, while primary empirical data on discursive attitudes around (im)mobility was gathered in Bangladesh between the years of 2014 and 2016. The fieldwork here included a broad combination of methods; a) in-depth interviews helped establish a first idea of the discursive values in the study sites, b) a survey questionnaire and Q supported in identifying the discourse groups, and c) storytelling sessions enhanced the understanding of the discourses, including their functions, rules and boundaries. Ethical reflections and considerations were incorporated into each and every element of the research process. Official standards and guidelines

were strictly followed, and critical reflexive discussions, reviews and diaries were kept throughout the doctoral research.

Storytelling methodology inhabits another refreshing ethical element by providing ‘case studies’ with a human voice. It is a powerful methodology that can have a great impact on the research, and empowering influences on the informants. Social science at times seemingly tries to disconnect itself from the humanities although the discipline is humanistic, dealing with human lives and their potential improvement. Storytelling methodology allows for a deeper understanding of the subject and the subjective attitudes within the research area. The method also supports to establish an intimate researcher-informant relationship, and results in great empathy for the informant and their living situation. A positive consequence of such a researcher-informant connection is its potential to change societal status quos (De Carteret 2008; Ali 2013). Storytelling findings can in this way put pressure on social- and political actors to create policy frameworks, or action plans that better protect people. The methodology allows people a voice of their own. Before entering the land of empirical stories, we first need to dissect our own academic narration around (im)mobility and ‘trapped’ populations. To fully understand the power of language, and how policy can influence the everyday life of people in Bangladesh, we begin in the following chapter with the written word, and our discursive understanding of (im)mobility within academia and climate policy.

Chapter 4

The conceptual birth and troubled teenage years of Trapped Populations: A discursive review of the textual use of ‘trapped’ in environmental migration studies¹⁸

4.1 Introduction

Numerous references to Trapped Populations¹⁹ have emerged since the concept’s recent arrival within migration studies. As a lens through which to identify those people most affected by climate change, the notion of being ‘trapped’ is potentially useful to expose the social inequalities of impacts and variations in coping or adaptive capacity. However, considerable ambiguity surrounds both the foundation of the concept and the normative implications of its use. A shortage of critical analysis means that in most instances vagueness serves to disguise any precise determinations of who may be ‘trapped’ and what they may be trapped by. Humanitarian efforts intended to provide support to involuntarily immobile people may therefore risk being ineffective or imposing externally formed ideals surrounding mobility onto vulnerable populations.

Notions of involuntary immobility (e.g. Carling 2002; Lubkemann 2008) and references to peoples’ inability to escape environmentally risky and vulnerable locations (e.g. Blaikie et al. 1994; Thiede and Brown 2013) have existed in the literature on environmental migration for some time. However, the ground-breaking UK

¹⁸ This chapter was accepted and published online on the 12th of February 2018 in *Ambio* as a separate peer-reviewed journal article. References made to the chapter should therefore be cited accordingly: Ayeb-Karlsson, S., Smith, C.D. and Kniveton, D. (2018). A discursive review of the textual use of 'trapped' in environmental migration studies: The conceptual birth and troubled teenage years of Trapped Populations. *Ambio* 47(5): 557-573 <https://doi.org/10.1007/s13280-017-1007-6>

¹⁹ Trapped terminology: In this chapter, Trapped Populations is used to refer to the existence of the concept (noun); ‘trapped’ is used to refer to when a person is labelled as being thus (adjective); and trapped is used to refer to the action of being rendered immobile in such a way (verb).

Government's Foresight Migration and Global Environmental Change (MGEC) report (Foresight 2011) was first to identify such people as Trapped Populations. In doing so, the report recognised the complex relationships between human activity and the environment, while suggesting that impoverished people may end up 'trapped' at the hands of a double set of risks that render them not only more vulnerable to environmental threats, but also less able to escape or move away from them. A trilogy of potential mobility outcomes resulting from environmental change was proposed which distinguished between migration, displacement, and immobility.

Perhaps because of the elevated research status of the UK Government, both Foresight and the report's 'Lead Expert Group' (six white male professors at UK universities), Trapped Populations rapidly gained a solid foothold within the contemporary literature on environmental migration.²⁰ Numerous scholars subsequently used the term to refer to people deemed geographically 'trapped' in environmentally high-risk areas due to economic, legal, or social constraints upon their mobility. Indeed, the rate at which 'trapped' populations were being identified soon after publication of the report suggests that some researchers readjusted the focus of their work to find evidence for involuntary immobility. Although such efforts highlighted the potential plight of individuals affected by involuntary immobility worldwide, this surge of interest in 'trapped' populations occurred from a foundation wrought with ambiguity.

Trapped Populations has already been problematised by Black et al. (2013) due to the conceptual difficulty of identifying affected people²¹ and the concept's failure to

²⁰ The Foresight MGEC initiative was a major pioneering and comprehensive review of most empirical evidence at the time on the linkage between environmental change and migration. The unique involvement of top-ranked universities and well-known research institutes, all in all about 350 experts based in over 30 countries representing a diverse set of disciplines, was influential in giving the report its elevated status. The two main aims of the report, to (1) develop a vision for how future population movements until 2060 would be influenced by global environmental changes and to (2) identify and consider the choices and decisions that policy-makers needed to take to create resilient climate policies in an uncertain future (Foresight 2011:10), also in a way provided national governments and world leaders with a handbook on how to best 'manage and control' migration flows.

²¹ Also noted by Black et al. (2013:S36), "the notion of a 'trapped' population is not a straightforward one, in scientific terms, not least because it is as difficult to distinguish, either conceptually or in practice, between those who stay where they are because they choose to, and those whose immobility is in some way involuntary".

adequately address a person's 'right to stay' in a place that others may consider to be high-risk. The current academic definition of being 'trapped', proposed to be a possible (im)mobility outcome of the interactions between a person's need and/or desire to migrate and their ability to do so (Black and Collyer 2014b), also does not lend itself well to the empirical methods common to migration research²². However, launching into novel research without adequately accounting for the complex and multifaceted nature of immobility risks the imposition of externally formed ideals. To develop the concept in as cohesive and beneficial a manner as possible, we argue that it is important to explore both the roots of the concept and the way(s) it has been interpreted and applied in policy to date. A Critical Discourse Analysis (CDA) (e.g. Fairclough 1995, 2003) that focuses on the conceptual birth, development, and use of Trapped Populations is thus presented here to understand why the concept appeared when it did (Q: 4.1); explore how it has been shaped by environmental migration scholars to date (Q: 4.2); identify the different way(s) the term is already being used (Q: 4.3); and examine the potential for direct or inadvertent policy abuse/misuse of the concept in its current form (Q: 4.4).

4.2 Discursive narratives and key literature on climate change-induced migration²³

Although there are earlier references to the **environment as an important determinant of human mobility** (e.g. Wagner 1873; Durkheim 1899), during the twentieth century environmental explanations for displacement largely disappeared. It has been argued that this was a result of Western dichotomies that sought to separate nature and society (see Piguet 2013). At the hands of such division, scholars tended towards categorising the movement of people according to the various characteristics of the migrants, their motivations, origins, destinations, or duration of stay. From these characterisations,

²² It is, for example, difficult to capture someone's subjective feelings, emotions, and nuances around desire, aspiration and ability to move in a survey questionnaire or a Focus Group Discussion.

²³ **Bold** font is used in this section of the chapter to highlight those narratives that are being identified as having become discursive. This chapter refers to 'discursive narrative(s)' to highlight the ways that text and language create and reproduce discourses, as well as destroying and challenging them. A narrative or story becomes discursive when it is repeated or reproduced enough to becoming a norm, socially shared attitude, truth, or reality by people engaging in the discourse.

discursive narratives emerged that represented shared and accepted storylines seeking to explain migration, often in terms of binary opposites.²⁴

Migration has now taken its place as a common term within the climate change discourse (Piguet 2013; Baldwin 2016), after a long debate around if environment, environmental change, and thus climate change potentially influence migration patterns (see for example Reuveny 2007; Hulme 2011). Despite current recognition (UNFCCC 2015:§50), a key narrative across much of the literature is the idea that **migration, displacement, and immobility due to climate change will occur in a distant future** (Baldwin et al. 2014; Baldwin 2016).

Widespread denial of the immediacy of climate change-induced migration perhaps explains the scarcity of research that has isolated the role of environmental stress as a sole determinant of migration decisions. Instead, the environment is often described as one of multiple contributing factors. This is clearly evident within the academic discourse where an ‘alarmist’ depiction (Dun and Gemenne 2008; Gill 2010) of a **growing number of ‘environmental refugees’** (Myers 1997; Bogardi and Warner 2009) has been supplanted by a more sceptical **common recognition that migration is driven by various factors**, of which climate change impacts may be one (Kibreab 1997; Castles 2003; Black et al 2011a; Foresight 2011).

Efforts have long been made to **characterise the movement of people** according to the interactions imagined to be occurring between environmental stress, a person’s need/desire/willingness to be mobile, and the degree of control they can apply to their situation (e.g. Renaud et al. 2007; Black et al. 2013). Developing a better understanding of mobility decisions is important given the negative values that have been assigned to migrants and migration. Despite being critically analysed (e.g. Collyer 2006; McNamara 2007; Hartmann 2010) and problematised across disciplines (Said 1978, 1990; Anderson 1983; Bhabha 1994), narratives have emerged in recent years that frame **increasing**

²⁴ The term ‘binary opposites’ in this chapter refers to a situation where a pair (words, things or characteristics such as man-woman, body-soul, black-white, east-west, and rural-urban) are defined against one and another. The system was seen as a fundamental organiser of all languages and thoughts (Foucault 2000, 2002).

migration flows as a security threat (Weiner 1992; Smith 2007). Migrants are often described as a potential national security problem and emotively portrayed as an anonymous wave/tide/flood/stream of ‘Others’ moving across borders (Gill 2010; Piguet 2013).

A simultaneous discursive debate also took place in relation to the way environment-related moves were classified through terminology. The focus on ‘environmental refugees’ (e.g. El-Hinnawi 1985) that reached a crescendo in the 1990s was thus almost completely replaced by a **focus on ‘environmental migrants’**²⁵ by the advent of the Foresight report in 2011 (Foresight 2011; Piguet 2013). When paired with continued interest in the situations of those people affected, this semantic adjustment from refugees to migrants might not seem overly important. However, a body of literature has emerged that sees it as a discursive move away from narratives around a conventional need for international protection and towards the reproduction of terminology based around ‘climate justice’ (McNamara 2007; Lister 2014). While the notion of an environmental refugee shed light on the ‘climate debt’ held by northern countries, some argue that such **moral obligations were lost, and economic or political agendas better disguised, in the move towards ‘environmental migrants’** (Hartmann 2010; Felli and Castree 2012; Hyndman 2012; Methmann and Oels 2015).

Instead of being referred to solely in terms of their potential status as victims in need of protection (Morrissey 2012; Hunter et al. 2015), people forced to move by environmental factors were simultaneously described as **environmental migrants with individual adaptive agency**. This allowed scholars to link the discipline with ‘limits to adaptation’, ‘climate resilience’, and ‘social transformations’ (e.g. Folke et al. 2002; Adger et al. 2009;

²⁵ First suggested in the 1970s (e.g. Brown et al. 1976), the term ‘environmental refugee’ was the focus of much debate before being largely discredited on the basis of both the legal definition (UNHCR 1967) and the perceived multi-causal nature of migration (Foresight 2011). The definition of ‘refugee’, provided under the 1951 UN Convention relating to the status of Refugees Article 1A and amended by the 1967 protocol, requires a person to be fleeing a fear of persecution or violence, neither of which can be legally defined as occurring at the hands of the environment. In recent years, narratives criticising the reluctant use of ‘climate refugee’ have appeared. Particularly, in relation to certain geographic areas, such as the disappearing islands in the Pacific, and the melting glaciers in the Arctic (e.g. Maldonado et al. 2013; Bronen 2014; Dreher and Voyer 2015; Kelman 2015).

Pelling 2010) and placed a stronger focus on individual ‘decision-making and behavioural studies’ (Lu 1999; Kniveton et al. 2011).

Foresight (2011) highlighted that migration could be considered a successful adaptation measure. However, the theoretical model proposed by the report has been accused of moving away from the collective socio-environmental context that may have contributed to environmental displacement and towards a mind-set that focuses upon an **individual’s capacity or ability, and thus indirectly an individualised responsibility, to adapt** (Felli and Castree 2012; Baldwin 2016). Expectations were thus proposed to have changed **from socio-political or socio-economic transformations towards encouraging individual resilience**. However, if each and every one of us is responsible for our own capacity to ‘bounce back’, it becomes difficult to unravel what happens to those people who are incapable, unfit, or for other reasons do not manage to adapt, migrate, or escape (Felli and Castree 2012; Baldwin 2016). The quiet supposition thus appears to be that ‘maladaptive’ migrants will be left behind and become ‘trapped’, having failed in their individual responsibility to be resilient.

Reproducing normative adaptive narratives and defining who is adapting successfully or being resilient by pursuing the ‘right’ climate action **may lead to affected people ending up less supported or more vulnerable** than before (Cannon and Müller-Mahn 2010; Eriksen et al. 2015; Ayeb-Karlsson et al. 2016). An individualised responsibility to adapt also implicitly assumes that even if all occupants of a locale do not share the same access to financial resources, they will share the same social, cultural, and emotional state and thus aspire towards the same behavioural response. This assumption becomes particularly problematic when confronted with the seemingly illogical immobility of people exposed to critical environmental threats. By not adapting or becoming resilient in the manner defined as correct by some external actor, affected people may thus become subject to interventions intended to facilitate their reintroduction into resilient mobility, a process described by some commentators as tantamount to promoting the circulation of cheap labour and maintaining existing hegemony (Felli and Castree 2012; Bettini 2014).

Given the apparently fragile nature of the Trapped Populations concept and its position within already contested literatures on environmental migration and migration as

adaptation, this chapter seeks to further our understanding of the concept by critically analysing the different contexts in which the term has been used to date. If definitions of what constitutes a ‘trapped’ population are applied with too broad a brush, the rights of affected people could be threatened and existing inequalities and vulnerabilities further extended by placing the burden of adaptation on already fragile individuals.

4.3 Theoretical framework and methodology

Text and language can be used to highlight changes in knowledge, attitudes, beliefs, and values. To understand how text works to shape our social realities, one needs to understand the relationships between human actors, structures (e.g. language), practices (e.g. order of discourse), and events (e.g. texts). As social agents, people have the power to influence societal structures and practices, and support the establishment of relations and value between elements of texts (Archer 2000; Fairclough 2003). Although their actions are not entirely socially determined, they are constrained by biases and opinions.

Because social interaction is undertaken through the production and distribution of spoken and written words, an effective means of understanding shared narratives is the analysis of discourse (Foucault 1981, 2002; Fairclough 2003). People position themselves within these ‘collectively shared domains of statements’ (see Foucault 1981) according to their identity and ‘world’ of social relationships. As a result, a discourse represents the perceived and interlinked realities that people position themselves within, not an objective reality. Discourses can complement or cooperate, compete, contradict, or dominate one another (Foucault 1981; Fairclough 2003).

The dual pairs generated by binary opposites (Said 1978, 1990; Foucault 2002) lock people into discourses and divert them away from important societal factors such as the power relations behind the dichotomy (Foucault 1981, 2002). Binary opposites thus define social groups in terms of both their members and non-members. Those ‘Others’ are assigned characteristics not wished upon the collective ‘we’ so that meaning and value are given to who they are (Said 1978, 1990; Foucault 1981, 2002; Bhabha 1994). Critical text analyses must therefore consider not only what dichotomies exist and how they are described, but also the ‘Habitus’, or ways in which the author, or the reality being

described in the text, perceives and reacts to the social world around them (Bourdieu and Wacquant 1992; Fairclough 2003).

The analysis undertaken within this chapter seeks to detect different discourses around Trapped Populations that have emerged through the reproduction of different genres and styles to create shared realities, and critically acknowledges the power position of the relevant authors and their assumed ‘scientific hard-factual truth’ (Fairclough 1995, 2003). In this way, the CDA is not limited to the written words alone, but attention is drawn to the structure, meaning, and order of the described discourses.

Publications subjected to analysis were selected using online search tools *Web of Science*, *Google Scholar*, and the *CliMig* database (Piguet et al. 2017²⁶) to identify those that used the word ‘trapped’ in the context of migration-related environmental immobility at least once. This focus restricted the selected publications to those released ‘post-Foresight’ with an explicit reference to Trapped Populations.²⁷ Authors of such articles are proposed to have either consciously or subconsciously decided to reproduce the terminology that

²⁶ The CliMig database can be found at the following address: https://www.unine.ch/geographie/climig_database (last accessed 01.12.2017). For more information on the database see (<http://www.environmentalmigration.iom.int/projects/climig>).

²⁷ Those publications that referred to ‘trapped’ only in the bibliography did not meet the selection criteria. To maintain a focus on the linguistic development, changes of meanings, values, and narratives around Trapped Populations, publications containing only descriptive synonyms of being ‘trapped’ (e.g. ‘environmental immobility’ or ‘climatic involuntary immobility’) were not included in the analysis. The post-Foresight sampling used by this study was corroborated by the fact that repeated searches for appropriate references to being ‘trapped’ in academic publications from before 2011 showed no results referring to the concept. The report itself also does not contain any references to other publications that refer to the concept. The authors acknowledge that this selection narrows the analysis and excludes a wide corpus of literature referring to ‘involuntary immobility’ prior to Foresight, such as the research that followed Hurricane Katrina and Rita in the US (e.g. Elliott and Pais 2006; Stein et al. 2010; Thiede and Brown 2013, etc.). However, the decision to limit the analysis to literature referring to ‘trapped’ only is well in line with the selected methodology. Similarly, discourse analysis carried out on, for example, a specific debate/topic in mass media/policy (e.g. Gale 2004; Carvalho 2005; Boykoff and Boykoff 2007; KhosraviNik 2010) is better limited to articles published during this specific moment/area. This chapter does not aim to empirically investigate immobility per se, but to critically review the linguistic appearance and use of the concept Trapped Populations. The conceptual time of creation is important, since appearances of ‘new’ words and expressions in language generally take place for specific political, social, or cultural reasons.

²⁸ Wordle is an online ‘word cloud’ generator available at www.wordle.net. The tool is useful when carrying out a textual discourse analysis as the clouds are accompanied by a count list of repetitions of words in the specific text being analysed (as applied in Jorgensen 2015; Gardner 2017; Workshop by Robert Chambers IDS, Brighton, UK, March 2016).

Figure 4.1 Word cloud 1 has been generated from the full text of the Foresight MGEC (2011) report and is dominated by the words *migration*, *environmental*, and *change*. To enable more in-depth analysis, Word cloud 2 has been created using the same source text but is displayed with the words *migration*, *environmental*, and *change* removed. Larger font size of a word indicates greater prevalence within the text with non-conceptual words such as ‘the’, ‘by’, and ‘for’ removed.

To inter-discursively analyse each text (Fairclough 2003; Wodak 2011), careful attention was drawn to the following relationships:

- a) **Semantic:** Relations in meaning between expressions, words, sentences, and clauses over longer stretches of text such as reasons, consequences, and purposes, e.g. repeated descriptions and expressions of ‘trapped’ people as an *urgent problem* needing a *rapid solution*.
- b) **Grammatical:** Relations between morphemes, words, phrases, and sentences, e.g. references to ‘a’ trapped population or ‘the’ trapped population.
- c) **Vocabulary:** Patterns, re-occurrence, and co-occurrence between vocabulary, words, and expressions, e.g. trapped how? where? by what? or by whom?
- d) **Phonological:** Highlights or textual intonation through font style or size and the use of bold, italic, underlined, and quoted words, e.g. references to ‘trapped’ or “trapped”.

Each full text (minus references) selected for analysis was subjected to the following analytical procedure: (1) ‘word clouds’ were generated to gain an overview of key concepts, repetition of words, and discursive narratives; (2) text sections referring to ‘trapped’ were extracted for further analysis; (3) the discursive meaning and context describing Trapped Populations in each extract was analysed through the identification of semantic, grammatical, vocabulary, and phonological textual relationships (e.g. Fairclough 2003); (4) a short summary, including example extracts from the original text, was composed describing the discourse groups identified (see discourse group overview in Table 4.1).

Table 4.1 Overview of discourse groups

Authors	Year	Institutional affiliations during authorship	Type of publication	Cited Foresight report?	Author(s) linked to Foresight?	Number of times 'trapped' cited	Article keywords	'Word-cloud' keywords
Discourse A: Reproducing the Foresight narrative								
Black, R. Bennett, S.R.G. Thomas, S.M. Beddington, J.R.	2011	UK university and UK Government	Peer reviewed journal	Yes	Yes, directly (all either members of Foresight or the Lead Expert Group)	Whole = 5 Abstract = NA Title = 0	NA	<i>migration, environmental, change, drivers, people, global, high, low, economic, migrate</i>
Adger, W.N. Arnell, N.W. Black, R. Dercon, S. Geddes, A. Thomas, D.S.G	2015	UK universities	Peer reviewed journal	Yes	Yes, directly (all members of the Lead Expert Group)	Whole = 6 Abstract = 2 Title = 0	migration, environmental change, adaptation, governance	<i>risk, climate, economic, social, global, populations, policy, conflict, areas, growth, international</i>
Adger, N. Adams, H.	2013	UK university	Book chapter	Yes - not in relation to being trapped	Yes (one member of the Lead Expert Group)	Whole = 1 Abstract = 0 Title = 0	NA	<i>environmental, migration, risk(s), change, mobility, vulnerability, resources, economic, people</i>
Black, R. Arnell, N.W. Adger, W.N. Thomas, D.	2013	UK universities	Peer reviewed journal	Yes	Yes, directly (all members of the Lead Expert Group)	Whole = 13 Abstract = 1 Title = 0	environmental change, migration, extremes, mobility, displacement	<i>displacement, extreme, events, change, disasters, policy, vulnerability, change, economic, international, global</i>

Geddes, A.								
Penning-RowSELL, E.C. Sultana, P. Thompson, P.M.	2013	UK university	Peer reviewed journal	Yes	Yes, indirectly (case study authors)	Whole = 6 Abstract = 0 Title = 0	hazards, Bangladesh, impacts, evacuation, migration, focus groups	<i>people, work, evacuation, migration, land, areas, hazards, affected, coastal, population</i>
Affi, T. Milan, A. Etzold, B. Schraven, B. Rademacher-Schulz, C. Sakdapolrak, P. Reiff, A. van der Geest, K. Warner, K.	2015	Consortium of German research organisations, primarily UNU-EHS	Peer reviewed journal	Yes -not in relation to being trapped	No	Whole = 4 Abstract = 1 Title = 0	human mobility, rainfall variability, food security, climatic stressors	<i>migration, households, rainfall, research, food, variability, adaptation, human, livelihoods, migrants, insecurity, case, study</i>
Gray, C. Wise, E.	2016	US university	Peer reviewed journal	No	No	Whole = 2 Abstract = 0 Title = 0	NA	<i>climate, migration, effects, migrants, data, specification, households, results</i>
Milan, A. Ruano, S.	2014	UNU-EHS and Guatemalan Ministry	Peer reviewed journal	Yes	No	Whole = 5 Abstract = 1 Title = 0	climate variability, migration, Guatemala, food security, mountain	<i>food, migration, households, research, climate, change, production, variability, local, data, patterns, survey</i>
Warner, K.	2014	UNU-EHS	Peer reviewed journal	Yes - not in relation	No	Whole = 9	adaptation, climate change, vulnerability	<i>migration, hh(s) (abbreviation of</i>

Afifi, T.				to being trapped		Abstract = 0 Title = 0	y, migration	household(s)), rainfall, food, research, livelihood(s), variability, security
Discourse B: Expanding the Foresight report								
Geddes, A. Adger, W.N. Arnell, N.W. Black, R. Thomas, D.S.G.	2012	UK universities	Peer reviewed journal	Yes - not in relation to being trapped	Yes, directly (all members of the Lead Expert Group)	Whole = 12 Abstract = 1 Title = 0	international migration, internal migration, environmental change, governance, security, displacement, protection	migration, environmental, change, governance, states, international, people, move, displacement, economic
Geddes, A.	2015	UK university	Peer reviewed journal	Yes	Yes, directly (member of the Lead Expert Group)	Whole = 11 Abstract = 1 Title = 0	migration, climate change, security South Mediterranean	migration, environmental, change, effects, people, governance, climate, security
Humble, A.T.	2014	Earth League, Sweden	Journal article	No	No	Whole = 8 Abstract = 1 Title = 1	NA	border(s), migrants, trapped, security, access, countries, migration, dangerous, protection, populations, areas, forced, safer
Sow, P. Marmer, E. Scheffran, J.	2015	German universities	Peer reviewed journal	Yes - not in relation to being trapped	No	Whole = 1 Abstract = 1 Title = 0	West African migration, climate change, Morocco, racism	migrant(s), migration, climate, country(ies), development, change, social, destination, origin, immigrants
Black, R.	2014 (book)	UK universities	Book chapter	Yes	Yes (one member of the Lead	Whole = 68	NA	trapped, populations, move, migration,

Baldwin, A.	2016	UK university	Peer reviewed journal	Yes	No	Whole = 1 Abstract = 0 Title = 0	climate change, migration, race, neoliberalism, affect	<i>migration, climate, change, affect(ive), white, racial, discourse, future, race, neoliberalism, state, biopower</i>
Baldwin, A. Gemenne, F.	2013	UK and French universities	Book chapter	Yes - not in relation to being trapped	No	Whole = 2 Abstract = 0 Title = 0	NA	<i>migration, climate, change, research, empirical, change-induced, social, policy, political, environmental, refugees</i>
Felli, R. Castree, N.	2012	UK university	Peer reviewed journal	Yes	No	Whole = 2 Abstract = 0 Title = 0	NA	<i>environmental, migration, report, social, adaptation, change, global, neoliberal, state, individual, policy</i>

Table 4.1 Shows an overview of the textual discourse groups identified.

NA no article keywords were specified for a particular publication.

* A situation where full digital text was not available for use in the creation of a ‘word-cloud’. In such an instance, a ‘word-cloud’ was created from the excerpts taken from the article due to their relation to Trapped Populations.

4.4 Analysis: The Foresight report

To create a baseline for comparison, our analysis begins with the discourses presented in the Foresight report. Inter-discursive analysis of the semantic relationships found in the text reveals three clear narratives, summarised below.²⁹

²⁹ Based on keywords from text extracts 4.1 to 4.11.

Extract 4.1³⁰

The impact of environmental change on migration will increase in the future. In particular, environmental change may **threaten** people's livelihoods, and a traditional response is to migrate. **Environmental change will also alter populations' exposure to natural hazards, and migration is, in many cases, the only response to this.** For example, **17 million people were displaced by natural hazards in 2009 and 42 million in 2010** (this number also includes those displaced by geophysical events).

(Foresight 2011:9)

Extract 4.2

- *The complex interactions of drivers can lead to different **outcomes**, which **include migration and displacement**.* In turn, these types of outcomes can pose **more 'operational' challenges or more 'geopolitical' challenges**. There are **powerful linkages between them**. **Planned and well-managed migration** (which poses **operational challenges**) can **reduce the chance of later humanitarian emergencies and displacement**.
- *Environmental change is equally likely to make migration less possible as more probable.* This is because **migration is expensive and requires forms of capital, yet populations who experience the impacts of environmental change may see a reduction in the very capital required to enable a move**.
- *Consequently, in the decades ahead, millions of people will be unable to move away from locations in which they are extremely vulnerable to environmental change.* To the **international community**, this '*trapped*' population is likely to represent just as important a **policy concern** as those who do migrate. **Planned and well-managed migration** can be one important **solution** for this **population of concern**.

(Foresight 2011:9)

Extract 4.3

Cities in low-income countries are a particular concern, and are faced with a 'double jeopardy' future. Cities are likely to **grow in size**, partly because of **rural–urban migration** trends, whilst

³⁰ All formatting represents the original publication appearance except **bold** text that has been applied to draw attention to keywords supporting the inter-discursive textual relationship. In the case where bold was used in the original text it has been turned into italic.

also being increasingly threatened by global environmental change. These **future threats will** add to existing **fragilities**, whilst **new urban migrants** are, and **will** continue to be, particularly vulnerable. Yet this report **argues against trying to prevent rural–urban migration**, as this could lead to **graver outcomes** for those who are **trapped in vulnerable rural areas**.

(Foresight 2011:10)

Extract 4.4

In summary, the key message of this report is that migration in the face of global environmental change may not be just part of the ‘problem’ but can also be part of the solution. In particular, planned and facilitated approaches to human migration can ease people out of situations of vulnerability. In light of this, international policy makers should consider the detailed evidence from this report in a range of areas, with the following of particular priority:

1. **Many of the funding mechanisms for adaptation** to environmental change are currently under discussion. It is imperative that these mechanisms are **not developed in isolation from migration** issues and, furthermore, that the **transformational opportunities of migration** is recognised.
2. Whilst the **twin challenges of population growth and environmental change will pose an increasing threat to urban areas in the future**, cities in many countries are **already failing their citizens**. Action is **required before the situation becomes irreversible**, to **build urban infrastructure** that is sustainable, flexible and inclusive.

The cost of inaction is likely to be higher than the costs of measures discussed in this report, especially if they reduce the likelihood of problematic displacement. Giving urgent policy attention to migration in the context of environmental change now will prevent a much worse and more costly situation in the future.

(Foresight 2011:10)

Extract 4.5

Proactively facilitated and managed migration should lead to **improvements** in each of the **future scenarios**, as it **will reduce** the chances of populations being trapped and/or being displaced in circumstances which **raise wider geopolitical challenges**. A **proactive approach** can also **capitalise on and maximise the benefits** from migration, **building resilience and transforming adaptive capacity**.

(Foresight 2011:17)

Extract 4.6

Reduced options for migration, combined with incomes threatened by environmental change, mean that people are likely to migrate in illegal, irregular, unsafe, exploited or unplanned ways. People are also likely to find themselves migrating to areas of high environmental risk, such as low-lying urban areas in mega-deltas or slums in water-insecure expanding cities.

(Foresight 2011:13)

Extract 4.7

Those with **lower wealth** or **capital** face a double set of risks from future environmental change: their **reduced level of capital** means that they are **unable to move away** from situations of increasing environmental threats; yet, at the same time, this very **lack of capital** makes them even more vulnerable to environmental change. These populations are likely to become **trapped** in places where they are vulnerable to environmental change.

(Foresight 2011:14).

Extract 4.8

Migration in the context of environmental change is likely to lead to increased rural–urban migration and city expansion. Cities will face a ‘double jeopardy’ future, in which this challenge is multiplied by increasing threats from environmental change. Yet the third challenge is perhaps the most critical, the fate of the new migrant arrival to the city, who will often be in the most vulnerable situation.

Cities will face compound future challenges, which will reinforce each other or ‘multiply’ the consequences. These challenges are:

1. ***Cities are growing in terms of their populations as a result of natural population growth and increased rural urban migration.*** For example, Dhaka’s **population increased from 1.4 million in 1970 to 14 million in 2010, and is expected to rise to 21 million in 2025;** similarly, Shanghai’s **population increased from just over 6 million in 1970 to over 16 million in 2010 and is expected to rise to just over 20 million in 2025.** In a ‘business as usual’ scenario this **expansion alone would represent a huge set of operational challenges for cities,** including housing provision and land-use planning, **particularly** for those in **low-income countries.**
2. ***Cities are extremely vulnerable to future environmental change, particularly those located in vulnerable areas, such as drylands, low-elevation coastal zones or mountain regions, where inundation, reduced availability of water resources and threats to health will variously be experienced.*** For example, the **populations living in urban floodplains in Asia may rise**

from 30 million in 2000 to between 83 and 91 million in 2030, and then to 119–188 million in 2060 according to **different scenarios of the future**. The **future expansion of cities needs to be understood in the context of this increasing risk**.

(Foresight 2011:19).

Extract 4.9

*Policies to avoid populations being trapped in **conflict** situations, where they are in turn vulnerable to environmental change.* Where there is an **endogenous and cyclical relationship** between **poverty, resources, conflict** and the inability for people to move voluntarily (with humanitarian emergencies and displacement a likely outcome), an important set of **policies** should focus on **reducing conflict** and **tension** associated with **natural resources**. Environmental change is likely to affect these **natural resources**, potentially reinforcing this endogenous cycle; there is thus a clear requirement for **policies to address** the impact of environmental change on the **resource–conflict relationship**.

(Foresight 2011:21)

Extract 4.10

Conflict and **poverty** are two **contributors to vulnerability within ‘poor and high-risk environments’**, which include drylands²¹¹. **Although** there is **disagreement** as to **whether environmental change leads to conflict**²¹², it is **clear that communities** which are **subject to increasing environmental variability** and **disruption** are **likely to become poorer**. The important point is that **poverty lessens their ability to respond in a planned and controlled way to threats**, whether they be **ecological, conflict related, economic or demographic** (prevalence of disease). This **includes planned migration**, which is **often an appropriate response to these threats**, but likely to be **curtailed by low capital** (social, political or economic) and **conflict**.

(Foresight 2011:73)

Extract 4.11

As noted in section 9.3.6, the **timing for actions relating to adaptation funding is important**. The **urgency** of the issue **in respect to cities** requires particular emphasis. Whilst trends of **global environmental change and population growth** are **likely to multiply the challenges faced by cities in the future**, it is important to recognise that these **challenges will add to existing fragilities**. **Many cities in low-income countries** are **already failing** in important respects, and **citizens, especially low-income groups such as migrants, are already extremely vulnerable**. **Future trends** are set to **exacerbate these challenges**, and **action is required before it is too late**.

(Foresight 2011:198-199)

4.4.1 Discursive narrative 1: Climate change, threats, and challenges are on the way

The first narrative feeds into the climate-changed future perspective (Baldwin 2016) outlined previously and describes the notion that a situation of **threats** and **challenges** will emerge in the near **future**. The recurrence of expressions such as **decades ahead** and **future threats**, and the use of future tense places the problem ahead of us.

The **challenges** described are proposed to include **population** movements, and **cities grow(ing) in size** due to **new urban migrants** or **rural-urban migration** and refer to **millions of people** being affected. The picture painted is much in line with the Peace and Security narrative (e.g. Said 1978; Barnett 2003), where a moving or stagnated mass of people is considered a security **threat**. However, instead of being presented as a threat to national security, the **challenge** is described as a global problem that merits a global solution by its nature as a **concern for the international community**. The binary opposites that define ‘us’ and ‘them’ thus expand beyond the national scale to identify a shared consensus that, for example, **cities in low-income countries are a particular concern**. ‘The Others’ identified by the report are thus expected to originate in impoverished locations where the disorder is anticipated to start.

4.4.2 Discursive narrative 2: Global well-managed policy planning is the solution for safety

The second narrative furthers the depiction of an imagined global ‘we’ by mention of **the international community** for whom ‘trapped’ populations represent an important **policy concern**. The report describes **planned** and **well-managed** migration as the **action** this ‘community’ should pursue but includes no critical reflection with regard to who is a part of this group and who is not.

The binary opposites are clear with the disorder, **challenge**, **concern**, or **threat** on one side that must be **managed**, **planned for**, **reduced**, and **avoided** by the other. Order and safety is achievable through **proactive** and **well-managed** policy planning. The solution is not to **prevent** migration but to **facilitate**, **plan**, and **manage** its occurrence. People becoming displaced or **trapped in vulnerable rural areas** would lead to **graver**

outcomes or **raise wider challenges**. The **rural-urban** relationship portrayed by Foresight offers another binary opposite and occupies a central role in the report's descriptions. People are referred to as **trapped in vulnerable rural areas** with managed migration to urban areas presented as a possible solution. Although the report acknowledges that people may end up trapped in cities, this concern is placed alongside climate change as occurring in the future.

One reading of this narrative (whether intentional or not) is that it reproduces Western dichotomies where rural places are considered vulnerable and primitive problem areas, with urban areas portrayed as modern and holding the keys to success. This portrayal possibly relates back to the authorship of the report or at least the repetition of a western narrative around place, space, and culture. The narration of a safe, managed, and successful rural-urban migration locates the solution in an urban context and acknowledges the migrant as a potential adaptive agent. A picture is thus painted of an individual **building resilience and transforming adaptive capacity**, a situation that separates them from a homogenous moving mass.

4.4.3 Discursive narrative 3: To stay safe economic progress and resource protection

The third narrative identified links a proactive response to the achievement of longer-term gains. The report describes vulnerability in economic terms as a **lack of capital and wealth** so that poor people are trapped in **low-income countries**. Their **reduced level of capital** makes them **unable to move away** from environmental threats in a simple linear fashion. People cannot therefore end up trapped so long as they are able to buy a bus ticket to a new location. However, the assumed simplicity of this linear economic relationship ignores the potential for social and psychological factors to trap people in dangerous locations alongside, or instead of, financial constraints.

Despite the report's promotion of the financial benefits of managed migration, a critical perspective raises the possibility of another side of the story. Indeed, a proactive approach to managing migration may serve to **capitalise** upon and **maximise** the **benefits** of migration for other, larger-scale actors. As a result, the narrative also warns of the dangers of not applying the sort of proactive policy solutions described. This critique feeds into the binary nature of disorder and order. If *we*, **the international community**, do not apply

the **proactive policy** approach of **planning** and **managing** the migration flows, *we* will be facing a world filled with **conflict** and **tension** over **natural resources**. The report emphasises that the **relationship between poverty, resources, and conflict** will trap **poor** people into **conflict situations** unless there are international **policies to avoid** and **address** this issue.

4.5 Analysis: Selected publications

At the time of this review, 21 publications (18 articles and three book chapters) had been published post-Foresight containing the word ‘trapped’. Four of the publications have single authors with nine, including the three book chapters, having dual authorships. The complete set of contributors stands at 40 authors, of whom 11 are women. 33 authors belong to European institutes, including 17 in the UK and 14 in Germany. Because a concept must be described numerous times to become discursively repetitive, those texts with more references to ‘trapped’ were subjected to greater discursive scrutiny. Of the total, 14 articles and one book chapter refer to the ‘trapped’ more than three times (Table 1).

Using the Foresight report as a comparative baseline, three discourse groups were identified: publications reproducing the Foresight narrative (Discourse A); publications reproducing *and* expanding the Foresight narrative (Discourse B); and publications opposing the Foresight narrative (Discourse C). Additionally, within discourse groups A and B notable differences are evident between publications authored by the Foresight Lead Expert Group and those by scholars who are not Foresight report authors.

4.5.1 *Discourse A: Reproducing the Foresight report*

Discourse A consists of nine publications reproducing the narrative conveyed within the Foresight report. Four articles (Black et al. 2011b, 2013; Adger and Adams 2013; Adger et al. 2015) include at least one Lead Expert Group author, one is by authors linked to a Foresight-commissioned case study (Penning-Rowsell et al. 2013) and four did not include Foresight authors (Milan and Ruano 2014; Warner and Afifi 2014; Afifi et al. 2015; Gray and Wise 2016).

The publications contributing to Discourse A by reproducing the Foresight narrative do so in different ways. Three articles authored solely by Lead Expert Group members (Black et al. 2011b, 2013; Adger et al. 2015) refer to ‘trapped’ in a manner much in line with the both the original Foresight description and the three discursive narratives identified above. **Populations** are thus portrayed as a future **critical risk** needing to be solved by supporting people to **migrate**, an action representing a **well-documented** way to **effective(ly) adapt**.

Questions of why people will become ‘trapped’ are strongly narrated around economic language where **immobility** is **cause(d)** by **people losing their assets**, **falling into poverty traps**, or suffering from **a lack of capital**. Although differences between **financial**, **social**, and **human capitals** are acknowledged, the discursive relationship between capital and immobility is strongly **economic** and focused on **financial capital**. For example, the narrated relationship of **fear** around immobility is framed in terms of a **fear of what would happen to property or assets left behind**. **Vulnerability** is also linked to **wealth** so that **trapped populations** are seen as being **vulnerable without the ability or resources to move**.³¹

Extract 4.12

The analysis also highlights that low mobility is **critical**— that **populations** may be, in effect, trapped in places where environmental **risks** are increasing (Black et al 2013). The **Foresight analysis demonstrates** how **migration** is a well-documented and often **effective adaptation** to environmental **risks** (Black et al 2011b).

(Adger et al. 2015:3)

Extract 4.13

Individual disasters and events also **negative economic impacts**—Hallegatte (2012) emphasizes the prospect of **people losing their assets** and **falling into poverty traps**. **A lack of capital** at the individual level is, indeed, **one of the principal causes of immobility** and potentially trapped populations (Black et al 2013).

³¹ Based on keywords from text extracts 4.12 to 4.14.

(Adger et al. 2015:4)

Extract 4.14

However, without minimising the significance of the ‘right to stay’ even in places that are vulnerable to environmental extremes, it is also clear that **ability to move** is broadly **correlated with wealth, level of capital (financial, human, social)**, the availability of places to move to, and **fear of what would happen to property and assets left behind**, so that broadly speaking, **poorer people are generally less able to migrate** even if they wish to do so. In turn, **vulnerability** to extreme environmental events is **widely recognised to be inversely correlated with wealth**, such that **poorer people face a double risk**: they are more vulnerable to disasters, but less able to move away from them. This lack of choice for vulnerable populations is recognised in both behavioural accounts of vulnerability and by the pressure-and-release structural models of vulnerability (see Wisner et al., 2004). Fig. 3 therefore depicts **the two-dimensional space for populations** where **mobility potential and wealth are generally positively** correlated and where **vulnerability to stress is inversely correlated to wealth for individuals**. **Trapped populations** are **vulnerable** to stress but **without the ability or resources** to move.

(Black et al 2013:S36)

Most of the additional articles belonging to Discourse A are case study based. When referring to who is ‘trapped’, **households** and **communities** rather than individuals are identified. Little in the way of critical reflection is found on who is a part of the household/community, or whether the entire unit of people are ‘trapped’. The **vulnerability** and **immobility** described are strongly **economic(ally)** determinant but also focus on **livelihood, income, assets, and food security**. This shift in language links back to the **worse-off household** Foresight narrative. Whole **HHs** or **communities** are thus described as being at **risk of becoming** or are **trapped due to lack of resources, assets and means, extreme poverty, or substantial economic losses**.

The nature of economic losses and their link to climate change are described by all articles in this discourse group in the same terms as the Foresight report. It is an event that will occur in a **near future**. Throughout their conceptual reproduction, this group makes frequent references to the **Foresight report** and articles by Foresight lead authors (e.g. Black et al. and Adger et al.). Trapped Populations and references to involuntary

immobility consistently appear in quotation marks (e.g. “trapped”, “immobile”, and “trapped populations”).³²

Extract 4.15

Similarly, **worse-off households** might be prevented from sending migrants following shocks to their **income** and **assets**, thus representing “trapped populations” (Black et al. 2011).

(Gray and Wise 2016:556)

Extract 4.16

The **Foresight report on Migration and Global Environmental Change** shed light on two relatively understudied issues in the literature on climate change and migration. First, it emphasized the importance of studying the specificities of mountain areas in order to understand the nexus between environmental change and migration in those areas (Kollmair & Banerjee, 2011). Second, it showed that **future environmental change** is equally **likely to lead** to an increase or a decrease in migration flows. In this context, those who might be willing but unable to move (“trapped”) **will** be extremely **vulnerable** (Foresight, 2011). However, the **Foresight report** did only refer to few empirical studies on **trapped populations**. This empirical article aims at presenting data and insights on four Guatemalan mountain **communities** whose **populations** are exposed to the **risk of becoming “trapped” in the near future** in a place where they are extremely vulnerable to climate change. In fact, **in case of future natural disasters** or climatic conditions which **threaten the sustainability of local livelihoods**, it is expected that **migration will be vital for the survival of these populations**.

(Milan and Ruano 2014:61-62)

Extract 4.17

The review above gives details of the changing hazardousness of Bangladesh; what we see is a decline in mortality over time but a **continuation of substantial economic losses** and in some cases a **substantial threat to food supplies**. What, then, are the related migratory effects? Have those parts of the population who have suffered from these disasters – and **will no doubt suffer again in the future** – sought to move away from the areas affected, or are they in some way “immobile” or “trapped” where they currently live (Foresight, 2011)?

³² Based on keywords from text extracts 4.15 to 4.21.

(Penning-Rowsell et al. 2013:S49)

Extract 4.18

For example, in the case of Bangladesh, we have the outliers of **households** that do not even need to migrate, as they are already well off, whereas there are other **households** in **extreme poverty** and **vulnerability**, for which migration is not even an option, as they **lack the means** to move and are forced to stay '**trapped**' *in situ*.

(Afifi et al. 2015:13)

Extract 4.19

In Vietnam, **HHs** that **suffer from poverty** and **do not benefit from the economic boom** are **often left behind (trapped populations)**.

(Warner and Afifi 2014:7)

Extract 4.20

Migration is a major **risk management**/'coping strategy' to **address unfavourable economic** and unexpected environmental conditions, including the local implications of rainfall variability. Longer dry spells and frequent droughts are a 'very important' migration reason for 39% and 36% of **HHs**, respectively. **Landless, low-skilled** and **poor HHs** (depending on rain-fed agriculture for both their **livelihoods** and **food security**) are the most sensitive to rainfall variability. Also often **trapped due to lack of resources**.

(Warner and Afifi 2014:8)

Extract 4.21

The final profile of **HHs** includes those that have been described as '**trapped populations**' in the literature: **HHs** that **do not possess the assets** necessary to migrate, even to cope with **food insecurity**, or who cannot access migration options. These are often **landless or land scarce HHs** in very **poor areas**. /.../ **For trapped HHs or populations**, repeated environmental shocks and stressors can continue to **erode their asset base and increase their food and livelihood insecurity**.

(Warner and Afifi 2014:13)

4.5.2 *Discourse B: Expanding the Foresight report*

Consisting of a further nine publications, Discourse B both reaffirms the Foresight narrative and offers some expansion of the concept. Four of the nine publications have at least one Foresight Lead Expert Group author (Geddes et al. 2012; Black and Collyer 2014a, b; Geddes 2015), while five publications did not include Foresight authors (Humble 2014; Bhatta et al. 2015; Sow et al. 2015; Adams 2016; Hillman and Zieglmayer 2016). Although the publications do feed into the Foresight narratives, two clear expansions have been identified:

Expansion of the future threats and challenges – even darker and more urgent

The Foresight narrative around a climate-changed future of challenges is built upon to provide more details of what darkness lies ahead. The challenges and threats described in Foresight Discursive Narrative 1 are intensified throughout the publications (Geddes et al. 2012, Humble 2014; Geddes 2015; Sow et al. 2015).

The subjects portrayed as being at risk of becoming ‘trapped’ are described as the **people, migrants, and immigrants** that constitute the **tens of millions of people** or **growing number of people** that are expected to pose **a governance challenge** to nation **states**. Binary opposites such as we and them, **conflict** and **protection**, or **danger** and **security** are strongly reproduced. An alarmist rhetoric also describes **hostile situations** where **migrants are trapped on the ‘wrong side’ of the border unable to access legal protection or basic social necessities**.

The linguistic reproductions used within Discourse B present some changes in the use of Trapped Populations: (1) instead of being rendered immobile in environmental high-risk areas, people are described as trapped within **states**, e.g. **trapped in their own countries or in transit countries** and **due to border security**; (2) people are narrated as **trapped in situations** rather than geographic areas; (3) instead of lacking economic resources, focus is on affected peoples’ lack of **legal protection frameworks**; and (4) the role of environmental change has been reduced so that those ‘trapped’ include people **displaced** due to **conflicts** and **economic migrants moving towards large(r), richer cities and states**, such as **towards the EU**.

In addition to the Foresight narrative on future challenges, Discourse B also feeds into narratives describing **increasing migration flows as a security threat** and debates on **refugee or migrant protection**. It is, for example, stated that **migrants' circumstances fall within legal protection frameworks** but they are **trapped on the 'wrong side'** of these frameworks. People thus face **dangers** to the extent of **discrimination, racism, hostility, violence, physical and sexual abuse, forced labour, human trafficking, and organ theft**.³³

Extract 4.22

We suggest there are six major mobility outcomes:

- (1) migration within **states**;
- (2) migration between **states**;
- (3) displacement within **states**;
- (4) displacement between **states**;
- (5) choosing not to move;
- (6) being unable to move and **trapped**.

These outcomes cannot be understood simply as ex post **challenges to governance systems**. In the next section we develop a conceptual **understanding of governance** and then develop this insight to show how migration is constituted as a **governance challenge** by the effects of and interactions between five social and natural systems (economic, social, political, demographic, and environmental) that drive migration and also determine whether or not people move, as well as the scale, direction, and duration of movement.

(Geddes et al. 2012:953)

³³ Based on keywords from text extracts 4.22 to 4.29.

Extract 4.23

Tens of millions of people may find themselves **trapped** in vulnerable areas and unable to migrate.

(Geddes et al. 2012:962)

Extract 4.24

Thus the resultant **challenges** may be **more complex than first thought** and hold important **implications for SMPCs and for the EU**. First, **movement** may be **towards and not away from risk, particularly for economic reasons to large cities**. Second, environmental **change** may interact with other factors to reduce the ability to migrate and can lead to **situations where people are trapped** in areas in which they are **exposed to serious environmental risk**.

(Geddes 2015:488-489)

Extract 4.25

Political **upheaval** has been a key migration **driver** in SMPCs. **Conflicts** such as the **Gulf Wars** and in **Israel, Palestine, Libya, and Syria** have all led to **massive displacement**. **Conflict** can also cause **people to be trapped** in areas rather than for them to be displaced, thus making **conflict-related movements** particularly **unpredictable, dynamic, and hard to analyse**.

(Geddes 2015:481)

Extract 4.26

As **border security increases** and **borders become less permeable**, cross-border migration is becoming **increasingly difficult, selective and dangerous**. Growing numbers of people are becoming **trapped in their own countries or in transit countries**, or being forced to roam **border areas, unable to access legal protection or basic social necessities**.

(Humble 2014:56)

Extract 4.27

Even if migrants' circumstances fall within legal protection frameworks, strict border controls mean they often **cannot access protection** and are **trapped** on the '**wrong side**' of the border. /.../ There are many **hotspots** where **concentrated groups of people** become **trapped due to border security** – such as in northern **France**, north-west **Turkey**, northern **Bangladesh** and **North Korea** – often congregating in **informal 'migrant camps'**, with **many similar scenarios worldwide**.

(Humble 2014:56)

Extract 4.28

These **trapped migrants** are **vulnerable, exposed to the violations and abuses** that are typical for those moving through countries irregularly, including: **not having access to basic necessities; discrimination and abuse** because of their **foreign origin and irregular status; human trafficking** (which exposes migrants to **coercion, deception and physical and sexual abuse**); **dangerous or forced labour**; and **organ theft**.

(Humble 2014:56)

Extract 4.29

The **transitory settlement of West Africans in Moroccan cities** has led to noticeable **changes** in the appropriation and **degradation of spaces and places** in the **absence of interventions by the Moroccan government to offer legal protection and institutional support** for most of **African immigrants**, while **Europe increases its measures to prevent them from entering**. **West African immigrants** become **trapped in this situation** and most often **experience hostility, racism and violence**.

(Sow et al. 2015:1)

Expansion of the economic reasoning – it is more complex

The second expansion beyond the Foresight narrative comes from five publications (Black and Collyer 2014a, b; Bhatta et al. 2015; Adams 2016; Hillman and Ziegelmayer 2016), two of which (Black and Collyer 2014a and b) involved a Lead Expert Group author. There are overlaps with the previous discursive expansion through the way ‘trapped’ includes legal situations as well as locations in which people may become ‘trapped’.

These publications share the idea that Trapped Populations had not been adequately problematised, with the reality being more **complex** than originally portrayed by Foresight. As a result of this complexity, the authors propose an expansion of the concept to accommodate different perspectives. These include the relevance of social and legal access in relation to, for example, gender as well as fear and emotional impacts upon decision-making in relation to place attachment.

Black and Collyer's (2014a, b) publications differ greatly in length but overlap in message.³⁴ They serve as expansion initiators towards the acknowledgement of a greater degree of complexity in a number of ways by (1) referring to **individuals** (as well as people and populations) and thus recognising that whole units of people do not necessarily end up trapped; (2) referring to people 'trapped' in **situations** and **conditions** as well as geographic areas; (3) acknowledging, but also criticising, the economic **resource** focus of Trapped Populations and expanding the **multifaceted** reasoning to include access to **social networks**, **marginalisation**, and social stigmas as important factors; (4) emphasising that individuals may end up trapped at **any stage in their migration process**, thereby being **partially mobile yet trapped**, especially in **refugee situations**; and (5) referring to the conceptual necessity for both a '**want and need**' to move, as well as including consideration of those **offered an opportunity** to move but who **refuse to leave**.

Extract 4.30

To be 'trapped', **individuals** must **not only lack** the **ability to move** but also either **want or need to move**. The **ability to migrate** is clearly a **complex** and **multifaceted** indicator that includes a **range of potentially relevant policies** that may **impede movement** and **access to significant resources**.

(Black and Collyer 2014a:52)

Extract 4.31

To be **trapped**, **individuals** must **not only lack** the **ability to move** but also either **want or need to move**. **Ability to migrate** is clearly a **complex** and **multi-faceted** indicator that includes **access to significant resources or capitals** and a **range of potentially relevant policies** that may **impede movement**.

(Black and Collyer 2014b:298)

At the hands of this complexity, a strong narrative emerges around the **limited information, research, and understanding** of the concept. Black and Collyer recognise

³⁴ See text extracts 4.30-4.31 for an example.

the valuable insights of the **Foresight report** and do not oppose its storyline but build upon the foundations laid at the conception. However, although **policy** was described by Foresight as a potential solution to the ‘problem’, Black and Collyer encourage more caution of policy measures until our understanding of the concept, through more and better research, has increased.³⁵

Extract 4.32

A striking **example** is New Orleans at the time of **Hurricane Katrina**. Those with **resources left in advance** of the approaching hurricane; those with **friends and family elsewhere**, with whom they could **go and stay**, were also more likely to leave. Those without resources (largely the poor, **African-American**, **elderly** or residents without private cars) remained, **trapped** as the floodwaters rose. The **dangers** of the crisis were **disproportionately** faced by the **most vulnerable**. Where mobility brings benefits, **trapped populations** are further **marginalised**.

(Black and Collyer 2014a:54)

Extract 4.33

It is **not necessary** for **trapped individuals** to have **always remained in one place**. **Conditions** that **trap** particular populations may arise at **any stage in their migration process**. Protracted **refugee situations** offer an obvious example of a **partially mobile yet trapped population**.

(Black and Collyer 2014b:298)

Extract 4.34

Thus **individuals** may *need to move*, *and* be **offered an opportunity** to do so, under **particular conditions** but **still refuse to leave**. Such **individuals must still be considered** as **trapped**.

(Black and Collyer 2014b:300)

Extract 4.35

There is only very **limited research investigating** the **situation** of those we have **called “trapped” populations**. **Much** of this has **focused** on immobility more **broadly**, rather than the specific difficulties of those **trapped** as a result of crisis situations. The additional consideration

³⁵ Based on keywords from text extracts 4.30 to 4.38.

of “**needing**” to move introduced a specifically **humanitarian focus** to our **understanding** of “**trapped**”.

(Black and Collyer 2014b:300)

Extract 4.36

Research into the situation of those who are **trapped** in complete immobility presents the greatest difficulties. The **Foresight report considers their difficulties as largely economic**. As the **review of resource constraints** in the previous section demonstrated, this **can take many forms; constraints may not be directly financial and may include** things such as **access to geographically distant social networks**.

(Black and Collyer 2014b:301)

Extract 4.37

While we have such **limited information** on **trapped populations**, the **policy goal** should be to **avoid situations** in which **people are unable to move** when they want to, **not to promote policy** that **encourages** them to **move when they may not want to**.

(Black and Collyer 2014b:302)

Extract 4.38

The most **urgent issue** is to **identify how existing responses** can **reduce** the **likelihood** of **individuals** being **trapped** in crisis situations. At present **our understanding** of the mechanics of **trapped populations** is **too limited to suggest any clear policy measures** to **reduce** their **vulnerability or enable** them to **move when they feel they need to**.

(Black and Collyer 2014b:303)

The remaining publications contributing to Discourse B (Bhatta et al. 2015; Adams 2016; Hillmann and Ziegelmayer 2016) share Black and Collyer’s aim of expanding upon the complex and multifaceted nature of Trapped Populations. Hillmann and Ziegelmayer refer heavily to **Black and Collyer’s** (2014a) conceptual contributions and cite **claims** around the existence of “**trapped populations**”. Bhatta et al. seek to expand our understanding of **social, cultural, religious, and emotional restraining** elements on mobility in relation to women, children, and elderly. The expansions are made not only in relation to *why* people get ‘trapped’ but also in terms of *who* ends up ‘trapped’. The

article refers to **trapped group(s)** synchronising demographically ‘trapping’ elements such as **gender** and age. The concept is described in terms of **dynamic vicious cycles where women and their children get trapped**.³⁶

Extract 4.39

Another ‘spatial perspective’ in the debate of migration and environmental change is put forward by *Black and Collyer (2014)*. The **authors claim** that today “**trapped populations**” do **exist**, people that – out of a **lack of resources or other restrictions** – are **unable to move** when confronted with an environmental shock situation.

(Hilmann and Zieglmayer 2016:122)

Extract 4.40

This **situation** hints to the **existence** of a **large proportion of the population** that the **recent literature** has **classified** as “**trapped populations**” (*Black and Collyer, 2014*).

(Hilmann and Zieglmayer 2016:133)

Extract 4.41

In the Indonesian case **people** showed to be much more **attached to their place of residence by feelings of belonging** as well as **belief-systems**. Here the concept of **mental thresholds** as put forward by *van der Velde* and *van Naerssen (2007b)* seemed to be at work. Additionally, immobility and “**trapped populations**” **stood out** as a constitutional part of the nexus between environmental change and migration.

(Hilmann and Zieglmayer 2016:133)

Extract 4.42

Households that cannot migrate: The third group includes **trapped populations** that struggle to survive under adversity and cannot easily use migration to adapt to the negative impacts of climatic events. They may have **strong social ties** and are **emotionally attached** to their **resources** which **restrain** them **from moving even under adverse events**.

³⁶ Based on keywords from text extracts 4.39 to 4.44.

(Bhatta et al. 2015:14)

Extract 4.43

The **socio-economic, cultural and religious values** in the region have resulted in its **women and children** being **more vulnerable** to adverse situations in comparison to men. These **dynamics** form the **vicious cycles where women and their children get trapped**.

(Bhatta et al. 2015:15)

Extract 4.44

The **trapped group** has **intermediate income** including women who are generally less likely to move, due to **socio-cultural and economic reasons**, as are **children** and the **elderly**, and therefore **local adaptation efforts** should target these groups specifically. Given that **men's migration** could contribute to the further deprivation and risk that women face, the **trapped population** needs to be provided with greater social protection and opportunities for livelihood security.

(Bhatta et al. 2015:17-18)

Emotional attachment to place is mentioned by Bhatta et al. and Hillmann and Ziegelmayr. Adams, however, places greater focus on this aspect to **expand the view of what it means to be 'trapped' through insights from social and behavioural theories**, using **residential, place attachment, and social capital** to explain why **rural populations across the globe decide to remain** in a location **despite dissatisfaction**. In so doing, Adams seeks to contrast the **traditional or current definition** of Trapped Populations by (1) focusing on **individuals** instead of **households, people and populations**; (2) acknowledging the **subjective dimensions** and **differentiated capacity** to which a **"single" population respond** and **experience impacts**; and (3) expanding the notion of 'trapped' to include *situations* where people **are physically unable to leave, without the financial resources or means to escape**.³⁷

Extract 4.45

This research focuses on the intermediate stage of migration decision-making between

³⁷ Based on keywords from text extracts 4.45 to 4.49.

experiencing stress and migrating and **seeks to determine what stops a person from relocating**, even **when** they are **dissatisfied**. Therefore, **this article brings behaviourist ideas to the trapped populations thesis** in order to **create a more diverse conceptualisation of trapped** in the context of immobility. **The article builds on insights from social and behavioural theories** of migration decision-making (e.g. Speare 1974) and **ideas of place attachment and social capital**, applying these to the context of **populations that decide to remain in location, despite** exhibiting **dissatisfaction with their present location** and living under difficult environmental conditions.

(Adams 2016:431)

Extract 4.46

An understanding of the highly differentiated nature of mobility, **residential satisfaction and place attachment illuminates** some of the **reasons why rural populations** continue to **persist across the globe**, even in the face of **difficult conditions**. **This expanded view of what it means to be “trapped” suggests** that **such rural populations will continue to persist** even under a climate-changed future.

(Adams 2016:445)

Extract 4.47

Material as well as **subjective dimensions of the decision to migrate** (both in the **ways people experience impacts** (e.g. Massey et al. 2010) and their **capacity to respond** through migration) is likely to be **highly differentiated across the population**, yet **authors discuss a single “trapped” population**.

(Adams 2016:431)

Extract 4.48

I would argue that **this form of immobility** can be **interpreted as the individual being “trapped”**. **This contrasts** with the **current definition of trapped populations** as **people or households without the means to escape a dangerous natural disaster**, for example those **without transport** who could not leave New Orleans **during Hurricane Katrina** or **without the resources to overcome barriers during agricultural decline or environmental degradation** (Warner and Afifi 2014).

(Adams 2016:443)

Extract 4.49

Therefore, **just as it is accepted** that migration under environmental change exists on a continuum from forced to voluntary (Hunter 2005), **a similar continuum exists for trapped populations**. At one end, is **the traditional definition of trapped**, where **people are physically unable to leave a risky location** and their **lives are under threat**.

(Adams 2016:443)

Authors contributing to the second avenue of expansion identified within Discourse B argue to some extent for the complex nature of Trapped Populations and the need for further research to bolster academic insight. Agreement is broadly reached on the limited value of a purely economic assessment of involuntary immobility, but the consistency with which that narrative is adhered to across the five publications is limited. Despite efforts to expand upon the **traditional** definition initiated by Foresight, respondents contributing to findings refer to **lack of money, property, and house** as the key factors in their immobility.³⁸

Extract 4.50

Common responses were: “**Lack of money, everything is money in Lima, and if you don’t have a property you’ve got to pay to rent a place**” or “**I don’t have a house, nor work [in Lima], that’s why I don’t go**”. This **group most closely fits the description of “trapped”** which is currently used in the environmental migration world: **low income households** that are **not able to use migration as a strategy to improve well-being for their family** (Box 2 in Fig. 2).

(Adams 2016:440)

Extract 4.51

Of those who have **experienced dissatisfaction with location**, only 26 % are “trapped” by the **current definition**, that is to say, **unable to migrate because of resource barriers**. Even then, these **responses may reflect a low perceived self-efficacy** on the part of the potential migrant, **rather than an actual lack of resources** to migrate. **Forty per cent of the population is in location because of social and affective attachment to place**, “trapped” by their own internal

³⁸ Based on keywords from text extracts 4.50 to 4.51.

attachment or fear of the outside world. This represents 74 % of the dissatisfied population.

(Adams 2016:442)

In order to move beyond an arena where caution can be replaced by confident and effective policies, research tailored to accommodate the unique and complex nature of the concept will be necessary. In this way, some of the publications appear to have ended up ‘trapped’, or on the move between the two discourse groups. The texts are reproducing elements of Discourse B but also, at times, falling back into narratives of Discourse A.

4.5.3 Discourse C: Opposing the Foresight report

Discourse C consists of three publications by external authors opposing the Foresight narratives (Felli and Castree 2012; Baldwin and Gemenne 2013; Baldwin 2016). These texts problematise Trapped Populations and highlight the dangers of labelling people as ‘trapped’. Discourse C thus competes with Discourse A and, in some ways, with Discourse B. In contrast with the other discourse groups, the publications contributing to Discourse C do not heavily repeat the word ‘trapped’. The word ‘Foresight’ is, however, repeated 26 times across the three texts. Discourse C authors are thus critiquing Trapped Populations as a single aspect of the Foresight report’s wider findings.

Felli and Castree (2012) offered instant opposition to the release of the Foresight report by highlighting the dangers of **promoting migration as adaptation**. The authors oppose the third Foresight narrative that promotes well-**managed** and planned **global migration policies** by suggesting that the notion of a **trapped population** may be used to **justify** the promotion of **a new global reserve army of labour** while appearing to be **advocating policy of open borders**. Felli and Castree’s perspective proposes that the Foresight promotion of migration that will create economic and **developmental benefits** for **migrants, countries of destination,** and migrant **states** or **territories** through **remittances** is flawed. The concept is thus described as a means to **justify** the **uncritical promotion of “temporary and circular migration schemes”** that **allow** ‘trapped’ people to **escape suffering in environmentally** dangerous **areas** without clearly stating the wider economic gains occurring as a result. Elements of this criticism of the Foresight

global policy solution and the associated risks around **neoliberalism** are also raised by Baldwin and Gemenne (2013).³⁹

Extract 4.52

Not to put too fine a point on it, the **promotion of migration as adaptation strategy is consistent** with the **neoliberal practice of constituting a new global reserve army of labour** (Taylor, 2009). Indeed, the **promotion of migration as adaptation is not only justified** with regard to the fate of **'trapped' or poor populations**, but is also **presented as having important benefits for the receiving states**. The report is **not advocating a policy of open borders but**, instead, one in which **migrations are encouraged** as well as **monitored and managed**. This is especially the case with the seemingly **uncritical promotion of 'temporary and circular migration schemes'**.

(Felli and Castree 2012:3)

Extract 4.53

In this last part the **report encourages policy makers to promote migrations** (both **internal and international**) that can **benefit** both potential and actual **migrants by allowing them to 'escape' areas** that are **suffering** adverse **environmental change** (with a **special focus** on **'trapped' populations'**), to bring **developmental benefits for their territory or community** of origin (notably **through remittances**), and to have a **positive impact** on the **countries of destination** [by **introducing a younger and more entrepreneurial workforce than the domestic on**].

(Felli and Castree 2012:2)

Extract 4.54

Obstacles to migration remain extremely important, and **large vulnerable populations remain trapped** in highly **vulnerable regions**. **In the absence of a global solution**, it is likely that most **policy responses will remain regional and humanitarian** in nature.

(Baldwin and Gemenne 2013:265)

Baldwin (2016) presents a more in-depth analysis of the Foresight report and expands the warning raised by Felli and Castree by linking the descriptions used by Foresight to power, discourse, and race. The article highlights the dangers of **maximising adaptive**

³⁹ Based on keywords from text extracts 4.52 to 4.54.

migration in the interest of capital circulation and warns against the installation of an **affective infrastructure** that **obscures** and conceals **racial management** and defines or **stipulates maladaptive migration**.⁴⁰ These cautions align well with some of the discursive narratives detected in our literature review. These include post-colonial descriptions of environmental mobility through the ‘new language of climate change’, the dangers of an individualised responsibility to adapt, and the risks associated with defining someone as either an adaptive/resilient or maladaptive/non-resilient migrant. While the successfully adaptive migrant remains mobile and productive, a maladaptive migrant becomes ‘trapped’. Even when climate action or adaptation support programmes are constructed to protect people, labelling them as ‘trapped’ has the potential to do more harm than good; people may end up even more vulnerable, less supported than before, or having their rights violated.

Extract 4.55

But for our purposes, **the Foresight Report is important because it functions as a kind of security apparatus; it installs an affective infrastructure** through which **climate change** comes to be **conceived as a problem of racial management**, albeit in a way that **obscures** any obvious **racial connotations**. The text advances the **desirability of adaptive migration**, the **benefits of which ought to be ‘maximised’**. But it also **stipulates that maladaptive migration** (migration into areas of high environmental, **social** and **political risk**, such as **urban informal settlers**; and **so-called trapped or immobile populations**) **requires new forms of intervention**. **Maximising adaptive migration in the interest of capital circulation and planetary well-being, while containing maladaptive migration** bears **striking resemblance to Foucault’s biopolitical formulation ‘making live and letting die’**. And as we saw earlier, this is **an unmistakably racial formation – a ‘break into the domain of life that is under power’s control’**.

(Baldwin 2016:87)

4.6 Discussion

It is interesting that one of the key findings of a well-funded UK Government report produced by migration experts commissioned to investigate how people will move in the future due to climate change impacts highlighted non-migration as a potential threat.

⁴⁰ Based on keywords from text extract 4.55.

Although this danger was framed by the Foresight Lead Expert Group in terms of its humanitarian consequences, the threat posed by such immobility to the existing status quo must also be considered. The power effects of language, vocabulary, and meaning are of particular importance within policy. For example, the inclusion of ‘*displacement, migration and planned relocation in regards to climate change*’ through §14f in the 2010 UNFCCC Cancun Agreements marked a unique linguistic breaking point in how migration was framed in relation to climate change (UNFCCC 2011: §14f). Resettlement suddenly entered the rhetoric on how to protect vulnerable populations from the future threats of climate change (e.g. Dun 2011; Stal 2011; Iftekhar and Darryn 2014). However, the critical perspective presented within Discourse C suggests that any policy interventions intended to prevent or aid ‘trapped’ individuals must tread carefully when dealing with uncertainties inherent to future environmental changes. Seemingly noble intentions must not be rolled out without adequate consideration of their wider consequences.

The CDA presented here was used to shed light on how and why certain narratives and realities surrounding Trapped Populations were shaped in specific ways. The analysis revealed a clear conceptual storyline emerging from the Foresight report. Three discourse groups were identified that continued the story. However, discourses do not exist in isolation and the original Foresight narrative has been shown to have dominated Discourse A (reproducing), complemented and cooperated with Discourse B (reproducing and expanding), and been contradicted and competed with by Discourse C (opposing). A deeper critical analysis of the language reproduced through the Foresight report, such as the strong economic and possibly post-colonial descriptions, might be traced back to the commissioning of the report. As an aside, it is worth comparing the language and authorship in promotional videos of the Nansen Initiative and the Foresight report.⁴¹

⁴¹ See (https://www.youtube.com/watch?v=D_A4l0qwF4g) for the Nansen Initiative video, and (<http://www.bis.gov.uk/foresight/our-work/projects/published-projects/global-migration>) for the Foresight report launch video.

Similarly, the suggested solution of planned and controlled migration, resettlement, or relocation programmes must be examined in the light of governance and its power effects. Migration scholars have warned against the assumption that mobility is the panacea needed (Hartmann 2010; Black and Collyer 2014b). Nonetheless, frequent mentions of planned and well-managed migration within the Foresight report and Discourses A and B suggest that proactive assistance measures such as assisted migration, relocation, or resettlement may be promoted as an effective and favourable climate action solution for ‘trapped’ populations. However, the ideology behind such proactive forms of policy recommendations or ‘assistance’ requires careful management to ensure they preserve the autonomy of affected people.

In situations where immobility is involuntary and people willingly self-identify as ‘trapped’, assisted migration similar to that initiated when a refugee is offered ‘refuge’ in a safe state may be welcomed. However, where immobility is voluntary, it will represent an imposition into the lives of people who do not want to leave their homes (Hess et al. 2008; Adger et al. 2011). Climate policy recommending resettlement and relocation must be approached in a manner that reflects the incredibly complex and sensitive nature of the process (Hansen and Oliver-Smith 1982; de Sherbinin et al. 2011) and acknowledges the power and prejudices that may underlie its use.

4.7 Conclusion

Although Trapped Populations has been described and interpreted in a number of ways, the concept is still developing and differences continue to emerge in the ways that it is defined. This chapter has sought to make a crucial contribution to the literature on the concept by drawing together all relevant post-Foresight references and offering an analytical template from which to create a cohesive understanding of the current state of the art. The CDA approach used has revealed that narratives around Trapped Populations have, to date, centred on the possibility of people becoming involuntarily immobile in dangerous locations in the future. However, the three main discourses identified across the 21 publications suggest that the concept has not developed in a clear and consistent way. After a fast and straightforward birth, the troubled teenage years of Trapped Populations look set to continue with some years on the backpacking trail to look forward to before it either fades into insignificance or strides forth in a more mature and stable

form. The current fragmented nature of the concept and its irreducible nature in practical and theoretical terms has hindered its effective development and instead created a potentially dangerous policy tool. In its current form, there is a risk that the concept may be misused to seemingly ‘protect, save or move vulnerable populations from risky places’ while ensuring political or economic gain.

The theoretical and methodological approach used in this research is intended to remind us that language, texts, ideas, concepts, and knowledge are flexible, elastic, and constantly changing according to social structures. The power contained within language, and the way narratives turn into storylines, discourses, and reality should not be overlooked, especially not in relation to the risks, aftereffects, and dangers of describing someone as ‘trapped’. Referring to a person as ‘sick’ may lead to them being perceived as fragile, worthy of pity, or infectious and thus treated differently by other people. In the same way, labelling a person as ‘trapped’ has the potential to reduce or remove an individual’s agency, autonomy, and independence in determining their own destiny.

The human penchant for binary opposites should perhaps have helped us to envisage that after decades of alarmist warnings that “here comes the flood”, cautionary tales of the danger of standing waters would follow. Regardless, given the complex origins and multidisciplinary nature of Trapped Populations it is important that future progress around the concept, including how it is to be implemented through climate policy recommendations, is undertaken in a manner that recognises the linguistic power of the term and the potential ramifications of its use. In order to better understand migration flows and preserve the rights of affected people, greater effort must be made to dissect migration decisions and (im)mobility.

Chapter 5

Trapped in the prison of their minds: Understanding the notion of ‘trapped’ populations through an urban settlement in Bangladesh⁴²

5.1 Introduction

The notion of Trapped Populations was first introduced, by the Foresight Migration and Global Environmental Change (MGEC) report in 2011, in reference to those people who want to migrate in the face of environmental stresses and shocks, but are unable to do so because of a lack of resources to fund their mobility. The concept has since been extended by various scholars to include those ‘trapped’ by legal protocols, border situations (Black and Collyer 2014 a, b; Humble 2014), and by non-economic factors, such as social barriers including gender and place attachment (Bhatta et al. 2015; Adams 2016). The importance of these non-economic elements was also pointed out within climate change policy, such as the UNFCCC Warsaw International Mechanism’s incorporation of ‘*non-economic losses and damages*’ (UNFCCC 2013, 2014, 2015).

Underlying these narratives is a normative framing of decision-making (see Beratan 2007), rationality, and linearity, whereby behavioural intention, in this case the desire to migrate, is assumed to lead to migration behaviour, and if this does not occur it is due to specific barriers, such as a lack of finance or social and cultural norms. This chapter argues that by contrast, decision-making around mobility and immobility in reality is more complex, and less linear (see Fig. 2.5). In particular, the chapter shows that to understand the apparent inability of some to move away from places that involve risks (environmental and other) there needs to be an analysis of the highly contextual socio-

⁴² This chapter has been submitted under the same title for separate peer-reviewed journal article publication. References made to the chapter should therefore be cited accordingly: Ayeb-Karlsson, S., Kniveton, D. and Cannon, T. (2018). Trapped in the prison of their minds: Understanding the notion of ‘trapped’ populations through an urban settlement in Bangladesh. Working Paper.

psychological aspects that affect people's state of mind. These aspects for example include feelings of belonging, identity constructions, attitudes to risk, attitudes to migration and emotional well-being. Put another way, the chapter attempts to answer the question why individuals with similar cultural and socio-economic and legal status can exhibit different mobilities. Section two outlines the material, methods and theoretical framework used in the research. Section three explores some of the discourses around mobility and immobility that were identified in the analysis. This section is followed by section four which pulls together the learning from the research in terms of what it reveals about the notions of being 'trapped'.

This chapter aims to answer the following questions from an urban immobility perspective: Do any of the discourse groups⁴³ want to move but feel like they cannot leave or escape the settlement; e.g. identify themselves as 'trapped' (Q: 5.1), how do they describe their immobility (with the aim of moving beyond economic explanations) or why are they immobile (Q: 5.2), and do the narratives reveal different notions of being 'trapped' (Q: 5.3)?

5.2 Material, methods and theoretical framework

Previous research narratives on 'trapped' people mostly covers rural people who do not manage to migrate away from or escape environmental hazards (Penning-Roswell et al. 2013; Milan and Ruano 2014; Afifi et al. 2015). Although the Foresight report stressed that cities in low-income countries should be considered high-risk areas, surprisingly little research examines urban 'trapped' people. In response, this study focusses on Bhola Slum, an urban informal settlement in south Dhaka, Bangladesh. The name of the settlement arose as it housed the migrants who moved there from Bhola Island on the south coast. People started arriving here in the 1970s after facing cyclones and riverbank erosion back on the island (McNamara et al. 2015).

⁴³ The discourse groups refer to the Q-factor groups identified through the Q-analysis which grouped people's subjective responses in relation to (im)mobility decisions in such a way so that it reflects the broader discourses in the study area (as described in Watts and Stenner 2012).

The research, based on a mixed-method approach, was carried out in 2014-2016 and involves two analytical parts:

(1) *Q-methodology*, accompanied by a livelihood and migration history survey (Figure 5.1-5.2 and appendix II) was conducted to gain background information of the 62 Q-participants. This also identified the different discourses around (im)mobility in Bhola Slum.

(2) A variety of *qualitative storytelling methods* including individual in-depth Livelihood History Interviews, Key Experience Sessions, Focus Group Discussions involving storytelling elements, and a Resettlement Choice Exercise supported the Foucauldian inspired discourse analysis.

5.2.1 *Q-methodology and survey questionnaire*

Foucault (1981, 1991) and Fairclough (2003) refer to the concept of 'discourses' as a collectively shared 'general domain of statements', and as the process of reasoning in a social context to create meaning and order in the shared reality (Morinière and Hamza 2012). As such, discourses operate both for people to place themselves in a social context, and people are socially positioned within them. The power of discourses to produce 'knowledge regimes' (Hajer 1995; Adger et al. 2001; Cannon and Müller-Mahn 2010) is the main focus of a Foucauldian discourse analysis (Foucault 1981, 1991). According to Foucault, power and knowledge can lock people into the social discourses. This is because power creates knowledge, which creates power. For example, knowledge can maintain people in the discourses by disciplining their actions, and power by socially punishing those who steps outside the discursive norm (Foucault 1977, 1982, 1995; Butler 1997; Ayeb-Karlsson et al. 2018b). In this way, they can serve as a valuable tool to analyse (im)mobility, or to explain why people do not manage to escape and move away from environmentally risky situations.

One method used to identify discourses through factor analysis is Q-methodology (Q for short). Q was originally developed in psychology by Stephenson (1935, 1953), but is now gaining interest in social sciences and other disciplines. It is a method of factor analysis that enables the researcher to group people's subjective responses in relation to a specific

topic so that it reflects the broader discourses in the study area or study group (Ockwell 2008; Watts and Stenner 2012). Q-methodology has been used to explore a variety of research problems. In the area of climate change, examples include climate policy (Ockwell 2008; Hugé et al. 2016), climate change (Niemeyer et al. 2005; Wolf et al. 2009), environmental migration (Morinière and Hamza 2012) and hurricane evacuations (Oakes 2014).

This Q-study was carried out in Bhola Slum and focused on attitudes to (im)mobility to improve the understanding of people's reasoning and their decision-making process around (non)migration to or from the settlement. The approach frames people's behaviour and decision-making process as strongly dependent on the existing social norms that are constructed, reproduced and confirmed by the discourses in a place (Foucault 1982, 2002; Butler 1997, 2006).

'Traditionally' Q-methodology does not require a large size sample of subjects as the method is based on the psychological understanding of someone's subjectivity and discourse in relation to a specific topic. There are even single participant Q-studies identifying multiple viewpoints on a discourse of a specific issue through Q-sorting activities taking place with one and the same Q-participant (Watts and Stenner 2012; Morinière and Hamza 2012). In this way, Q-studies do not claim that a single participant or a group of participants can be generalised to a larger society or population. Instead, it is the patterns disclosed through the method that reflect the discourses existing in the broader society offering challenges to generalised conceptions of decision-making (Barry and Proops 1999; Ockwell 2008).

The participants taking part in this Q-study were asked to sort Q-statements by ranking cards labelled with the statements on a grid according to most and least (dis)agree (Figure 5.1). To identify the discourse groups (factor groups or subjectivity groups in Q-terminology), the sorting-results were entered and factor analysed through a software program called PQ Method⁴⁴. All statement cards had similar appearance, so that colour,

⁴⁴ PQ Method is a DOS based software designed by Peter Schmolck that can be downloaded online <http://schmolck.userweb.mwn.de/qmethod/index.htm#PQMethod>.

matter in the study area or group (Watts and Stenner 2012). A Q-set of 40 to 80 statements has become an accepted standard (Curt 1994; Stainton Rogers 1995). Fewer sorting items than this may provide inadequate analysis, while more items may require too much time and effort from the participants during the sorting process (Watts and Stenner 2012).

During the Q-session the 62 participants were handed the deck of cards with the statements, asked to shuffle them and start reading out the 40 Q-statements (Table 5.1) one by one while ranking them between most-, least (dis)agree and neutral. In the case when a participant did not know how to read, the statements were read out to them by the facilitating researcher. The cards were first divided into three piles of agree-, neutral- and disagree-cards to make the sorting effort easier for the participants. When this was done, the participant moved over to the grid and started placing the cards one by one onto the grid. The participants had the liberty to move the cards around and re-rank them against one another during the session until (s)he was happy with the final outcome.

Table 5.1 Overview of migration Q-set

Statement number	Q-set Migration
1	I could get evicted tomorrow.
2	The riverbank erosion forced us to move here.
3	My health issues do not allow me to migrate.
4	I sacrificed my honour in the struggles here.
5	Things would have been better if I never moved here.
6	My family does not want to move.
7	There have to be people I know in the new destination.
8	One is safer in Bhola Slum than where I was living.
9	Moving is not the right thing to do.
10	If I could move from Bhola Slum I would.
11	It does not feel right to abandon the people living here.

12	The cyclones were the main reason why I moved here.
13	Women live a better life here.
14	Lack of land is the main reason why I cannot leave.
15	I migrated because education here is better.
16	If I only had enough money to start up a new life elsewhere I would go.
17	I am not mentally strong enough to move.
18	Bhola Slum is not a good place.
19	If I was offered a job elsewhere I would go.
20	One should never leave their family behind.
21	It was unsafe where I was living.
22	If I leave I lose everything I invested in this place.
23	This is not where I belong.
24	People I knew in Bhola Slum told me to come here.
25	My place is here.
26	If others would decide to move so would I.
27	I thought my living conditions would improve after I migrated.
28	I am afraid something may happen when I get to the new destination.
29	The outcome is anyways not in my hands.
30	I would like to return to my home district.
31	Job opportunities played an important role in our decision to move here.
32	I am unhappy here.
33	People here in Bhola Slum would not like it if I left.
34	My indebtedness does not allow for me to go.

35	Improved healthcare is why we decided to come here.
36	I am caught in a bad circle.
37	It did not turn out like I had hoped last time so why should I move again.
38	I would jump on the next bus if I only had enough money for the ticket.
39	My husband needs to be the one deciding whether we stay or go.
40	People told me I should migrate.

Table 5.1 The table lists the 40 Q-statements used in the Q-sorting activity in Bhola Slum.

One strength of the method in relation to discourse analysis is that the Q-sorting activity is participant-led. It seeks to understand the views or subjective reality of the respondents, and avoid researchers to test ‘pre-conceived ideas’. Another value is that the Q-sorting activity is strongly based on feelings involving agreement and disagreement around the statements. There is then less risk that assumptions are made by respondents of what is the ‘right’ or ‘wrong’ answer (Watts and Stenner 2005). This does, however, not imply that Q in any way is free of researcher-influence.

Although the 62 participants were not randomly selected, efforts were made to ensure that they reflected the overall representation of socio-economic and religious groups as well as the distinction of age, gender, and livelihood backgrounds in Bhola Slum. Snowball sampling facilitated the selection process. This is a non-probability sampling technique where existing participants recruit subsequent participants from among their acquaintances (Goodman 1961). There are advantages and disadvantages with all sampling techniques. The weakness of snowball sampling is that it is subject to numerous biases. People with larger social networks and more acquaintances are, for example, more likely to be recruited. However, in the case of this study site it does not imply a large problem as most people in the settlement know each other. One way to improve the sampling technique is to start off with an initial set of participants from a diverse background (Brace-Govan 2004; Kurant et al. 2011). Next to this effort, a sampling route was also decided upon before the arrival in the study site (Heckathorn 2002; Browne

2005). This way, the sample ensured to include respondents from different parts of the study area.

The Q-sort exercise was combined with a short 10 question survey of all 62 informant's livelihood and migration history. This was useful to understand the demographic and socio-economic background of the identified discourse groups. The information helped to identify shared participant characteristics, such as gender, age, livelihood background, and enhanced a deeper understanding of each group. In this way, the discourse groups were easily linked to the qualitative storytelling sessions.

5.2.2 *Qualitative storytelling sessions*

Storytelling methodology is a narrative-based open interviewing technique where space to construct stories is ensured without unnecessary interruptions. Leading or closed questions are avoided as cultural and social values are captured within the storyline (Bell 2010). The stories are particularly useful for a discourse analysis as people position themselves in their narratives. This chapter combines a diverse set of qualitative storytelling sessions, including individual, five in-depth Livelihood History Interviews (Ayeb-Karlsson et al. 2016) and Key Experience Sessions, as well as collective, four focus group discussions involving storytelling elements and a Resettlement Choice Exercise elaborating around the needs and wants to move or stay.

A common problem in many Q-studies is that the post-sorting interview does not result in enough details. The analysis then fails to explain why the participants sorted, or felt the way they did around the Q-statement(s). In an attempt to change this, and ensure more detailed insights in people's discursive reasoning, the Q-sorting activity was combined with the survey questionnaire and storytelling sessions. This methodological combination needs to be understood as a fairly experimental approach. The identified Q-narratives were in other words linked to a separate empirical discourse analysis, or CDA, of qualitative storytelling data.

This combined methodological approach proved to be useful for the Q-narratives of each discourse group. The informant background captured in the survey, for example, revealed certain key attributes of the people reproducing each discourse. Each discourse group

proved to consist of different gender, age, livelihood and educational characteristics. These characteristics in turn facilitated the relations between the discourse groups and the storytelling data.

However, in relation to the analysis, the researcher's power position in the production of knowledge can not be ignored. My identity, experiences and knowledge are constructed within European 'modernity', and will therefore affect what I see, and how I think. I experience the world as a White European woman raised in a European culture. I will never be able to fully remove these social and cultural differences, and instead ought to embrace these differences while challenging my thought processes. I found that some of the differences felt easier to overcome by seeking communalities (Said 1978; Spivak 1988; Manning 2018).

5.3 Results

Five discourse groups were identified through the factor analysis in PQ Method⁴⁵. Each factor group, or discourse group, represents a different perspective on (im)mobility in the settlement. The discourse groups presented in this section are labelled 'Discourse A-E' (see Table 5.2). After the Q-sessions the participants were asked to explain why they ranked the statements as they did e.g. how they felt/thought while ranking them. The informant number, statement number and sort value are referenced in brackets⁴⁶. The following presentation of the discourse groups include participant histories from the

⁴⁵The five discourse groups were identified through centroid factor analysis and rotated using varimax in PQ Method. PQ Method is a DOS based software designed by Peter Schmolck that can be downloaded online (<http://schmolck.userweb.mwn.de/qmethod/index.htm#PQMethod>). Centroid factor analysis was used to detect factor patterns or inter-correlation between the Q-sorts (Watts and Stenner 2012:96-100). Varimax rotation then supports in ensuring that each Q-sort (e.g. each participant sorting of Q-statements) only loads on, or reflects the viewpoint of, one factor group. The significant factor loading is calculated through the equation $(2.58 \times (1/\sqrt{\text{No. of Q-sorts in Q-set}}))$ e.g. $(2.58 \times (1/\sqrt{62})) = 0.33$. Q-sorts loading on or reflecting more than one factor group (cofounded) as well as Q-sorts that are non-significant (below 0.33) were not selected for further analysis. Eigenvalue above 1.00 served as selection criteria for factor extraction, the selected un-rotated factors explain 41% of the study variance and 46 of the 62 Q-sorts load significantly on one or the other factor (Watts and Stenner 2012:127-128, 197-199).

⁴⁶ This chapter uses the following Q-referencing system (informant: statement sort value), or to give an example, (46:2 +5) for individual informant ranking and (2 +5) for discourse group ranking.

surveys, as well as responses from the post-sorting Q-interview on the Q-statement extremes (+/-5, +/-4, 0) and the distinguishing statements⁴⁷.

Table 5.2 Discourse group overview⁴⁸

Source	Discourse group	Most agree statements			Most disagree statements		
Q-sorts	A Female	2. The riverbank erosion forced us to move here +5	1. I could get evicted tomorrow +4	27. I thought my living conditions would improve after migrating +4	5. Things would have been better if I never moved here -5	17. I am not mentally strong enough to move -4	22. If I leave I lose everything I invested into this place -4
	B Male	30. I would like to return to my home district +5	16. If I only had enough money to start up a new life I would go +4	1. I could get evicted tomorrow +4	12. The cyclones were the main reason why I moved here -5	15. I migrated because education here is better -4	21. It was unsafe where I was living -4
	C Female	2. The riverbank erosion forced us to move here +5	1. I could get evicted tomorrow +4	10. If I could move from Bhola Slum I would +4	13. Women live a better life here -5	34. My indebtedness does not allow for me to go -4	7. There have to be people I know in the new destination -4
	D Mixed	31. Job opportunities played an important role in our decision to move +5	30. I would like to return to my home district +4	11. It does not feel right to abandon the people living here +4	3. My health issues do not allow me to migrate -5	4. I sacrificed my honour in the struggles here -4	23. This is not where I belong -4

⁴⁷ The heading of each discourse group represents a summary of the analysis and indicates the Q-statement(s) ranked as most important for the overall group e.g. distinguishing Q-statements and ranking extremes.

⁴⁸ The discourse groups described in this chapter are referred to as male/female discourse groups in the analysis to separate the groups predominated by male/female participants although it is duly noted that female and male characteristics are social constructs reproduced by men as well as women. The only participant balanced group will be referred to as mixed.

	E Female	1. I could get evicted tomorrow +5	13. Women live a better life here +4	39. My husband needs to be the one deciding whether we stay or go +4	30. I would like to return to my home district -5	5. Things would have been better if I never moved here -4	18. Bhola Slum is not a good place -4
Source	Discourse group	Informant	Age	Education	Livelihoods	Migration	
Survey	A Female	Male: 5 Female: 10 Total: 15	Male: 26-44 Female: 21-47	Most never attended school, those who did only for 2-3 years.	Male: Construction day-labourers Female: Housewives/housemaids	All except one woman moved to Bhola Slum. Most arrived between 2000-2014 (N=11). Two men carried out seasonal work elsewhere in the past. Most want to return to Bhola Island (N=9), nobody wants to move to another rural area and only one would move to another city. Most willing to stay in Bhola Slum for the next 5 years due to work opportunities (N=12), although another area of Dhaka would be better as rent is lower, no eviction risk, more work and better social environment (N=9).	
	B Male	Male: 9 Female: 2 Total: 11	Male: 21-60 Female: 16-47	Most attended school for 2-3 years (N=7), although two men report having gone to school for 6-8 years.	Male: Construction/garment factory day-labourers, taxi-drivers, fruit sellers Female: Garment factory	All moved to Dhaka, many between the years of 2001-2010 (N=5). Many want to return to Bhola Island (N=5). Most do not see themselves staying in Bhola Slum within the next 5 years (N=9).	
	C Female	Male: 4 Female: 5 Total: 9	Female: 26-56 Male: 27-61	Half of the group attended school for 2-3 years.	Male: Day-labourers selling vegetables/nuts, pulling rickshaw earning 300-400tk or £3-£4/day Female: Household decision-makers (N=4)	Most migrated to Dhaka between 1990-2012 (N=7). Most want to return to Bhola Island (N=5) or other rural home villages (N=2). Most willing to stay in Bhola Slum for the next 5 years to save up money (N=5), but moving to another area in Dhaka would be better (N=7). Only one would consider moving to another urban area in Bangladesh. Two women want to send their sons abroad to Malaysia or Saudi Arabia.	

					Housewives/ housemaids	
	D Mixed	Male: 3 Female: 3 Total: 6	Male: 26-66 Female: 20-31	Half of the group attended school for 2-4 years.	Male: Permanent construction, transport or security contracts Female: Housewives (N=3) Garment factory (N=1)	All arrived in Bhola Slum between 2000-2008. One man and one woman engaged in seasonal construction work. Most want to leave Bhola Slum within 5 years (N=4). Most want to return to Bhola Island or other rural home villages. Most would move to another area of Dhaka temporarily (N=5). One man would consider moving to another urban area in Bangladesh as education is better here for his son. One woman would consider sending her son abroad.
	E Female	Male: 2 Female: 3 Total: 5	Male: 45 Female: 25-52	Most attended school for more than 4 years (N=4).	Male: Permanent contracts as plumber, electrician, construction project supervisor Female: Garment factory (N=3) Housemaids Housewives (N=3)	Most migrated to Bhola Slum already around its creation in the 1970s. The only more recent move took place over 10 years ago. Most women left the island due to family related troubles with their step-mothers. Many are willing to stay in Bhola Slum within the next 5 years as they have invested time and money into the settlement (N=3). Most do not pay rent as they 'own/occupy' the rights to the governmental land (N=4). Long-term they want to move to another urban area as work and education is better here, only one want to return to Bhola Island. The environmental stressors on the island are too much of a risk for the others. Most want to move abroad (N=3) to Mauritius or Saudi Arabia where they can make more money and create a better life.

Table 5.2 Shows an overview of the five identified discourse groups, as well as their informant and migration history. The table also indicates how they sorted the 40 Q-statements between most +5/+4 and least -5/-4 (dis)agree (for a complete list of all the 40 Q-statements see Table 5.1).

5.3.1 Discourse A: *I want to return but the riverbank erosion took my land*⁴⁹

Female dominated discourse group A, with an average age of 33, employs a narrative concerning the riverbank erosion that the participants faced on Bhola Island. This is also reflected in the two Q-statement extremes (+/-5). The group agrees the most with statement '**The riverbank erosion forced us to move here (2 +5)**', and disagree the most with '**Things would have been better if I never moved here (5 -5)**'. The riverbank erosion is described as a problem much deeper than a temporary stress back on the island. It marks a turning point that has ended up cursing their lives and future:

The river sucked everything out of us (46:2 +5). I lost everything. To be able to survive I had to come here (12:2 +5). The riverbank erosion is the reason for our present condition (26:2 +5). We have nothing left to build something new from (52:2 +4). The riverbank erosion is the only thing that drove us here (45:2 +4). The riverbank erosion is like a curse. Everyone loses land every single year. If I would have chosen to live there it would have gotten to me too (60:5 -4). We lost our land so how could things ever have been well? (21:5 -4). We came here for our survival because we lost our land (21:35 -5).

People also express living in great fear due to the risk of eviction and disappointment around how the move turned out:

The fear of eviction is always there (7:1 +4). We know that we can get evicted anytime. We have to be ready to go (6:1 +4). Many people leave thinking that [the living conditions will improve] is the case. That is what I thought too before I came to this place (26:27 +4). I came here with a lot of dreams and expectations (60:27 +5).

Next to the disappointment, the group also convey a feeling of meaninglessness or emotional emptiness. This is, for example, captured in the way happiness and honour are referred to as luxury items:

⁴⁹ Discourse A explains 11% of the study variance or 15 out of 46 participants are highly associated with this discourse group. Study variance refers to the proportion of shared meaning and variability that the extracted factor group explain out of 100%. The portions of shared meanings are our factors. This is because the process of factor analysis (or the data reduction technique) includes an inspection of the correlation that attempts to identify patterns of regularity or similarity in the Q-sorts e.g. the viewpoints that the Q-participants expressed (Watts and Stenner 2012:98).

Poor people cannot afford happiness (7:32 0). What am I supposed to do with happiness? (6:32 0). Poor people do not need to be honoured (7:4 0).

Interesting given this dissatisfaction, the people in this discourse appear mentally and emotionally ill-prepared to move on. The group emphasises that the lack of financial resources prevents them from moving as well as lack of land on Bhola Island to return to:

I have not invested anything into this place (26:22 -4). We have not invested anything in this place. We live in a house that we rent (52:22 -4). If I get a job, I will move (45:17 -5). I cannot afford to go to a better place (21:3 -4). I can maybe afford to buy a bus ticket but I do not have anywhere to live in my homeland (38:26 -5). If I could buy some land and build a house, then I would go home (52:30 0).

The participants refer to Bhola Island as home, and most of them would have stayed or returned if it was not because of the erosion. People do not express a similar emotional place attachment to Bhola Slum and its social environment. This comes through in way the settlement is portrayed. It is not described as a place where people want to be. Nonetheless, people seem to temporarily have come to terms with the idea that they will have to stay:

If there is no riverbank erosion in the future, then I will return home. Otherwise, I will not go (60:30 0). This is a very dirty and crowded place but we have nowhere else to go (59:19 0). There are drug addicts here so we cannot bring up our children properly, but we have nowhere else to go (52:35 0). There are bad people living here (53:18 0). Everyone is selfish here (60:33 -5). Sometimes people at work ask me whether I am living in a slum, a slum area like Bhola Slum (59:32 0). I have to stay here I guess. That is just it (60:32 0).

5.3.2 Discourse B: *This is not where I belong, I want to go home*⁵⁰

Male dominated discourse group B, average age 35, expresses a strong feeling of being displaced or not belonging in the settlement. This is reflected in the Q-statement ranked as most agree; '**I would like to return to my home district (30 +5)**', and in the distinguishing statements ranked higher than by the other groups:

⁵⁰ Discourse B explains 8% of the study variance or 11 out of 46 participants are highly associated with this discourse group.

I want to go back to my village as it is a wonderful place for me to live in (40:30 +4). It is so difficult to live here (16:30 +5). I want to go back home to my village, but there was nothing for me to do there to make a living (34:30 0). I do not want to live here. I want to go back to my village (43:23 +4). I miss my hometown (15:38: +4). I am homesick. I enjoyed life in my hometown so much (15:5 +4).

This is also reflected in the way the participants describe the settlement and its social environment:

I feel no connection to this place (15:25 -4). I do not feel emotionally attached to the slum dwellers (43:11 0). This place is very unsafe (15:21 -4). Back in the village there was honour, but in this place all people do is counting money (29:4 +5). I cannot stay here my whole life. I have to go to a better place (16:10 +4). The island was so much safer. I do not like this place. There are dangers here at night, thieves and kidnappers (15:8 -5). I thought my living conditions would improve, but there is no development here (34:27 +5).

One important difference from discourse group A, is that this discourse identifies with a economic reason to migrate rather than due to the environmental stress on the origin island. This is clearly expressed in the Q-statements they disagree with the most ‘**The cyclones were the main reason why I moved here (12 -5)**’ and in the group’s overall narrative. Lack of financial resources is also described as the main constraining factor keeping them in a place where they do not want to be:

We came here due to poverty (54:12 -5). I came here to earn money (35:15 -5). I was hoping to increase my income but I have lost hope regarding that (36:27 +4). I am here to work and earn some money (29:31 +4). I will go to a better place when I have enough money (35:16 +4). If I had enough money I would go, but the lack of money is the problem (38:16 +5). I would go to a better place if I had enough money (34:9 -4).

5.3.3 *Discourse C: Lost health and honour for economic gain*⁵¹

Female dominated discourse group C, has an average age of 42 years which makes it the oldest group out of the five. Interestingly, most women are household decision-makers due to different circumstances such as their husband’s death, abandonment and illness.

⁵¹ Discourse C explains 8% of the study variance or 9 out of 46 participants are highly associated with this discourse group.

Poor health and difficulties to support the household financially are common elements for the men who report earning about 300-400tk per day (£3-4 per day) which is relatively low for a male day-labourer in Dhaka. This discourse group emphasises similar statement extremes to group A. Statements regarding the impact of the riverbank erosion and the fear of eviction are ranked as those which they most (dis)agree with:

I lost everything. To survive I was forced to come here (8:2 +5). The river swallowed everything (3:2 +4). The erosion is the only reason why I am here (31:2 +5). This is not our land and there are no papers or documentation allowing us to live here. If the government wants to they can ask us to leave anytime. There is no security (1:1 +5). The government can throw us out anytime (30:1 +5). We do not have any land in Dhaka so we are not secure (31:8 -4).

The participants cite their loss of well-being and sacrifices made by having to live in the settlement. If the narrative of group A was centered around emotional numbness and hopelessness, group C's narrative moves even further into the darkness. The participants are aware that they are forced to stay in the slum, although they express being fed-up and how they would like to escape:

I have reached a point where I am fed-up (2:10 +4). Who would like to live in such a bad place? Everybody here wants a better life (30:10 +4). There are some bad people here involved with drug dealing so it is not a good place (20:18 +4). Who wants to live in a bad place? (20:16 +4). Bhola Slum is not a good place but what can we do? There is no other option (1:18 0). I want it easier. I want to be able to enjoy life (2:16 +4). I should make sure to move. If I find a good opportunity, I will do so (3:9 -5). I used to be safe but I suppose anyone can get trapped into a bad cycle (30:36 -4). I had to live here so of course I had to sacrifice my honour (33:4 +4).

The narrative also focuses on the loss of honour in relation to the lack of security for women. Q-statement '**Women live a better life here (13 -5)**' is ranked as the statement this group most disagree with:

No, the manner here is not to cover up. Women do not follow any religious values here (1:13 -4). Women face various problems here. Problems that makes it difficult for them to maintain their religious deeds (3:13 -4). Women face various trouble here (8:13 -4). There is not enough security here for women (20:13 -5).

The lack of land and financial resources to move are portrayed as part of the reason for being stuck, but health issues are also mentioned as explanations:

If I had some land I would go (61:10 +4). The lack of land is the main reason why I cannot leave (62:14 +4). There are more job opportunities here and my husband is sick (3:12 -4). We do not deal with education. We have to work (2:15 -5). My family wants to go to a better place but I cannot afford it (20:6 -4).

5.3.4 Discourse D: *I came here to save money and then I will return home*⁵²

Discourse group D with an average age of just under 33 is the youngest group out of the five. Increased job opportunity was the main reason why this group decided to move to Bhola Slum. This is also reflected in the Q-interview:

I came to Dhaka to earn money (41:31 +5). I came here to work (22:31 +4). I came here to get a better life (25:5 +4). I am here because of poverty (10:3 -5). I am only here to earn money (25:15 0).

The move was however supposed to be temporary to save up money and people express wanting to return home eventually:

We are all here to save up some money to be able to buy a piece of land and get a house (25:30 +5). I hope I will be able to go back to Bhola (56:30 +4). If I can arrange enough money, then I will go back to my birthplace Bhola (56:10 +5).

An important difference from discourse group C and B is the ranking of Q-statements on poor health, loss of honour and belonging:

No one has to sacrifice honour but they have to work hard (10:4 -4). We are physically well by the grace of God almighty, but we are lacking money (51:3 -4). I do belong to this slum (56:23 -4). I know this is not a good place but I live here. I have the right to be here (41:23 -4). I cannot say that this place is not for me (22:25 -4).

The group emphasise having the right to be here, but they do not express a strong social or environmental attachment to the settlement:

They are not my people. Not everyone is that helpful (56:33 -5). Bad and good depends on us human beings. There are many people living here. So we have to be careful (22:36 0). Life here is

⁵² Discourse D explains 6% of the study variance or 6 out of 46 participants are highly associated with this discourse group.

miserable for women (13:10 -4). Sometimes I feel happy here, but my husband suffers from the environment (56:32 0). I do not think one is safer here than back in the village. People sometimes say that, but I do not agree (41:8 -5). If I compare this place to my village, it was safer there than where I am living at the moment (25:21 -4). I have not invested anything into this place (25:22 -4). If we would find a better place, we will move (51:23 0). I just need a good place to live in (56:14 0).

This group conveys a more complex view of being ‘trapped’. People clearly want to leave the settlement in a few years and return home. Additionally, they would not have migrated in the first place if they would have gotten by financially in their home villages. They came here with a clear purpose; to save up money and return. In this way, they ended up in limbo, e.g. they must, need and are fairly comfortable here, but this temporary satisfaction heavily depends on the hope of returning home to a better future. This satisfactory status quo will change if they do not manage to return home with some savings in a few years. This uncertainty is also expressed in the interviews:

It all depends on the situation (51:30 0). I do not know anything about what will happen. Allah knows better than us (41:29 0).

5.3.5 *Discourse E: Urban dreams of betterment*⁵³

Female dominated discourse group E has an average age of 40 years. This is the only group that does not identify themselves as landless. Most women stopped working once they had children, or their children became of age to care for them financially. Three households have a TV, and two a fridge, these symbols of wealth were not found in the other discourse groups. Most women, interestingly, say that they moved from the island to escape family issues with their step-mothers. This is also the only group where most want to move abroad. In Mauritius or Saudi Arabia they can make good money, create a better life, and fulfil their dreams they say. This group top-ranks Q-statements around eviction, women’s security and men’s decision-making rights:

⁵³ Discourse E explains 7% of the study variance or 5 out of 46 participants are highly associated with this discourse group.

We are always afraid of eviction (5:2 +5). Ladies live a secure life here (19:13 +4). He is the head of the family so we will have to follow his decision (48:39 +5). He knows better than me so he is the one who takes the decisions (4:39 +4).

This is the only group that ranks Q-statement **'I would like to return to my home district (30 -5)'** as most disagree:

My children are studying here and we do not have anything left in our village (5:30 -5). My husband has no land in our home district. My step-mother is also there and my father's condition is not very well (48:30 -5). All has been taken away by the river. I do not want to go there (4:30 -4).

Other statements that only this group strongly disagrees with are that things would be better if they never migrated and that Bhola Slum is not a good place:

This place is better as it is free of step-mother cruelty (4:5 -5). If I would have had my land and my father would not have died, then we might be living well (32:5 -4). It is not that Bhola Slum is not a good place, it is just that there are too many people here (4:18 -4). Anything can happen anywhere. This place is safe (19:28 -4). I am happy here because our relatives are here and life is not that expensive (19:32 -4).

The narratives around why this group migrated from the island includes socio-domestic traumas as well as environmental stress:

I came here due to family problems (48:12 -4). I was tortured by my step-mother. I came here to make a better life and to get a job in the garment factories (48:27 +4). This place is better as it is free of step-mother's cruelty (4:5 -5). I had a step-mother who did not treat me very well. So I was in need for a job (4:31 +5). If I had my land, and my father would not have died, then we might have been living well (32:5 -4). My husband came here due to the riverbank erosion, not me (48:28 0). If the riverbank erosion would not have grabbed my land from us we may have been happier living on our own land (19:2 +4).

Group E does not want to return to Bhola Island, but they also do not want to stay in Bhola Slum forever. People dream of betterment, but currently do not manage to move due to a number of reasons, such as poor health, or a weak household economy:

The environment here is irritating (5:10 +4). If I get the opportunity, I will go (5:9 -4). I have many diseases, so it is hard for me to move to another place (32:3 +4). I am ill so my family does not want to move (32:6 +4). My husband and I are a bit sick, so we cannot move from here (48:3 0).

I am a widow and I have to think about my children so I cannot move (5:34 +4). We are always in debt (4:34 +4). My family wants to go but I cannot afford to go to a better place (19:6 -5). I have enough mental strength but we are not economically stable. Our relatives are also here (19:17 0).

5.4 Discussion

Five discourse groups were identified in the Q-analysis, and they all expressed a desire to move away from the settlement. The results show that it is too simplistic to conclude that they are all ‘trapped’ as it has defined in the past. It is also crucial to raise awareness around the dangers of describing someone as ‘trapped’, and the power of language. If being ‘trapped’ is framed as a problem, then a simplistic solution would be to ‘make people mobile’ again through policy interventions such as relocation. However, there are known dangers in resettlement as a potential climate action or adaptive solution for people at risk (Oliver-Smith 1991; de Sherbinin et al. 2011). The five groups showed extreme diversity in *why*, *where*, *when* and *how* they would like to move. The overlaps and similarities in attitudes between some of the discourse groups also help identify detailed differences in the participants’ reasoning, emotions, and experiences, leading towards ranking the statements as they did. This provides valuable insights around their responses that otherwise would go missing. Two respondents may, for example, give similar responses to a survey questions, but for completely different reasons. This section will build on some of the Q-findings, and further explore them with support of the qualitative storytelling sessions. This will provide a deeper understanding of why and how people may end up immobile.

5.4.1 *The importance of time, space and place*

Time, place and space play an important role in the narratives and explanations around what people try to escape from/to. All discourse groups except group E express a wish to return to their home villages, which are mostly on Bhola Island. The city and village are

portrayed by the respondents as binary opposites⁵⁴, where the village is peaceful, safe and filled of life and food. A place where time passes by in pleasant seconds, while the city is filled of dragged out years of dangers, conflict and hunger.⁵⁵

Extract 5.1⁵⁶

Life on Bhola Island is more peaceful. I think that is better. I have been in Dhaka for more than 10 years now but I do not like it here. Dhaka is not my place. I want to go back. I want to live in my village. For me that life is better. The village environment is way better than here. In the village you do not realize when six months have passed, but here it is difficult to pass each day (KES BSM20 2016).

Extract 5.2

If we would have lived in village our son would have grown up in a better environment than where he is growing up now. He may ruin his life here, because he may start mixing with the wrong crowd, ruined children. They may start taking drugs because there are so many opportunities to ruining your life in Dhaka city. In the village there are no such options. In the village there is no tobacco, there is no weed or drugs (LHI BSM70 2014).

Extract 5.3

We got the notice about 5-15 days before the eviction. When they came to remove us a conflict started up. The government official came here with the police and physically tried to remove or started fighting the slum dwellers. We had local politician leader on our side. Her name was Dipty. She is a member of the parliament now. She stood behind us and supported us in our protest. Though, the police still came here and she was arrested and thrown in jail. The prime minister released her later on. Two people in the settlement were severely beaten by the police (LHI BSM70 2014).

⁵⁴ The term ‘binary opposites’ in this chapter refers to a situation where a pair (words, things or characteristics such as man-woman, body-soul, black-white, east-west, and rural-urban) are defined against one and another. The system was seen as a fundamental organiser of all languages and thoughts (Foucault 2000, 2002).

⁵⁵ See storytelling extracts 5.1-5.4 for more details.

⁵⁶ This chapter uses the following referencing system (method, study site/informant gender/age data conduction year), or to give an example, (KES BSM20 2016) refers to Key Experience Session (KES), Bhola Slum (BS), Male informant (M), 20 years old at the time of data collection taking place in 2016.

Extract 5.4

In such a world I would not have to face a thousand people everyday. I would not even have to talk to you. But Allah has sent us into this world and in this world we are still hungry. If the riverbank erosion would not have happened, we would still have our land. We would be able to farm that land. We would have a nice house and enough food for all of us to eat. Our kitchen would be full of rice and I would be able to eat whenever I wanted to. We came to Dhaka because we were starving. Those who manage to earn a living here can buy food but for me Dhaka is still a place of hunger (LHI BSF40 2014).

Discourse A and B portray Bhola Island as a home, it is a place where people belong and where people want to be buried once they die. The village even becomes a place people belong to although they were born in Dhaka after their parents arrival.⁵⁷

Extract 5.5

I told my children that when I become unable to move by myself, or when I get that sick, I should be taken to my home village home. I want to die there and I want my grave to be in my village (KES BSF43 2016).

Extract 5.6

We lived so much better. We would grow rice and lived in a large house surrounded by trees. We were a happy family with plenty of crops and land but then all went into the river. /.../ I say [I am from] Bhola. I am from Bhola. That is where I come from. /.../ Home is Bhola. If someone asks me where my house is located, I say Dhaka. I then say that it is located at the slope of Pallabi, but if someone asks me about my home I say Bhola (LHI BSF40 2014).

These expressions of nostalgia are common in diaspora settlements (Spivak 1996; Schein 1999; Brubaker 2005). Research shows that a second generation of migrants sometimes perceive their identity as stronger attached to their 'homeland' (Anderson 1983; Butler 2001; Christou 2011) than the generation who actually lived and migrated away from a place. This discursive reproduction, a romanticisation of the homeland (Lindqvist 1991; Cohen 2008), is a way of finding a place in the displacement. It is a way to find certainty in an uncertain living condition, or a more stable identity than the one that is socially

⁵⁷ See storytelling extracts 5.5-5.6 for more examples.

placed upon them (e.g. migrants, settlers, newcomers). The idea of what life would have been like if they stayed is shaped by this romanticisation.⁵⁸

Extract 5.7

[When we moved to Dhaka] my father could not work as he was too old, so my brother would support us economically. /.../ After he died my parents suffered and I had to start begging from door to door. /.../ [If we would have stayed] I would have been able to take care of my health. We would have our land to cultivate so our living conditions would be better. We used to have our own land so we did not have to run after people. The way of living there was good (LHI BSF40 2014).

This idea also plays another important function. A person ending up ‘trapped’ in their mind, may not necessarily experience it as a prison. As pointed out in several of the discourse groups, the move to Dhaka did not turn out the way people had hoped or wished. In the same way, there is a risk that the return to Bhola Island would end up being a disappointment. It is therefore better to stay in a place where you know what struggles you will have to face, than to move to a place where the hurdles are unknown. It feels safer to know than not to know, certainty is better than uncertainty. However, uncertainty can also provide a feeling of safety. People do not know what life would be like if they would have stayed on the island and lived their lives there. Life there may have ended up being just as miserable as in Dhaka, but the not knowing allows the nostalgia and romanticisation to stay alive. The dream, fantasy or idea that life would have been better on Bhola Island is something to hold onto that allows people a way to cope in their Dhaka lives. The fantasy or dream of the village is most likely better than an actual ‘real life’ on the island. A return to Bhola Island would be to challenge the fantasy and put the dream at risk. In one’s mind, a dream or the idea of what life could be like always remains the same, but trying to turn it into reality by returning would be to put the dream at risk. It is therefore safer to hold onto the idea, maintain the dream, by never materialising it. In this way, people end up paralysed, ‘trapped’ in the prison of their own minds, ‘trapped’ in an idea, fantasy or dream of what their village life would have been like. This psychological

⁵⁸ See storytelling extract 5.7 for more details.

immobility may therefore constrain people from realising a return move, although they desire, hope, discuss, plan and perhaps even manage to save up enough money to move back to the island.

The desire and aspiration to return home is present, but the decision, action and actual move will have to ‘wait until things are right’ (see Fig. 2.5). One key word mentioned by most discourse groups is *opportunity*. If I got the opportunity to move, leave, go home, I would. Another key element is *time*. Time is not right, but when time is right I will go. When I have saved up enough money I will return, or when the erosion slows down I will go back home.

Time also becomes a key concept in terms of who has the knowledge, who should be listened to in the slum, and who is settled or stable⁵⁹. Those who are listened to, who have the knowledge, turns into the ones with decision-making and financial power in the settlement. This is reflected in discourse group E, the group that lived in the settlement the longest. For example, not only is this the only group that does not pay rent, but several households report being electricians. As Bhola Slum is an informal settlement, those in control of the electricity are also the ones in power over the power.

Extract 5.8

Those who have been here longer are the ones who will be able to give correct information about the slum (KES BSF43 2016).

Extract 5.9

Generally, people coming to the city need time to settle down. This sometimes takes 10-12 years. People already living in the slums have more stability and order than the newcomers (CSS BSF 2016).

5.4.2 *The importance of gender, social roles and power*

Power relations and social hierarchies are important to understand why and how some people may end up immobile. For example, discourse C points out that women and men

⁵⁹ For more examples see storytelling extracts 5.8-5.9.

do not have the same opportunities in the settlement. The discursive social behaviour⁶⁰, religious norms, or what is expected from people, is different for women and men (Butler 1997, 2006). It was, for example, mentioned by both female and male participants, that women forget to cover up, or to follow their religious devotions once arriving in the city. In Dhaka it is fairly common for women not to wear a headscarf.

In this way, the move to Bhola slum has opened up a new space of decision-making power, but on the other hand the social norm that followed the group may become even stricter. It may result in becoming more constraining, as the risk of facing social stigma and punishment, or chance to lose ‘honour’, become higher with the change of social environment and cultural shock. This was also reflected in the storytelling narratives.⁶¹

Extract 5.10

I think the environment of the village is more conservative than in the city in our country. A girl can get freedom by studying and can move freely. Superstition around a girl’s behaviour and freedom is smaller in the city (CSS BSF 2016).

Extract 5.11

It is very rare for a girl to go to Dhaka alone, one in a hundred maybe go alone. What normally happens is that after some time her character changes and she ends up marrying someone and forgetting her family. If a girl moves to Dhaka to work she should keep in mind that she has to send money to her parents and that she must wait to marrying someone until her parents want her to do so. If she forgets this and get into a relationship with a man, marries him and starts a new family she may suffer in the long run. Girls usually meet men in the garment factories and start a relationship, but the husband may leave her even after she had his child. This is the consequence of marrying someone without knowing enough about him. The first six months or so the husband may behave well, but then what normally happens is that they change. Then it is the girl who has to suffer. In that situation, she can no longer go back home to her parents so she will have to work to care for his child. She will have to work alone to support herself and her child. Perhaps she keeps her child somewhere under a tree while she works and when the child cries she comes

⁶⁰ ‘Discursive social behaviour’ refers to the normative behaviour reproduced within the discourse and therefore ‘expected’ of a person by its social surrounding. The rules and norms may vary depending on the social role of the person (Foucault 1981; Butler 1997).

⁶¹ See storytelling extracts 5.10-5.11 for more details.

running to calm her down. That is what her life has become, miserable. If she only would have cared about what her parents said and worked, she would not have to face such a reality. Though she only cared about herself and ended up ruining her life instead. /.../A man can surely get married again. Even a girl, if she has dreams. She could get married to another man too. Though it is the child who suffers the most in this kind of situation. A mother can re-marry with the child or she can leave the child behind. /.../ The mother got another husband, the father got another wife but what the kid got out of all these thing? Shame and hatred! That is why the child suffers the most (CSS BSM 2016).

In many areas of rural Bangladesh, men are responsible for income and providing for the household, while women are responsible for the home and food preparation. This has resulted in men working outside the house, while women's duties take place within the house. Therefore, when a woman steps out of the house to work in the village, or migrates to Dhaka to work in the garment factories, she transgresses the social order and creates chaos by crossing the limits of her socially agreed space and place (Butler 1997, 2006). In this way, women who take up work outside the house are portrayed as dishonourable, and are socially punished for breaking the discursive norm. This social stigma aims to keep the walls of the discourse from crumbling.

The girl described in one storytelling session changes her character after arriving in the city, she marries a boy that she meets in the garment factory, gets pregnant and is thereafter abandoned. In the story, she and her child end up stigmatised, and are forever doomed to a life of suffering, shame and hatred. The woman could try to escape the stigma by re-marrying another man, however, there is no escape for the child, who may even be left behind.

The urban risks around 'bad' behaviour often relates to drugs for men, and pregnancy for women. The difference in responsibility over children for women and men also comes through in the open interviews. This responsibility does not only mean feeding and supporting the children, but if they turn out 'dishonourable' it is a reflection of how the duty was carried out.⁶²

⁶² See storytelling extracts 5.12-5.13 for more details.

Extract 5.12

After arriving in Dhaka, he did not find any work and got involved with drugs. Gradually he went into debt to be able to buy more drugs. /.../ He had to go back to the village to take care of his children. After coming to Dhaka, he chose the wrong path and got addicted to drugs. He feared that his children might get involved in drugs too [if they came to Dhaka]. He did not want his children to go down the same path that he did (CSS BSM 2016).

Extract 5.13

A father can leave his children but a mother can never leave her child. I hoped that my children would help me on my future days. I was very sad when I found out that my children neglected these duties. I have no stable happiness in my life. I was forced to nourish them poorly so now they are not that sound in life either. (KES BSF43 2016).

Discourse C was the only group where women reported having the decision-making power in the household. In all the registered situations the position was described as handed over to them, permanently or temporary, due to unfortunate circumstances, such as death, illness or abandonment. In the storytelling interviews, several female respondents link their health issues to adolescent pregnancies, the sessions also detect gender roles of who is the ‘natural’ decision-maker. A woman, for example, retells the story of how she was taken to the hospital for examination by a female doctor. However, the doctor sends her home and tells her that her husband needs to come and see her to get the results. Neither her doctor, nor her husband, notifies her about her health condition. She eventually finds out, but at first the knowledge and the decision on how to deal with the information is fully placed in his hands.⁶³

Extract 5.14

I got married when I was 12 years old. A few years later I gave birth to my first son. I faced a lot of problems giving birth to him. /.../ A woman from work was a doctor so she took me to Dhaka Medical Hospital. There they did some tests and noticed that my kidneys were failing. She gave me an injection and told me that I had to go home and ask my husband to meet with her. Then she gave me some pills sent me home. I told my husband that he should go and meet with her. She was the one who notified my husband about my kidney failure, but she never told me what was wrong.

⁶³ See storytelling extract 5.14 for more details.

My husband looked worried when he returned home so I tried to find out why, but he never told me what was wrong. He just started to work really hard, saved up money and even took out a loan. The family I work for at the time also gave us some money. /.../ At one point, when I was sick and he could not do enough, he even thought of selling his blood but I warned him not to do so. He does not have that much blood so he would surely die. If we both died, then who would look after our children? (LHI BSF40 2014).

5.4.3 *The importance of health, wellbeing and emotions*

In all the Livelihood History Interviews (Ayeb-Karlsson et al. 2016), health issues and complications were captured in one way or another. The important link between poverty and poor health is described by discourse C as ‘trapped into a bad cycle’, and also captured in the interviewing sessions.⁶⁴

Extract 5.15

My husband cannot work properly as he had an accident. While cutting mud on a hill he was struck by a sudden landslide. There was a pipe inside the hill and it broke, creating a landslide, and he fell down in a hole that became buried. The other workers removed the mud and managed to save him. They took my husband to the hospital. Now when trying to work he faces many problems. He has pain coming from two sides of his belly and sometimes when he coughs, blood comes out of his mouth (LHI BSF40 2014).

Extract 5.16

After my wife got sick I cannot manage to save up any money. She needs her medicine everyday which is about 250taka [£2.50]. I cannot work due to my health so how am I suppose to feed her? I had to ask people I know and an NGO to lend me about 30,000taka [£300]. The money I got from people I need to pay back with interest. If the loan would be 2000taka then I need to pay back 2800taka. So the interest is 800taka. Only 10,000taka out of the 30,000taka is from the NGO. I cannot work, so I cannot pay back my debt. I do what I can to pay the interest only (LHI BSM60 2014).

People’s situation after arriving in the city easily turns into a downward spiral. To start, the newcomers end up in dangerous working and living conditions that increase the risk of getting injured or sick. After getting sick or injured in work related accidents, they do

⁶⁴ See storytelling extracts 5.15-5.16 for more details.

not manage to keep up with their livelihoods. A lack of financial resources means a lack of food and medicine that worsen the illness. Additionally, people sometimes end up with costly hospital bills or medicine that they only can afford by taking out high interest loans. A lack of financial means was highlighted by most discourse groups as one reason preventing their move from the settlement, but it is important to dig deeper into the roots of poverty.

Crucial non-economic elements, such as mental health and emotional wellbeing, are neglected in much of the literature on Trapped Populations (Ayeb-Karlsson et al. 2018a). The narratives of discourse C, around loss of honour, poor health, gender roles and social stigmas, are linked together in the interviewing sessions. There is a need for one respondent, for example, to explain the unexplainable. Even though the doctor is unable to determine what disease she and her daughter have, she is certain that they got it from working as housemaids in other people's houses.⁶⁵

Extract 5.17

I do not know what disease my daughter has. Not even the doctor was able to understand what kind of sickness it is. She has fevers, but it does not show all the time. We got sick from doing household work in other people's houses. That is how we got the diseases (LHI BSF40 2014).

The storytelling sessions also capture the importance of mental health, emotional state and wellbeing in other ways. The hopelessness and emotional emptiness around the future expressed by discourse groups A, B and C also appear in the interviews. The village and city are once again described as each other's binary opposites, where happiness, wellbeing and dreams were lost in the erosion and move.⁶⁶

Extract 5.18

If there was any chance to live a better life where my children had the opportunity to work, then I would go back to the village [on Bhola Island]. But as I was left by my husband, and I am sick as well, I do not have any hope left for my future life. /.../ Life was good until my husband got re-

⁶⁵ See storytelling extract 5.17 for more details.

⁶⁶ See storytelling extracts 5.18-5.20 for more details.

married. My husband used to treat me well. I was very happy until he married again. /.../ It is unbearable to to utter the words of my miserable story to you. I never want to speak of them. My husband married three other women beside me, and you cannot do anything to ease my sadness or misery. Only Allah can help me (KES BSF43 2016).

Extract 5.19

Wellbeing to me is all about living a peaceful life. That is why I want to go back to Bhola Island (KES BSM20 2016).

Extract 5.20

When we were children we had dreams of what we would become but our land suddenly went into river due to the erosion and we had to come to Dhaka to survive (CSS BSM 2016).

Another description found in discourse B and D that position the village and city as binary opposites is found in safety and unsafety, such as ‘this place is very unsafe’ or ‘the island was safer’. The importance of feeling safe, moving safely, and to a safe place, is also portrayed in the interviews.⁶⁷

Extract 5.21

We would prefer to move together as a group instead of individually. This would make us feel safer and more comfortable about the move (RCE BSF 2014).

Extract 5.22

The slum provides us with no safety or security in terms of being able to know that we can stay. The government owns the land and they can evict us anytime. We would like to go to a safe place (RCE BSM 2014).

Feelings and emotional wellbeing play a crucial role in people’s decision-making process (see Fig. 2.5), such as whether to stay or go. People express a need to feel safe and comfortable. This is highlighted in the group discussions around what an optimal resettling or relocation process would include. People express a desire to move together

⁶⁷ See storytelling extracts 5.21-5.22 for more details.

as a group, this would make them feel safer and more comfortable about the move. In this way, although the physical environment changes the social environment remains.

5.5 Conclusion

All the five discourse groups from the Q-analysis expressed a desire to leave the slum. However, why, how, when and where to, was strongly differentiated between the groups. For example, discourse groups A to C all wanted to return home to Bhola Island, while group D mention other rural places, and group E other urban areas. A few groups would stay in the settlement for a few years, while others want to escape immediately. Some groups say that their move is restricted by the lack of land, others financial resources, poor health or mental and emotional wellbeing. The notions of ‘trapped’ described in the findings are diverse. The storytelling sessions shed light on the importance of place, space, time, social roles, power relations and socio-psychological reasoning behind someone’s immobility. If anything, this chapter has illustrated the extreme complexity around turning an immobile group mobile. It must be questioned, especially within the area of climate policy, whether mobility is the solution, and a solution for whom, by whom. This chapter has described a long line of non-economic losses (UNFCCC 2013, 2015), such as the loss of identity, wellbeing and health, that people experienced after moving to urban from rural areas in Bangladesh although they ‘decided’ to migrate.

It is well-documented that resettlement is a complex process that must be considered with extreme care (Oliver-Smith 1991; de Sherbinin et al. 2011). Especially in relation to ‘trapped’ populations. Under these circumstances, one must think critically about social constructs such as identity and a collective ‘we’. This chapter, for example, registered that several discourse groups criticised the social surrounding in the slum and argued that the settlement is filled with ‘bad people’. In this way, our methodological approach showed the reproductive discursive process that creates and stabilised normative values around ‘good and bad’ behaviour, and how this can influence people’s (im)mobility in an urban settlement of Dhaka. Who, and why someone decides to stay or go, is part of a complex socio-psychological process that as yet is not fully understood.

Chapter 6

When the disaster strikes: A gender analysis of Trapped Populations and non-evacuation behaviour during cyclones in Bangladesh⁶⁸

6.1 Introduction

The concept of Trapped Populations⁶⁹ was introduced in 2011 by the Foresight report, and had a significant impact on debates about immobility in a climate changed future. The conceptual idea arose from some of the Foresight initiative's key findings arguing that some people are and will be unable to move away from locations in which they are extremely vulnerable to environmental changes, and therefore end up 'trapped' (Foresight 2011:9). Since then, the concept was mainly used to describe rural immobility (or non-migration behaviour) due to financial constraints (e.g. Penning-Rowsell et al. 2013; Milan and Ruano 2014; Afifi et al. 2015). This conceptual framing was criticised as people often end up 'trapped' in situations rather than geographical areas (Ayeb-Karlsson et al. 2018a).

This chapter responds to a discursive analysis of its conceptual use (see Ayeb-Karlsson et al. 2018a), concluding that until now, those described as 'trapped' mainly refers to a homogenous group of people, with a desire to move but imprisoned in risky locations. The chapter aims to investigate whether gender influences people's immobility during cyclone strikes in Bangladesh. Additionally, if gender influences people's evacuation

⁶⁸ This chapter has been submitted under the same title for separate peer-reviewed journal article publication. References made to the chapter should therefore be cited accordingly: Ayeb-Karlsson, S., Kniveton, D. and Cannon, T. (2018). When the disaster strikes: A gender-analysis of Trapped Populations and non-evacuation behavior during cyclones in Bangladesh. Working Paper.

⁶⁹ Trapped terminology: Trapped Populations is used in this chapter to refer to the existence of the concept (noun); 'trapped' is used to refer to when a person is labeled as being thus (adjective); and trapped is used to refer to the action of being rendered immobile in such a way (verb).

decisions, the analysis will elaborate on how it allows and constrains mobility, as well as whether these processes may have different impacts on women's and men's evacuation behaviour. Immobility framed around non-evacuation behaviour is not thematically new, but a number of studies prior to and after the Foresight report can be found. For example, articles investigating evacuation behaviour during Hurricane Katrina and Rita in the USA referred to 'involuntary immobility' (e.g. Elliott and Pais 2006; Stein et al. 2010; Thiede and Brown 2013). However, this chapter elaborates on whether gender-roles and gender-relations can help to explain why some people (and especially women) may fail to evacuate when a cyclone strikes. The gender-analysis (of male and female informants) uses mixed-methods involving Q-methodology and Foucauldian inspired discourse analysis in order to understand why some people choose not to evacuate to shelters, but instead try to survive the cyclone in their homes.

Previous articles investigating the gender-dimensions of climate vulnerability framed around resilience in coastal Bangladesh include Bhatta et al. (2015) and Jordan (2018). Bhatta et al. (2015) argued in a survey study conducted in farming households that women, children and the elderly are often left behind (while the men migrate) and therefore end up 'trapped'. Jordan (2018), proved how gender inequalities embedded in socio-cultural norms, practices and local power structures in South-western Bangladesh often result in increased vulnerability for women. Women, for example, move more slowly when responding to a cyclone warning due to their clothing and as they care for young children.

Other studies of hazard-related disasters in recent decades show that more females die than males. At times, this is due to confounding factors such as the age groups (e.g. Brunkard et al. 2008; Jonkman et al. 2009), but other times it is not. These include some places during the Indian Ocean tsunami of 2004 (e.g. Revathi 2007), and in Bangladesh during the 1991 cyclone Gorky (Terry 2009; Alam and Rahman 2014). About five times more women than men died in the Gorky strike (e.g. Begum 1993; Jordan 2018). This was, among other things, because women did not know how to swim and because they did not want to leave their homes (or left too late) due to lack of privacy and fear of sexual and physical violence in the shelters (Sultana 2007; Fordham 2012; Jordan 2018).

An analysis of the root causes of vulnerability to specific hazards experienced by different social groups, must therefore involve a range of social factors (Cannon 2000; Wisner et al. 2004; Juran and Trivedi 2015). The gender imbalance is often explained in terms of women having a lower socio-economic status (e.g. Anbarci et al. 2005; Neumayer and Plümper 2007; Rahman 2013). These explanations are challenged and extended in this chapter. Other common explanations of the vulnerability of many Bangladeshi women relate to their reduced mobility and social restrictions on their ability to choose what to do in the face of risks like cyclones. This ‘social position’ must be understood through a complex range of factors involving patriarchal attitudes, religious practices and the daily chores inherent in a gendered division of labour.

Social positions easily turn into questions of life and death when they determine who has access to disaster preparedness training, early warning messages, shelter space and post-disaster relief (Alam and Rahman 2014; Nadiruzzaman and Wrathall 2015). Furthermore, although receiving warning messages and preparedness training, women report that they still decide to stay back or evacuate too late for various reasons (Ayeb-Karlsson et al. 2016, 2018e, 2018f).

This chapter addresses some important gaps in the current literature around gender-vulnerability and disaster immobility (Fothergill 1996; Terry 2009). Although there are plenty of studies that explore disasters and gender-focused vulnerability in Bangladesh, they generally simply compare women’s disaster vulnerability to men’s (e.g. Begum 1993; Ikeda 1995; Rahman 2013). In this way, women are grouped into one coherent group that is perceived to inherit a collective vulnerability level. Differences between poor and rich women, marginalised groups as well as younger and older women are often neglected. This chapter aims to provide a deeper understanding of how gender may influence the decision-making process around disaster (im)mobility and evacuation behaviour.

In this chapter, the following research questions will support the framing of the gender-analysis: Do any of the discourse groups⁷⁰ describe a desire to move/evacuate to the cyclone shelter(s) but feel ‘trapped’ or constrained from doing so due to their social position (Q: 6.1), how is such social immobility described, e.g. why people end up ‘trapped’ (Q: 6.2), do the narratives disclose different notions of being ‘trapped’ (Q: 6.3)?

6.2 Material, methodology and theoretical framework

Several articles already pointed out severe research gaps in the literature elaborating gender-vulnerability, climate change and disasters (Rivers 1982; Fothergill 1996; Enarson 1998; Alam and Rahman 2014). Generally, applying a ‘gender-perspective’ equals referring to vulnerabilities of poor and victimised women in ‘developing countries’ that may be more deeply rooted in class or race systems rather than gender. These descriptions of the poor victimised woman in the developing south feed into other discursive realities such as the post-colonial climate change and vulnerability discourse (Cannon and Müller-Mahn 2010; Baldwin 2016).

The discourse concept in this chapter refers to a social group’s ‘shared general domain of statements’ (Foucault 1981, 1991; Fairclough 2003). A discursive analytical approach can help explain why climate change discourses are often described and framed as binary gendered between ‘male and female’ characteristics. Various scholars already built upon Foucault’s ideas around the Order of Things (Foucault 2002), where structure and order is maintained through binary opposites⁷¹ such as for example masculine and feminine characteristics that ought to be kept separated (e.g. Hirdman 1990; Cornwall 2003; Kulick 2008).

⁷⁰ The discourse groups refer to the Q-factor groups identified through the Q-analysis which grouped people’s subjective responses in relation to (im)mobility decisions in such a way so that it reflects the broader discourses in the study area (as described in Watts and Stenner 2012).

⁷¹ The term ‘binary opposites’ in this chapter refers to a situation where a pair (words, things or characteristics such as man-woman, body-soul, black-white, east-west, and rural-urban) are defined against one and another. The system was seen as a fundamental organiser of all languages and thoughts (Foucault 2000, 2002).

This chapter applies a Foucauldian inspired discourse analysis based on a two-step process that includes (1) *Q-methodology* with a related 10 question livelihood- and evacuation history survey, carried out with 186 Q-participants to identify discourse groups in three coastal Bangladeshi cyclone affected study sites (Dalbanga South, Mazer Char and Gabtola), and (2) a qualitative Foucauldian inspired critical discourse analysis carried out on text extracts from a diverse set of storytelling sessions and interviews used to deepen and exemplify the reasoning of the detected discourse groups (see similar methodological approach in Ayeb-Karlsson et al. 2018c).

6.2.1 *Q-methodology and survey questionnaire*

Q-methodology provides a way of identifying social discourses through factor analysis of people's subjective responses to a specific topic area so that it replicates the general discourse of a study area or study group (Ockwell 2008; Watts and Stenner 2012; Oakes 2014; Ayeb-Karlsson et al. 2018c). The Q-study presented in this chapter focuses on (im)mobility decisions around cyclone evacuation in three coastal study sites in southern Bangladesh. The 186 participants taking part in the Q-study (93 women and 93 men), were asked to sort 40 Q-statement cards (see Table 6.1) on the selected Q-grid (see Figure 6.1) according to how far they agreed or disagreed with the statement. The sorting results were entered and factor analysed through a software program called PQ Method to identify the discourse groups (also referred to as factor groups or subjectivity groups in Q-language, for more details see Watts and Stenner 2012).

Table 6.1 Overview of evacuation Q-statements

Statement number	Q-statements
1	Early warning messages are crucial to our survival.
2	I am afraid someone will steal my belongings.
3	One can never know whether you will reach the shelter safely.
4	Women are not safe in the shelter.
5	If people in the village told me to evacuate I would go.
6	The outcome is not in my hands.
7	I will not leave my valuables behind.
8	Something could happen to my family.
9	People normally tell me when to evacuate.
10	The disaster training is helpful.
11	I only go when I see others evacuate.
12	One should never leave their family behind.
13	I know just how to prepare when I see an early warning flag.
14	I feel safe after reaching the shelter.
15	Evacuating is the right thing to do.
16	I am afraid of dying in the cyclone strikes.
17	I am better off because my valuables can be taken into the shelter.
18	I never get the warning messages.
19	The shelter is not a place where I should be.
20	There is no point going to the shelter.
21	If the warning signal is low the cyclone will not be dangerous.

22	Most people live too far away from the cyclone shelter(s).
23	I normally get the warning too late.
24	There is not enough space for everybody in the cyclone shelter.
25	Nobody wants to leave their belongings behind.
26	My place is at home.
27	You cannot trust warning messages from people coming from other villages.
28	God decides who lives and dies.
29	An unmarried woman should not go to the shelter.
30	You can tell from the storm whether the cyclone will be strong.
31	Some people are not allowed into the shelter.
32	Lack of time is the main problem.
33	Terrible things may happen to you in the way to the shelter.
34	When a volunteer tells me to evacuate I will.
35	It is wrong for a man to evacuate and leave his wife behind.
36	The cyclone can rip the shelter apart.
37	It is better to die at home than in the shelter.
38	It does not feel right to leave the house.
39	I am afraid something may happen in the shelter.
40	People depend on natural warning messages.

Table 6.1 Listing the 40 Q-statements used in this evacuation Q-study. The statements selected for the Q-set were based on the qualitative field-work sessions conducted in 2014 and 2015. All qualitative storytelling sessions conducted as Focus Group Discussions were carried out in separate male and female group sessions.

potential informants, facilitated the selection process (Goodman 1961). Although the sampling technique can result in numerous biases, this risk decreases in smaller and isolated study areas where most people know each other. To improve the informant sample, the initial set of informants came from a diverse set of socio-economic and geographic background (Brace-Govan 2004; Kurant et al. 2011).

6.2.2 *Qualitative storytelling sessions*

Narrative or storytelling methodology is a non-structured and participant-led open interviewing technique that allows space to construct storylines without unnecessary researcher-interruptions (Bell 2010). The methodology can support in ensuring valuable insights on cultural values, normative boundaries and (dis)encouraged social behaviour as additional context is often captured in between the lines. The methodology complements the extracted Q-discourse groups by providing explanations, comprehension and details of people's discursive reasoning. This chapter builds on a set of storytelling interviews with individual informants (15 in total), and storytelling group sessions (12 in total, six female- and six male groups) in addition to the Q-sessions and the survey questionnaire.

In an attempt to change the common Q problem of lacking comprehensive details from the post-sorting interviews, which in turn can support the understanding around people's discursive reasoning, the Q-sorting activity was combined with the survey questionnaire and storytelling sessions. This methodological combination was fairly experimental where the identified Q-narratives were interlinked with the empirical CDA carried out on the qualitative storytelling data.

This combined methodological approach proved to be useful as the informant context captured in the survey and storytelling sessions highlighted certain key attributes and psychological profiles of the people reproducing each discourse group. This way the analysis around their decision-making process was pushed one step further (see Ayeb-Karlsson et al. 2018c for a similar experimental analysis approach).

However, it is important to keep the researcher's power position in relation to the production of knowledge in mind. My identity and experiences are constructed within

European ‘modernity’, and will therefore affect what I see, and how I think. I experience the world as a White European woman raised in a European culture. I will never be able to fully remove these socio-cultural differences, and therefore instead need to embrace them. Some of the differences however felt easier to overcome by focusing on our communalities (Said 1978; Spivak 1988; Manning 2018). I for example strongly identified with the struggles of being a young woman in a patriarchal society controlled by men.

6.3 Result: Q-analysis

Fifteen distinct discourse groups, five in Dalbanga South (study site A), four on Mazer Char (study site B) and six in Gabtola (study site C) were identified in the factor analysis (see Table 6.2). Out of them, a remarkable 14 groups were either predominantly associated with female or male participants⁷³. The discourse groups (labelled discourse A, B, C and 1-6 e.g. A1, B1, C1) represent different (im)mobility perspectives in relation to cyclone strikes and evacuation decisions. The discourse group summary presented in this section is based on key findings from the Q-sessions as well as the survey questionnaires. The post-sorting Q-interview quotes are referenced in brackets with informant number, statement number and sort value⁷⁴.

⁷³ The discourse groups described in this chapter are referred to as male/female discourse groups in the analysis to separate the groups predominated by male/female participants although it is duly noted that female and male characteristics are social constructs reproduced by men as well as women. The only participant balanced group will be referred to as mixed.

⁷⁴ This chapter uses the following Q-referencing system (informant: statement sort value), or to give an example, (014:2 +5) for individual informant ranking and (2 +5) for discourse group ranking.

Table 6.2 Overview of discourse groups

Study site	Discourse group	Participants	Most agree statements			Most disagree statements		
Dalbanga South Study site A	A1 Female	Male: 1 Female: 8 Total: 9	40. People depend on natural warning messages +5	1. Early warning messages are crucial to our survival +4	30. You can tell from the storm whether the cyclone will be strong +4	20. There is no point going to the shelter -5	23. I normally get the warning too late -4	38. It does not feel right to leave the house -4
	A2 Male	Male: 8 Female: 1 Total: 9	33. Terrible things may happen to you on the way to the shelter +5	7. I will not leave my valuables behind +4	30. You can tell from the storm whether the cyclone will be strong +4	31. Some people are not allowed into the shelter -5	29. An unmarried woman should not go to the shelter -4	19. The shelter is not a place where I should be -4
	A3 Male	Male: 5 Female: 1 Total: 6	15. Evacuating is the right thing to do +5	10. The disaster training is helpful +4	12. One should never leave their family behind +4	29. An unmarried woman should not go to the shelter -5	19. The shelter is not a place where I should be -4	20. There is no point going to the shelter -4
	A4 Female	Male: 0 Female: 4 Total: 4	40. People depend on natural warning messages +5	30. You can tell from the storm whether the cyclone will be strong +4	35. It is wrong for a man to evacuate and leave his wife behind +4	4. Women are not safe in the shelter -5	14. I feel safe after reaching the shelter -4	34. When a volunteer tells me to evacuate I will -4
	A5 Female	Male: 1 Female: 2 Total: 3	4. Women are not safe in the shelter +5	26. My place is at home +4	35. It is wrong for a man to evacuate and leave his wife behind +4	23. I normally get the warning too late -5	32. Lack of time is the main problem -4	17. I am better off because my valuables can be taken into the shelter -4

Mazer Char Study site B	B1 Female	Male: 3 Female: 11 Total: 14	1. Early warning messages are crucial to our survival +5	40. People depend on natural warning messages +4	35. It is wrong for a man to evacuate and leave his wife behind +4	38. It does not feel right to leave the house -5	20. There is no point going to the shelter -4	31. Some people are not allowed into the shelter -4
	B2 Male	Male: 12 Female: 0 Total: 12	24. There is not enough space for everybody in the shelter +5	22. Most people live too far away from the cyclone shelter(s) +4	15. Evacuating is the right thing to do +4	29. An unmarried woman should not go to the shelter -5	4. Women are not safe in the shelter -4	18. I never get the warning messages -4
	B3 Female	Male: 1 Female: 6 Total: 7	15. Evacuating is the right thing to do +5	28. God decides who lives and dies +4	5. If people in the village told me to evacuate I would go +4	23. I normally get the warning too late -5	24. There is not enough space for everybody in the shelter -4	29. An unmarried woman should not go to the shelter -4
	B4 Female	Male: 2 Female: 3 Total: 5	33. Terrible things may happen to you in the way to the shelter +5	37. It is better to die at home than in the shelter +4	35. It is wrong for a man to evacuate and leave his wife behind +4	19. The shelter is not a place where I should be -5	20. There is no point going to the shelter -4	40. People depend on natural warning messages -4
Gabtola Study site C	C1 Female	Male: 1 Female: 7 Total: 8	37. It is better to die at home than in the shelter +5	40. People depend on natural warning messages +4	15. Evacuating is the right thing to do +4	31. Some people are not allowed into the shelter -5	18. I never get the warning messages -4	19. The shelter is not a place where I should be -4

	C2 Male	Male: 6 Female: 0 Total: 6	35. It is wrong for a man to evacuate and leave his wife behind +5	28. God decides who lives and dies +4	12. One should never leave their family behind +4	20. There is no point going to the shelter -5	27. You cannot trust warning messages from people coming from other villages -4	18. I never get the warning messages -4
	C3 Male	Male: 5 Female: 1 Total: 6	25. Nobody wants to leave their belongings behind +5	28. God decides who lives and dies +4	35. It is wrong for a man to evacuate and leave his wife behind +4	23. I normally get the warning too late -5	40. People depend on natural warning messages -4	20. There is no point going to the shelter -4
	C4 Female	Male: 2 Female: 3 Total: 5	26. My place is at home +5	28. God decides who lives and dies +4	20. There is no point going to the shelter +4	16. I am afraid of dying in the cyclone strikes -5	18. I never get the warning messages -4	31. Some people are not allowed into the shelter -4
	C5 Male	Male: 3 Female: 1 Total: 4	10. The disaster training is helpful +5	12. One should never leave their family behind +4	15. Evacuating is the right thing to do +4	26. My place is at home -5	7. I will not leave my valuables behind -4	20. There is no point going to the shelter -4
	C6 Mixed	Male: 1 Female: 1 Total: 2	15. Evacuating is the right thing to do +5	10. The disaster training is helpful +4	34. When a volunteer tells me to evacuate I will +4	29. An unmarried woman should not go to the shelter -5	18. I never get the warning messages -4	37. It is better to die at home than in the shelter -4

Table 6.2 Showing an overview of the identified discourse groups in the three study sites, Dalbanga South, Mazer Char and Gabtola, as well as how they ranked the 40 Q-statements between most (+5 +4) and least (-5 -4) (dis)agree (for a complete list of all the 40 statements used in this Q-study see table 6.1).

6.3.1 Discourse groups site A: Preparedness save lives but women are still not safe

Five discourse groups were identified in Dalbanga South⁷⁵, explaining 48% of the study variance⁷⁶. Female discourse group A1 explained that *warning* messages and evacuation can save people's lives, referring to both *natural*⁷⁷ and *technological early warning messages* (see Table 6.2):⁷⁸

We can only start preparing after receiving the signal (002:1 +5). Our elders are very experienced. They understand from the nature what is happening (014:40 +4). We start preparing when we get the warning signal (013:1 +4).

I have to go if there is a cyclone (014:38 -5). We will not be able to save our lives if we stay at home (053:38 -5). If the water level raises too high, a house will not be able to save us (055:38 -5). The shelter is safer than my house so I must go there (002:20 +4). The volunteers and religious leaders normally inform us instantly through microphones (002:23 -5). We get the information quickly (014:23 -4).

⁷⁵The five discourse groups were identified through centroid factor analysis and rotated using varimax in PQMethod. PQ Method is a DOS based software designed by Peter Schmolck that can be downloaded online (<http://schmolck.userweb.mwn.de/qmethod/index.htm#PQMethod>). Centroid factor analysis was used to detect factor patterns or inter-correlation between the Q-sorts (Watts and Stenner 2012:96-100). Varimax rotation then supported in ensuring that each Q-sort (e.g. each participant sorting of Q-statements) only loaded on, or reflected the viewpoint of, one factor group. The significant factor loading was calculated through the equation $(2.58 \times (1/\sqrt{\text{No. of Q-sorts in Q-set}}))$ e.g. $(2.58 \times (1/\sqrt{62})) = 0.33$. Q-sorts loading on or reflecting more than one factor group (cofounded) as well as Q-sorts that were non-significant (below 0.33) were not selected for further analysis. Eigenvalue above 1.00 served as selection criteria for factor extraction, the selected un-rotated factors explain 48% of the study variance and 34 of the 62 Q-sorts loaded significantly on one or the other factor (Watts and Stenner 2012:127-128, 197-199).

⁷⁶ Study variance refers to the proportion of shared meaning and variability that the extracted factor groups explain out of 100%. The portions of shared meanings are our factors. This is because the process of factor analysis (or the data reduction technique) includes an inspection of the correlation that attempts to identify patterns of regularity or similarity in the Q-sorts e.g. the viewpoints that the Q-participants expressed (Watts and Stenner 2012:98).

⁷⁷ Natural early warning systems here refers to practices, observations and indigenous knowledge used by people to estimate or project an oncoming cyclone or flood, these often include changes such as in weather, movements of animals, and directions of wind and rivers.

⁷⁸ The Q-extracts presented below each discourse group reflect the responses made by the group participants to explain why they sorted the statements as they did and what they mean to them. These Q-storylines mainly include their reasoning around the statement extremes (+/- 5 and +/-4). However, sometimes lack of strong feelings can give just as valuable insights of the shared meaning within the discourse group. The Q-extracts presented are therefore include a diverse set of sorting values based on the analysed Q-storyline.

Male discourse group A2 touched upon *fear* of what may happen on the way to the shelter, their *unwillingness to leave valuables*⁷⁹ behind and the *right for all to exist in the shelter*:

It has taken me hard work to get my valuables together so I cannot just leave them behind (025:7 +5). It is very hard to leave without my valuables (027:7 +4). It is more than dangerous for my family to get there (033:33 +5). Sometimes when we go, people get injured or even die from falling trees (034:33 +4). We are very afraid that something terrible may happen to us (035:33 +4).

That would not be fair. Everybody deserves safety (043:19 -5). Every man can go there (025:19 -4). We faced Sidr once so we know that we all have to go to the shelter (060:31 -4). We have to save our lives, that is the most important (026:29 -4). Life is precious (037:31 -5). That is not true [that some people are not allowed into the shelters] (025:31 -5). Women are safe in the shelter (026:4 -5).

The discourse of male group A3 was similar to group A2 in the way that it highlighted the *right for all to occupy the shelter*. This group also emphasised the importance of *disaster training* and how one *never ought to leave their family behind*:

Everyone must go there, then after arriving we can discuss (029:15 +5). We are afraid of the cyclones (031:15 +5). I must go to be able to keep my family safe (015:15 +4). I have a responsibility towards my family (028:12 +4).

Unmarried women have the right to stay safe too (015:29 -5). This is wrong [that the shelter is not a place where I should be] (019:29 -4). That would be a bad decision [to not go to the shelter] (018:20 -5). The shelter is not just made for some people. It is a place for everyone, to enable them to be able to save their own lives (031:19 -5). Being safe is my first priority (015:19 -4).

Female discourse group A4 also brought up the importance of *natural early warning* messages. This is interesting as female group A1 also pointed this out. Group A4 also stated that it is *wrong for a man to evacuate and leave his wife behind*. The group did not think the shelter was particularly unsafe for women although they *did not feel safe* after

⁷⁹ The Bengali words ‘mulloban jinispotro’ were used to define ‘valuable things’ e.g. referring to mainly portable valuables such as documents of value (e.g. for property, assets and agreements) and jewellery. These words were selected as they had been captured as reasoning to delayed and non-evacuation behaviour in the 2014 and 2015 fieldworks.

arriving there. This group also stated that they will *not necessarily evacuate because a volunteer* urged them to:

I trust in my knowledge and experiences (011:40 +5). I will know first of all due to the nature (012:40 +5). Nature alerts us first (009:40 +4). I believe so, that has been my experience (009:30 +5). Intuition is great (012:30 +4). A wife should be a husband's first priority (011:35 +4). A husband knows how to handle things smarter (012:35 +4).

Women will not be beaten up in the shelter (010:4 -4). Nothing has happened so far so I do not agree (012:4 -5). No place is really safe but everyone can be there (011:4 -4). My house is safer than the shelter (010:14 -4). Nobody knows my destiny so I cannot be sure (009:14 -4). Everyone deserves to be safe. Why would not an unmarried woman deserve this? (012:29 -5). I rather listen to my family (011:34 -5). They can very well tell me to evacuate but I will follow my husband's instructions (012:34 -4).

Female discourse group A5 agreed that *women are not safe in the shelters* and that their *place is at home*. The women also clarified that the unsafety they feel has nothing to do with a potential fear of the shelter breaking. This group did not think that they lacked time to evacuate or got the warning messages too late. Out of the five, this is the only group disagreeing with the statement '**Evacuating is the right thing to do (15 -2)**':

Crowds create an increased risk for women so they are not safe in the shelter (057:4 +5). I agree with this, women are not safe in the shelter (017:4 +4). I cannot just leave my house that easy. I should try to stay until the end. I have a responsibility to my household, to my cattle, and my furniture (004:26 +5). I do not like the shelter. I must agree with this (017:35 +5). My house is like paradise to me (004:19 +4).

I usually get the warning quickly (004:23 -4). I never got disaster training from anyone (057:10 0). I could fall into danger anywhere. There is no guarantee that I will be safe in the shelter (004:14 -5). I do not think there is any chance of the shelter breaking (057:36 -4). I suppose one could say it is safe in terms that it is made out of concrete (057:20 -4). The shelter is located very far away from my house. I would have to face many difficulties if I would like to go there (004:17 -4).

6.3.2 Gender-analysis site A: Female 'natural' intuition and masculine responsibility

All the identified discourse groups in Dalbanga South were predominately male or female. Although both groups emphasised the importance of a functioning early warning system, only the female discourse groups (A1 and A4) pointed out the value of *natural*

early warning. The women described how they trusted and depended on natural warnings, their feelings and intuition to estimate when a cyclone was approaching.

The two male discourse groups (A2 and A3) on the other hand focused on their *responsibility* and *duty* over finances and personal security. This was illustrated in their descriptions around not being able to leave valuables or family members behind. The life and survival of a wife or family member was described as a *husband's responsibility*. This attitude was also confirmed by female discourse group A4. The psychological and emotional pressure that this duty implied was articulated by the two male groups through descriptions of *fear* and *worries* around dangers and risks during the evacuation such as falling trees.

Different viewpoints were revealed regarding *women's safety, right to exist in the shelter*, and appropriate *places for unmarried women*⁸⁰. On one hand, the male discourse groups emphasised the right to safety for all, and how the shelter provided a safe place for unmarried women. Female discourse group A4 on the other hand, agreed that all, including unmarried women, have the right to be safe but that no place is completely safe. The group argued that nobody truly knows their destiny, and the house felt safer for some. Female discourse group A5 elaborated further on women's (un)safety in the shelter. Some stated that they did not like the shelters as crowds implied a direct risk to women's safety. The concrete-built shelter may be strong and 'safe', but it was described as unsafe due to crowds and social risks. Women were therefore better off trying to wait out the cyclones at home. They also felt obliged to stay behind and care for the household, and the long distance to the shelter presented potential risks and dangers. The right thing to do was said to be staying at home.

These insights portray several important elements that identify gender-linked 'trapped' populations or support in explaining some women's immobility, and discursive reasoning

⁸⁰ References to 'unmarried women' also refers to 'unmarried girls' as in rural Bangladesh most females are likely to marry at a relatively young age e.g. before they turn 18 years old.

when deciding to stay behind. These attitudes around non-evacuation behaviour seemed to mainly inhabit the female discourse groups.

6.3.3 Discourse groups site B: *Safe uncertainty, fear of death and God*

Four discourse groups, three of them predominantly female (B1, B3 and B4), were identified on island Mazer Char explaining 48% of the study variance⁸¹. These discourse groups differed from the ones detected in Dalbanga South in a few ways. Overall, they focused more on *lack of space* in the shelter(s) and less on women's safety.

Female discourse group B1 emphasised how important a functional *early warning system* is including *natural warnings*. The group also urged that a husband should *not evacuate without his wife*, and opposed any encouragement of staying behind or not allowing everybody into the shelter:

That is how I will know when the danger is coming (065:1 +5). It is after getting the signal that we start to prepare (074:1 +4). It is only after getting the signal that we can start preparing (067:1 +4). We can read various natural signals. We for example observe the sound and movement of the river and how the crabs move (068:40 +5). One can understand the situation by observing these [natural warnings] (065:40 +4). Indigenous knowledge sometimes works (067:40 +4). A husband is responsible and must protect his wife (074:35 +4). No one should do such a thing [evacuate and leave his wife behind], that would be wrong (105:35 +4). A husband should keep his wife and family safe as he is stronger and more intelligent (069:35 +4). A wife is a husband's responsibility. He should handle the situation smarter (065:35 +4).

We have to leave the house to save our lives (065:38 -5). If we want to live we will have to go to the shelter (093:38 -5). Safety is my first priority (064:38 -4). I have to survive first (074:38 -4). If I want to save my life, I must go to the shelter (063:20 -5). We have to go to the shelter to survive (074:20 -4). If I want to survive I have to go (067:20 -4). Everyone can go there (075:31 -4). The shelter is made for everyone (076:31 -4).

Male discourse group B2, in their 20-30s, highlighted that there is a *lack of space* in the shelters. The men also urged that most *live too far from the shelters*, but yet, evacuating is the right thing to do. The men in this group did not think that the warning messages

⁸¹ Eigenvalue above 1.00 served as selection criteria for factor extraction, the selected un-rotated factors explain 48% of the study variance and 38 of the 62 Q-sorts load significantly on one or the other factor.

were irregular, that unmarried women should stay home or that women were not safe in the shelters:

We need more cyclone shelters (078:24 +5). There is not enough space in the shelter but we still have to go there (087:24 +5). The shelter is too small for everyone (085:24 +4). The cyclone shelter is very small (083:24 +4). If there is not enough space there, then people will stop going (089:24 +4). Where are we suppose to go when there is not enough space (091:24 +4)? This is one of the most serious problems. Most times we get the warning early enough but we do not manage to reach the shelter in time due to the distance (092:22 +5). It is because of the long distance that most people cannot come to the shelter (100:22 +5). It depends of course, but when the shelter is far, then anything can happen to us on the way there (087:22 +4). A cyclone shelter needs to be close to people's houses (089:22 +4). We need more cyclone shelters (082:22 +4). The shelter is quite far from us and people may die on the way there (085:22 +4). We could not go to the shelter because the distance is too long (086:22 +4). This is the first thing we should do, then we can think of others (086:15 +5). Everyone must pay attention to this (092:15 +4). The shelter is a safe for every person (096:15 +4).

An unmarried woman should be accompanied by her father or brother (085:29 -5). How could one possibly say that an unmarried woman is safe in the house (087:29 -5)? Unmarried women also have the right to live, and they cannot survive without going there (083:29 -4). It is for everyone (123:29 -4). They have the right to live (092:29 -4). Everyone can go to the shelter (091:29 -4). They are not safe in their homes either (082:4 -5). Safe or unsafe, they have the right to go (092:4 -4). We have not experienced anything claiming otherwise (086:4 -4). They are safe in the shelter (087:4 -4). Why would they not be able to go? It is very safe (123:4 -4). If they do not go, then how will they survive (083:4 -4)? I get the warnings regularly (086:18 -5). I get the warning messages quickly and clearly (091:18 -5). We usually get the warning messages (078:18 -4). I hear the warning loud and clear (089:18 -4).

Female discourse group B3 stated that *evacuating is the right thing to do* and that one should go to the shelter when encouraged to by someone in the village. This group also argued that *God is the one deciding who lives and dies*. Similarly, to the other groups the women did not think they got the warning messages late, or that unmarried women should refrain from evacuating to the shelter(s). However, while the other groups here urged that there was a lack of space in the shelter this group did not fully agree:

We need to go there for our safety (072:15 +5). It is a good decision (106:15 +5). This should be obvious if one wants to survive (073:15 +4). We have to save ourselves (119:15 +4). Allah can do what he wants as he is the Almighty (116:28 +4). Allah knows everything (120:3 +5). If Allah

saves me then I might be safe (116:16 0). We should try to save our lives, although, in the end it is all up to the will of God the Almighty (118:37 0).

I get the warning in time. That statement [about warning messages being late] is wrong. (106:23 -4). Volunteers, friends and family – we are all very alert (073:23 -4). I get the warning from the volunteers, TV and radio. There are no obstacles here (072:18 -4). Everyone has to go to the shelter (106:24 -5). There is enough space but it is not organised (120:24 -4). I have never heard of such things [that there is not enough space in the shelter] but I do not really know (072:24 0). She also has a life (120:29 -5). Unmarried women are human beings too (118:29 -4). Everyone is safe in the shelter (116:4 -4). We all have the right to stay in the shelter (116:19 -4).

The final female discourse group B4 in Mazer Char, mainly in their 40s, differed substantially from the other female groups in the following ways; (1) the group did *not think people depended on natural* warning signals, (2) they expressed a *strong fear of evacuating as terrible things may happen*, and (3) the group argued that it is *better to die at home* than in the shelter.

There were also similarities to the other female groups, such as that they also thought *it is wrong for a husband to leave his wife behind*. The women *disagreed* with the *shelter not being a place for women*, although simultaneously *agreeing that unmarried women should stay home* as anything could happen in the shelter:

If we try to go to the shelter after the cyclone has started, we could all end up dying on the way there (110:33 +5). There are cracks in the shelter (111:37 +5). I very much agree with this statement. I want to die in my house (102:37 +4). Your family may die. We have to stay together. If we die, then we all die together (109:12 +5). Anything could happen to unmarried girls (097:29 +4). He who has not experienced a cyclone may never understand its danger (109:16 +4). There should be more shelters, many people suffer as there is not enough space (111:22 +4). If the shelter breaks, we may all die (111:14 0). God is our superior (097:28 0). We do not trust people from other villages, so if they notify us about an approaching cyclone I would feel confused (102:27 0). I may go, or I may not go when a volunteer tells me to evacuate (109:34 0). Sometimes we do not go to the shelter although the volunteers tell us to evacuate (110:34 0). I know about the warnings but I cannot remember all the things that I am supposed to do (110:3 0).

The shelter is the only thing that can save us (109:20 -5). Most people do not wait or listen to natural early warning messages (102:40 -5). Everyone is in danger at the time of a cyclone so we cannot say that [some people are not allowed into the shelter] (111:31 -5). In the time of a cyclone we have to leave all and try to save our lives (111:26 0).

6.3.4 Gender-analysis site B: Male lack of physical place, female lack of social space

The four discourse groups on Mazer Char, three female (B1, B3 and B4) and one male (B2), shared some similarities with the attitudes detected in Dalbanga South. Female discourse group B1 also emphasised the *importance of natural early warnings*, while female group B4 here disagreed and claimed that people do not have time to perceive or pick up such signals. Although this group disagreed with the statement it still caused strong reactions among the women.

Only one male discourse group B2 was detected on the island. This group agreed that some people do not evacuate mainly due to the *lack of space and long distances* to the shelters. The men argued that people are afraid that they will not reach the shelter at all, or that it will be full when they get there. Female discourse group B3, however, disagreed with the lack of space in the shelters. '*There is space in the shelter but it is not well-organised*', the group claimed.

The male discourse groups disagreed with the Q-statements indicating that *women, and unmarried women* in particular, were *not safe in the shelters*, while female group B3 although agreeing, emphasised that women's *safety, and survival depended on God*. This discourse group repeatedly referred to the Almighty Allah to explain death and safety. The women expressed *feeling fearless* as they put *faith in God's hands*. Female group B4 was the only group that somewhat *agreed that unmarried women should not evacuate* as terrible things can happen. In this way, both groups made a *distinction between married and unmarried* women.

Female discourse group B4 was also the only group here describing being trapped or referring to their own immobility, while the other groups referred to others' disaster (im)mobility. This group did not only express *extreme fear* of the *journey to the shelter*, but they also stated that they *rather died at home*. The discursive narrative of this group circled around the *fear of dying* on several levels, such as the fear of *dying alone*, *dying in the shelter* or *dying on the way* there. The danger described also referred to the *risk of the shelter collapsing* due to cracks observed in the building. This group also described a *mistrust* around the *disaster volunteers' and villagers' warnings* of an approaching cyclones.

6.3.5 Discourse groups site C: Allah the decision-maker and home-based safety

Six discourse groups were identified in Gabtola, explaining 54% of the study variance⁸². The discourse groups here differed from most groups in Dalbanga South and Mazer Char in the way that their attitudes were strongly linked to religion and described being ‘trapped’ rather than observing others’ immobility.

Female discourse group C1 thought that it was better to *die at home than in the shelter*. The group also argued that people depended on *natural warning signals* and that *evacuating* was the *right* thing to do, although survival depends on *God’s will*. The participants said that *everybody is allowed into the shelter* but that they are *not safe* nor can they maintain their *privacy* or *religious obligations*:

If God wants to save us, he will save us at home (147:37 +5). [It is better to die at home] because I want to die with respect (172:37 +5). When there was no early warning system, we prepared after observing such natural signals. Even these days, we trust and believe in them (171:40 +5). I believe and trust in what the elders tell me (135:40 +4). Allah knows everything (173:6 +5). No one can change God’s decision. Allah knows everything (147:28 +4). Allah decides everything (173:28 +4). That women are not safe in the shelter is important in relation to religious privacy. Especially for Muslims (182:4 +4).

There are no limits around who is allowed into the shelter. Everyone can go (135:31 -5). I am a poor man, so if I have the right to be safe then why would not others have the same right (172:31 -5). The shelter is everybody’s property (181:31 -5). There are even two shelters located around our house (182:31 -4). I do get the warning messages and I have received them on a regular basis during the cyclones (147:18 -5). I receive the warning each time and very quickly (135:18 -4). I am always alert to the warnings. I cannot miss these announcements although it does not feel good to receive them (181:18 -4). Our volunteers and neighbours are very concerned about the strikes so they will inform us (135:23 -4). We have to leave our homes to save our lives. If we survive then we may be able to build another house (182:26 -5). I do not even trust our villagers so how could I trust people coming from other villages (171:27 -4). Women with family members are safe in the shelter (147:4 -4). Unmarried women face problems in the shelter. Young men sexually harass or ‘tease’ them and they cannot maintain their privacy (181:29 0). I do not understand the

⁸² Eigenvalue above 1.00 served as selection criteria for factor extraction, the selected un-rotated factors explain 54% of the study variance and 30 of the 62 Q-sorts load significantly on one or the other factor.

warning flags but I listen to the megaphone announcements (172:13 -4). If Allah decides to save us, then nobody can lead us down the path of death (173:16 -4).

Male discourse group C2 emphasised that it is *wrong to evacuate without their wife or family* and that *God decides who lives and dies*. The men also disagreed with the Q-statements that there was no point to evacuate and that one cannot trust outside villagers⁸³ when they urge you to move to the shelter(s):

I cannot leave her in any situation at all. She is my responsibility (151:35 +5). I cannot leave my wife behind as she has not other place to go (152:35 +4). Wives also need to live (140:35 +4). Where is she supposed to go? She is my responsibility (143:35 +4). I took my family members to the shelter first. If they do not survive then what is the point living (152:12 +5). How could I possibly live without my family (140:12 +4)? The death of every single man depends on Allah (143:28 +4). Allah knows everything, he is the most important to me (140:28 +5). I believe in Allah. Allah can do anything (149:28 +5). We believe in Allah, but Allah only helps those who helps themselves. So we have to at least try to survive (151:6 0). Many people did not evacuate to the shelters due to the lack of space, and then they faced tremendous losses (143:24 +5). Our main problem is that the shelter is so far away (149:22 +4). We cannot afford to leave our belongings behind, but we have to leave them for our survival. This implies great difficulties in such times (140:25 0). Life is more valuable than the things we leave behind, although it is first after surviving that we remember how important those things were to us (152:25 0). There is a lack of time, it is a very short amount of time (149:32 0).

One would be a fool to think that [there is no point going] (144:20 -5). This would be foolish. If we do not go, we will end up losing everything (151:20 -5). We could say that but the reality is that we have to go there (149:20 -4). This is foolishness, you will end up dying thinking like that (140:20 -4). We are all truthful about these things, nobody would give false information about a cyclone strike (140:27 -5). I got information plenty of times from my neighbouring villagers (143:27 -5). I get the warnings regularly (143:18 -4). I receive the warnings regularly and they are important to our survival (149:18 -4). I get the warnings on a regular basis and quickly (144:18 -4). We understand some things about the warning system, but we need to learn more (151:13 0). I know how to prepare, but it is not enough if I think about the seriousness of the warning (143:13 0).

⁸³ The mistrust expressed by the men often had to do with suspicions around them being thieves, e.g. that they tried to get them to evacuate to the shelters so that they could rob them of the belongings they had left behind in the rush.

Male discourse group C3 argued that *nobody wants to leave their belongings behind*⁸⁴, and that although *God decides who lives and dies* it would be *wrong for a husband to evacuate without his wife*. The participants disagreed with the Q-statements that there was *no point evacuating* or that they got the *warning messages too late*. They also disagreed that people *depended on natural warning signals*:

Nobody wants to leave their belongings behind. They try their best to leave behind what they can in accordance to their very best efforts (166:25 +4). I think that in our village everybody brings their belongings with them (168:25 +5). Nobody can leave their family behind, family is a man's liability (167:35 +4). No one can do this [leave their wife behind]. Everyone should understand that is not an option (165:35 +5). I know we are under a lot of risk while we are on our way to the shelter during a cyclone strike (156:33 +5). Everybody knows that there is not enough space in the shelter (166:24 +5). It is true that there is not enough space in the shelter. Plenty of death has occurred due to this reason (165:24 +4). We care about each other in this village, so this is true (170:5 +5). Some people live very far away from the shelters. This is a big problem (156:22 +4). This is true. My home is close to the shelter but that is not the case for everyone (170:22 0). Thieves may come out in the time of cyclones (166:2 0).

I always get the warning in time (166:23 -5). This statement is not true. I always get the warning messages in time (168:23 -5). I usually get the warning signal in time, but perhaps others do not (165:23 -4). There is no other way. I have to leave my house and go to the cyclone shelter (170:20 -5). A person who thinks like this may not understand the importance of the shelter (165:20 -5). This is wrong. The shelter is essential for us (167:20 -5). Nowadays, the climate has changed so the natural signs are not really working anymore (170:40 -4). People may die if they think like this (166:26 -4). I never know whether I will reach the shelter safely. My neighbour died on his way there (156:3 0).

The participants in female discourse group C4 agreed that their *place was at home* and that there was *no point in evacuating*. The group *confirmed receiving the warning messages in time* and that everybody was *allowed into the shelters*. As *God decides who lives and dies* they did *not feel afraid of dying* in the cyclone strikes:

⁸⁴ The Bengali word '*jinispotro*' was used to define belongings e.g. can refer to portable and non-portable things such as possessions, items, goods. The wording was based on respondent's reasoning around delayed and/or non-evacuation behaviour in the 2015 and 2015 fieldworks.

I do not like crowds and gatherings. I want to stay in my house up until my death (179:26 +5). My wish is to die at home (169:26 +4). My home is everything. So I want to stay in my house (139:26 +4). I have to believe in this as a Muslim. That God decides who lives and dies (169:28 +5). Only Allah can decide who lives and dies (139:28 +4). I lost my son, so I do not want to go to the shelter (139:20 +5). I do not want to go anywhere. I do not like the chaos. I want to stay in my house up until the day I die (179:20 +4). There is no space. I feel suffocated in there (180:19 +4). I do not want to go to the shelter, purely because of this [lack of space] (180:24 +5). Sometimes I think this is true, that unmarried women should not go to the shelter, but I suppose you cannot stop anyone from going (179:29 0).

I feel no fear. I did not even get hurt in Sidr (139:16 -5). I have no fear of death. Allah created us and one day he will take us away (179:16 -5). It is normal that one would get afraid of dying, we have witnessed many dead bodies in our village (180:16 0). The volunteers and our neighbours are quick to inform us (139:18 -4). We get the signal on time (180:18 -4). There was even an announcement two days prior to the cyclone (180:23 -4). Everyone is allowed in (169:31 -4). There is no maliciousness in my mind [everyone is allowed in] (179:31 -4). Everyone has to run for their lives, so there is no time to steal from others (139:2 -4).

Male discourse group C5 argued that *evacuating is the right* thing to do, that *disaster preparedness is helpful* and that one ought *never to leave their family behind*. The group still urged that anything could happen on the way there, and that the shelter could collapse during the storm. This group *expressed strong disagreement* with statements around there *not being any point evacuating* and that *my place is at home*. The participants also disagreed with having difficulties leaving their valuables behind or that people would think of stealing them during a strike:

If we get training, we will be better prepared (158:10 +5). The training is very important as it helps us understand what to do, and what not to do. It gives us a complete overview of how to prepare (134:10 +4). No one can do this. I know the true value of family. My family is not here (157:12 +4). Everyone must reach the shelter safely (157:15 +5). Early warning messages are the most important thing for us to be able to know when to start preparing (134:1 +5). I know just how to prepare. The volunteers taught us about the flags (134:13 +4). This is true, the shelter can break down anytime (163:36 +5). Anything can happen on the way there (163:33 +4). Anything can happen to us on the way to the shelter. We do not have a clue (158:3 0). I do not know my fate (158:6 0). Anything can happen anywhere. People are not safe (163:39 0).

If one wants to live, he will have to go to the shelter (163:26 -5). Those who think like this [that their place is at home] are fools (157:26 -5). Thinking like that is wrong (158:26 -4). This is wrong, we will die if we do not go (158:20 -5). Who told you that? Should I sit at home and just wait to

die (134:20 -4)? The shelter provides us with safety (163:20 -4). Since Sidr, I have been getting the warning messages quickly (157:23 -4). When people are facing life and death situations, who would take their valuables (134:7 -4).

The last mixed discourse group C6 in Gabtola is fairly young, under the age of 34. This group argued that *evacuating is the right thing to do*, that they would *evacuate if a volunteer* told them to and that the preparedness *training is useful*. The group also thought *unmarried women should not evacuate* to the shelters as it would not be *better to die at home*:

Evacuating is a great lifesaver (159:15 +5). To keep ourselves safe we have to go to the shelters (138:15 +4). We can learn many things around how it is important to prepare during a cyclone (138:10 +4). The volunteer has the most updated information, so I would follow his advice (138:34 +5). We need more space in the shelter (159:24 +4). We are only humans. God knows best (159:6 0).

Although I am an unmarried woman, I still have the right to be safe (138:29 -5). Everyone has the right to be safe. She has that right to live too (138:35 0). We get the warning messages quite quickly through the radio or mobile phones (159:18 -5). I have to at least try. I cannot give up that easy (138:37 -4). Who said such a thing? It is my place and the shelter is where I will be (159:19 -4). I do not wait for others in this matter (138:11 -4). I am a bit confused, sometimes we need to go, but sometimes we do not (159:20 0). I do not know whether this is true or not [that people depend on natural signals]. However, the Elders do argue such things (138:40 0).

6.3.6 Gender-analysis site C: God wants men to go but for women to stay

All six identified discourse groups here, two female (C1, C4), three male (C2, C3, C5) and one mixed (C6), referred to God's power to explain why they ranked the Q-statement extremes as they did. Most religious descriptions were linked to people's reasoning around life and death outcomes. This religious attitude was not as clearly detected in the other two study sites.

An important distinction between female and male attitudes was identified. The male and mixed discourse groups (C2, C3, C5, C6) referred to how God helps those who help themselves, so oneself must evacuate, while God will protect and keep you safe. Although female discourse groups (C1, C4) reproduced similar attitudes around God's protection, non-evacuation behaviour was encouraged for women. God decides who lives and dies.

The Almighty will therefore make sure to keep women safe no matter where they are. The women expressed how it therefore was better to wait out the cyclone at home as they felt safer and more comfortable here. They argued that if their time had come, and they were to die, they would do so whether they evacuated or stayed behind. Staying at home was therefore better as they could then die in a respectful and safe manner.

Another interesting element was how statements such as **'There is no point going to the shelter' (20)**, **'My place is at home' (26)** and **'The shelter is not a place where I should be' (19)** angered the male discourse groups (C2, C3, C5). Its *'foolishness'* upset them, while female group C4 agreed and linked the statements to *security* and *safety*. The women argued that they did not like the shelters and did not feel safe due to the *crowds*, *people gathering* and *chaos*. One woman even said she felt as if she *could not breathe* or that she was *suffocating in the shelter* and therefore knew that it was not a place where she should be. Another woman stated that she had stopped going to the shelter after she lost her son.

The shelter was described as an *unsafe place for women* by several female discourse groups (C1, C4). Female group C1 linked the lack of safety back to religion and said that the lack of privacy for Muslims was a serious problem. Another clear distinction made by the female discourse groups (C1, C4) was the one between *married and unmarried* women. All discourse groups, male as well as female, stated that everybody was *allowed into the shelter*, but these two female groups said that women, and *unmarried women in particular* did *not belong in the shelter* or should not evacuate as they were not safe. Nobody would try to stop them from going, but they would face problems, such as younger men sexually harassing or 'teasing'⁸⁵ them, as well as lacking personal and religious privacy.

⁸⁵ 'Teasing' in a South Asian context is a euphemism referring to 'Eve-teasing' used to describe sexual harassment and molestation of women by men, often in public places and by strangers. As Eve refers to the biblical creation story, and refers to the temptress 'nature' of Eve it places responsibility on the woman and minimises the seriousness of the offense. Alternative terms therefore ought to be encouraged.

6.4 Discussion

Out of the 15 discourse groups identified in the Q-analysis, eight were predominantly female, six were male and one mixed (see Table 6.2). The groups describing ‘trapped’ populations either referred to their own immobility or others being ‘trapped’. A few explanations behind the gendered evacuation immobility were put forward that this section will elaborate around with the support of the storytelling data.

6.4.1 Male and female spaces and places of (un)safety

Clear distinctions were made between female and male places of safety, as well as potential dangers for women and men. Before elaborating the binary opposites of ‘safe and unsafe’ spaces, a few things need to be clarified; (1) the Bengali word for ‘evacuation’ translates into ‘*going to a safe place*’ but it does not necessarily refer to a cyclone shelter⁸⁶, and (2) although the three study sites all have shelters located within the village area, other places are sometimes referred to as ‘safe places’. These include other strong buildings, such as schools and mosques, as well as elevated land, mounds and trees. Evacuation therefore simply means trying to *move to a safe place* outside of the house.⁸⁷

Extract 6.1⁸⁸

His family decides to go to a safe place; elevated land or a cyclone shelter. If their residence is resilient to cyclones then they must stay back and invite their neighbours there. /.../ When his family decided to go to the cyclone shelter an unexpected flood pulled their son away. After the cyclone, his family and the villager started looking for the boy. After a while, they found him dead (CSS DLM 2016).

⁸⁶ The Bengali expression generally used by people in the study sites when referring to cyclone evacuation is “*nirapod jaygai jaoa*” which in direct translation means ‘*going to a safe place*’.

⁸⁷ See storytelling extracts 6.1-6.3 for more details.

⁸⁸ This chapter uses the following referencing system (method, study site/informant gender/age data conduction year), or to give an example, (LHI DLF60 2014) refers to Livelihood History Interview (LHI), Dalbanga South (DL), Female informant (F), 60 years old at the time of data collection taking place in 2014.

Extract 6.2

He could not go to the shelter as it is very far from his house. He saved his life with the help of a tree. After the flood wave started to go down he climbed down and went to the shelter (CSS MCM 2016).

Extract 6.3

The wind was incredibly strong. The trees started to break and fell on top of the houses. The children started to scream. After that, the water came flowing into the house. When the water came in, my soul ran away from me. It does not matter if there is a heavy storm and it breaks my house. We can take shelter under a tree if we need to but the water? What can we do? Where are we supposed to go? We could try to swim but I do not have that much strength to swim (LHI DLF60 2014).

Concepts such as ‘*distance*’ and ‘*location*’ in relation to the cyclone shelter were important to estimate potential risks. If the shelter was located far away from the house, or closer towards the river, it was at times described to be safer to either stay at home, or to move to a ‘safe place’ closer to the house, but further away from the water.

These dangers applied to men as well as women, and were narrated by female as well as male discourse groups.⁸⁹

Extract 6.4

Many families live far away from the cyclone shelter. They can not come here during the cyclones so there need to be more cyclone shelters (CSS GBM 2016).

Extract 6.5

I think I am more vulnerable because my house is located at the first line of houses after the embankment. If I could manage to get some money, I would try to find a safe place. I would go there and buy some land. /.../ I would work so hard to pay back that money - every single cent of it. I just want to put my family in safety, in a place where I do not have to worry about them dying in a cyclone strike or flood (LHI GBM38 2014).

⁸⁹ See storytelling extracts 6.4-6.6 for more details.

Extract 6.6

I do not go to the cyclone shelter. There is no point in going to the cyclone shelter as it is located so close to the river. It is better to hold onto a banana tree rather than trying to get to the shelter as it is located just next to the the river. I live a bit further away from the river so if I go towards the river to save myself I may end up dying anyway as I would be walking towards the river. It is better to stay at home. /.../ During cyclone Mahasen, people got really scared. They did not feel safe in the cyclone shelter. The shelter was shaking and the water from the river got so high with the storm that it seemed foggy outside. It is better to stay at home than go to the shelter. /.../ The condition of the shelter is not good enough to withstand the strong winds of the storm. It was shaking so people thought the shelter was about to collapse. If it had collapsed, then we would all have died. /.../ The cyclone shelter is not built very well. The basement and the floors are quite ok but the walls are not good enough. /.../ Those who live closer to the riverbank may go to the shelter, but we are living far from the river so we do not go most of the time. I went there once and I got my lesson. In my opinion it is better to stay close to the banana trees than to go to the shelter. /.../ There are just three small rooms in the shelter that hardly fit one hundred families. How is it supposed to fit all of us? /.../ Those who get there first will get a place, the rest of the people will have to try to sit on the balcony or take shelter on the roof top. /.../ When we rush to the shelter during a cyclone we often hurt ourselves. The road to the shelter is can be dangerous and it takes a long time to get there. Once a guy was bringing his wife to the shelter and a tree fell upon her. The couple managed to reach the shelter, but the wife died after two years of suffering from the injuries. I also believe that the Angel of blessing rather lives in the house (KES DLF61 2016).

Other ‘gender-neutral’ dangers or ‘spaces of unsafety’ appearing in the descriptions referred to the infrastructural state of the cyclone shelter. Several discourse groups mentioned that the shelter was not safe or that it was safer to stay at home as the shelter might break on them or fall apart in the storm.

In some of the storytelling sessions, these narratives were linked to wealth and poverty. The respondents described both how the village was poor as well as how ‘rich people’ within the villages received special treatment. The stories suggested that the *village was*

so *poor* that the shelter did not even get repaired or prioritised, or that if they built a new shelter it would end up in front of '*rich people's houses*'.⁹⁰

Extract 6.7

We are poor so we are not of so much importance, even our cyclone shelter is broken. If there, for example, in the future, is a possibility of building a new cyclone shelter then it will be built in front of houses looking like your house. I mean in front of rich people's houses. /.../ The cyclone shelter here in this area is damaged. All of the good shelters or two-three-storey buildings are located on the other side of the river (CSS MCM 2016).

Women were unsafe or increased their vulnerability as soon as they stepped outside the house to move towards the shelter. The binary opposites appearing in these descriptions separated women from men through their clothing, but also through their personality traits. The narratives also compared women with children. Women were described as '*weak and afraid*', and like children not knowing how to swim, while men were referred to as '*brave and experienced*' since they work outside the household. Fishermen even faced the storms out on the open ocean.⁹¹

Extract 6.8

Women and children are mentally weak. They get afraid easily. The children cannot swim. Sometimes mothers hold onto their children, and that may cause the death of them both. Men are brave and have experienced the storm out in the ocean, while women do not have experiences outside the house (KEI MCM30 2016).

Extract 6.9

Nevertheless, women here wear sarees most of the time. The sarees are usually 10-12 feet long, so they cannot swim wearing this long piece of cloth. Men, on the other hand, might be wearing a simple piece of clothes like a lungi. They can pull their lungi up if needed and therefore swim or stay in the water longer, they can even take shelter in the trees (KEI MCM30 2016).

⁹⁰ See storytelling extract 6.7 for more details.

⁹¹ See storytelling extracts 6.8-6.10 for more details.

Extract 6.10

The women die because of their hair and clothing. They are also weak emotionally. The children on the other hand are always fond of their mothers. They cannot leave them in such a situation. That is why they also become victims of the disaster (KEI GBM60 2016).

The binary opposites or distinctions also separated *unmarried and married women*. These descriptions became most obvious in the narratives around the shelter being unsafe. Unmarried women were illustrated as more vulnerable than women in general. The danger here referred to the risk of them being '*dishonoured*'. This could potentially eliminate marriage proposals in the future and they would then become an economic burden to their families. Female as well as male informants argued that *unmarried women should not go to the shelters*, or that they did not belong there: "*It just does not feel right*", one male respondent explained when asked why.⁹²

Extract 6.11

It is not right [for unmarried women to go to the shelter] because it could create problems. /.../ I do not like women going to the shelter. It just does not feel right. Wherever they go, things happen (LHI GBM38 2016).

Few respondents explained further what they meant by '*dishonour*' or '*lack of privacy*'. One man mentioned that younger boys may *sexually harass* unmarried women and girls in the shelter(s), another male respondent explained that '*thugs with bad intentions*' were not allowed into the shelter(s). During one of the Collective Storytelling Sessions, a tragic story was told of a young educated girl with big hopes and dreams for the future who gets *assaulted or raped in the shelter*. As the girl cannot bear to live with the fear of losing her honour, she survives the cyclone only to *take her own life*.⁹³

Extract 6.12

There are some local thugs who are told not to go inside [the shelter] because of the women. They are told to stay on the balcony, roof or some other isolated place. They are prohibited to come

⁹² See storytelling extract 6.11 for more details.

⁹³ See storytelling extracts 6.12-6.13 for more details.

inside. The general mass of people usually has bad intentions, even in the time of cyclones. /.../ We decide in the time of the cyclone, as they get to the shelter, if they are allowed to enter or not (KES MCM24 2016).

Extract 6.13

Though the girl is educated, the villagers are not. She knows how the early warning system works and how to prepare. She informs the villagers that they need to go to the cyclone shelter and what necessary steps to take before going there. She helps the children, elderly people and pregnant women to the shelter, she also suggests they bring their valuables to the shelter. In the end, those who are strong go to the shelter. The girl also advises them to bring dry food so that they have something to eat later on, and matches to stay warm. /.../ When the girl gets to the shelter she tries to find a safe place where no boy can harm her. As she is educated, she has told everyone to please make sure they are safe. ‘If you feel that you are safe in a place, then do not move or go anywhere else’ she said. This is also what she told her parents. /.../ Anything can happen in the cyclone shelter. Boys and men can try to harm her by holding onto her hands, or by covering her mouth [signaling so she cannot scream or call for help]. The boys and men from different places try to disturb her, although she brought her parents with her for protection. She already knew that women had to be careful of this. /.../ The girl decided not tell anyone what had happened as she was afraid of losing her honour. She thought to herself, that she is an educated girl who was planning to create a better life for herself but now, because of this, it is all ruined. So she decides to commit suicide and kills herself by drinking poison (CSS DLF 2016).

The story sends out an alarming signal regarding women’s unsafety and inability to ensure their safety in the shelters. Even when they are well-aware of the risks and do all they can to avoid getting hurt. The girl in the story did not only evacuate to the shelter with her parents to make sure she was safe, but she also made sure to find a safe *place* in the shelter upon arriving there. A safe place is *a place where no boys or men can harm* her. She even warned other women of the potential dangers and risks of being ‘harmed’ by men and boys, and yet she ends up getting hurt. Staying behind in the safe space of the home and privacy where no ‘outsiders’ are allowed is portrayed as the safest bet.⁹⁴

Descriptions involving dishonour were not only found in stories of unmarried women getting raped in the shelters, but they were also captured in stories of women getting hurt

⁹⁴ See storytelling extract 6.13 for more details.

on the way to the shelters. ‘*Bad luck*’ entered stories referring to the death of husbands of young wives or girls, and the bad luck being *passed on to their children* who they are forced to abandon in order to re-marry. These abandoned children were described ending up choosing the *wrong path* in life, or start doing *bad things* for a living. Another story referred to finding the bodies of a dead baby and her mother after a cyclone strike. The woman was pregnant while evacuating and is thought to have given birth during the storm. The story indicated that *not ‘even’ pregnant women* are spared by the disasters.⁹⁵

Extract 6.14

In many cases, the under-aged and young wives who lose their husbands during cyclones get married again. They re-marry and leave their children. Often, these kids grow up choosing the wrong path in life and start doing bad things for a living (CSS MCF 2016).

Extract 6.15

Even pregnant women got washed away with the flood. A woman gave birth to a baby by herself after getting washed away. She was found half naked and dead after three days. They also found her new-born baby next to her. Unfortunately, the baby died too (CSS GBF 2016).

6.4.2 Educated knowledge or faith to accept destiny

There are several references to knowledge and education in the descriptive narratives. For example, the girl who was sexually assaulted or raped in the shelter was educated and knowledgeable and therefore informed others about potential risks and what they ought to do to stay safe. The generalisation in the stories referred to *the educated being the ones with knowledge*, while villagers mostly were described as lacking the ability to understand how to prepare for the disasters and how to avoid risks.⁹⁶

⁹⁵ See storytelling extracts 6.14-6.15 for more details.

⁹⁶ See storytelling extracts 6.16-6.19 for more details.

Extract 6.16

Those who are educated have knowledge on different issues, but we do not have this. We have no educational institution here other than the primary school. In your area you have the institutions so that you are educated and know different things (CSS MCF 2016).

Extract 6.17

We got the warning, but most of the time these signals are not very effective. We estimated it wrong that time [during Sidr]. Unfortunately, the warning was right (KEI GBM38 2016).

Extract 6.18

Sometime before Sidr there was a cyclone warning, but nothing happened that time, so people did not believe that anything would happen at the time of Sidr either. Those who were educated and more aware went to the shelter early, but the others did not. When the water level started going up everyone realized what was about to happen but then it was already too late. Some people still tried to reach the cyclone shelter, and some made it there, but others got stuck in their houses with the water level rising. Other people climbed up the trees to save their life (KEI GBM50 2016).

Extract 6.19

If we had only left earlier, when the water level was lower. If we had only started preparing in time, or left the cows behind. If we had only known what could happen, she would be with us today. Now I plan in time for the possibility of a cyclone. I buy food for 1-2 weeks and I leave the cows behind. Nobody wants to leave them behind but I have learned my lesson (LHI MCM80 2014).

The binary opposites around who has the knowledge were also reproduced as female and male. To give an example, the husband was described in relation to his wife as '*smarter*', '*more intelligent*' and '*knows better what to do*'. This knowledge however sometimes came with responsibility. A few discourse groups stated that as a man knows what to do he should not leave his wife behind, while some female discourse groups argued that they primarily follow the instructions of their husbands, and secondly the orders of the disaster

volunteers. The stories also described the potential punishment that may occur when wives do not reason with their husbands.⁹⁷

Extract 6.20

I told my wife to go to the cyclone shelter but she would not reason with me. /.../ Even when the storm started increasing and things turned from bad to worse, the main worry was still the cows. /.../ As the water level was going up, we did not have much time /.../ my son filled a bag of money, 30.000taka or so, and attached it to the inside of his lungi [traditional male clothing]. We headed off to the cyclone shelter my wife, my two sons and I, but as we got outside we realized that we would never be able to make it. It was too far away and the water was flooding in with an enormous force. /.../ At one point the stream caught the moneybag so my son let go of his mother's hand to try to save the money that had gotten pulled away by the water. When he let go of her hand, the force was too much for my younger son to handle himself, so he lost the grip of her hand. The water was too deep, its force too strong. We caught up with each other around a big tree. 'Where is your mother?', I asked. 'I lost her', he said. We found her body the next morning (LHI MCM80 2014).

Another set of competing discursive attitudes were captured in the discourse groups, and in particular those identified in Gabtola. These attitudes put religion and God's will before knowledge, education and disaster preparedness, which encouraged different behaviour by women and men. The male discourse groups described how *Allah will save him who tries to save himself*, while the female discourse groups at times referred to evacuation as 'pointless'. The male discourse groups on the other hand said that not evacuating would be 'foolish'. In some of the female narratives, it ultimately did not matter whether you would stay or go as your destiny is pre-determined.⁹⁸

Extract 6.21

Even the Devil's heart goes soft under these circumstances. In this situation he goes from door to door to warn the villagers. He tells them to go to the shelter and advises them to listen to his words.

⁹⁷ See storytelling extract 6.20 for more details.

⁹⁸ See storytelling extracts 6.21-6.24 for more details.

As he approaches each and every door, he realises that most of the people have already died. He is the only one left standing and therefore ought to save his own life (CSS GBM 2016).

Extract 6.22

It is all in Allah's hands, who will survive and who will die. For example, in this village there was a mother and a child who were running towards the shelter when they got hit by the storm-surge and therefore got separated. Later on, she felt some hair touching her feet only to find out that it was her child. She grabbed hold of a tree to survive. When the storm stopped, people found her sitting at the top of the tree with her child. People think that this is a miracle, how she and her child survived the cyclone. So it all depends on Allah (CSS GBM 2016).

Extract 6.23

It all depends on Allah, not only the cyclone shelter. Even if you take shelter in an iron cage, if it is Allah's will, I would die. /.../ We depend on Allah [not early warning systems] (LHI GBM38 2016).

Extract 6.24

At the time of a cyclone, no one cares about others. They only think about themselves. Normally, girls face more problems during cyclones because of how they dress, and they get hurt on their hands, legs or somewhere else. Sometimes, trees even fall on people and they die. There is a mass grave that I know of. I have seen many dead bodies in my life due to the cyclones. These people did not even get proper burial clothes. Everyone's lifetime is already decided upon by God. Allah decides whether you will die or live (CSS DLF 2016).

6.4.3 The importance of emotions, fear and mental trauma

Strong feelings or emotions, such as fear, panic and mental trauma, are other immobilising elements portrayed by the discourse groups. People express being terrified of dying on the way to the shelters, and often mentioned having witnessed others getting hurt or dying on the way there. The traumas that devastating cyclone Sidr left behind, on one hand resulted in people panicking to the extreme level that they accidentally stepped on and killed children while trying to get into the shelter. On the other hand, the trauma left people anxious and emotionally paralysed to the extent that they stopped evacuating. Strong emotions, such as extreme fear of dying, after having witnessed a dead family member can end up 'trapping' people mentally. One respondent who report having lost

his wife and all his four children in Sidr argued that he does not go to the shelter, and that it does not feel right to him when women go there.⁹⁹

Extract 6.25

In some places, people have died when they all tried to get into the cyclone shelter. Some people even stepped on children in panic, quite a few children have died due to such circumstances (CSS DLF 2016).

Extract 6.26

Sidr took place on a Thursday night. It was raining during the whole day, not too much and not too intense, but back and forward. Later in the evening, the rain and wind started to increase and the flood came in around 9pm. The water level started rising. It filled my house with water. I got stuck in my house with my wife and my children and the house was going under water. We had water going all the way up to our heads, water pouring into our mouths. A person can stay under water for maximum two minutes, maybe even less, but I was under water for at least three to four minutes. /.../ I could not see any of my family members. It was dark and wet. /.../ I somehow managed to break the roof of my house. I do not know where I got the strength from, but I remember my hand going through the roof and out of the house. /.../ I lost the grip of my son's hand. He got pulled away from me together with the rest of my family. /.../ After Sidr I have become anxious. I cannot seem to relax. Especially during days like this /.../. I feel the breeze coming in from the sea and it forces me to remember. I cannot stand that breeze anymore. /.../ I had a wife, two sons and two daughters. They were my family. All died in the Sidr, all except me. My current wife also had a husband, a son and a daughter. They also died in the Sidr. /.../ I am the only one who survived out of my family. I survived but my head and my mental state did not. I am not stable. If a person in a household faces such a tremendous loss, he gets frustrated. All my four children and my wife died, I am the only person alive. How could I possibly be mentally stable? I have fallen apart (LHI GBM38 2014).

Extract 6.27

These hazards are repeated every year. Beyond the mental trauma that they leave behind, the worst impact upon people are the loss of human life every year. Money and time can improve damages but they cannot return a lost life. /.../ I have lost many things that were emotionally attached to me. Some gifts from beloved ones, and I lost other important things. They were my world. You

⁹⁹ For further details, see text extracts 6.11, 6.17, 6.22 and 6.25-6.27.

can provide me with a huge sum of money, but you cannot return those things. They were priceless. At the same time, many of my relatives died screaming and crying. I failed to help them, to save their lives. This will never leave me happy. Nothing you could try to provide me with would be enough. /.../ Physical damage and loss of resources that were emotionally attached to us is an unforgettable loss. /.../ Some internal loss may also take place. /.../ During the cyclone some people got injured internally, in such an important organ that he or she may face complications afterwards. They may approach doctors for treatment in secret but some losses cannot be healed by doctors. /.../ People face mental problem because of these traumas. Family problems arise as a result, and they grow larger by each day. When we talk about floods, it is the economy that receives most importance. /.../ The only doctor that came to see us [after the cyclone] were medical specialists. They were not being able to give neither mental or psychological support to the victims here. /.../ We noticed that some children buried their toys here and there and we often heard them saying 'Stop the game! Otherwise, the cyclone will come'. /.../ From the children's behaviour we sensed fear. They often repeated; 'When will the flood strike again? Will I have to go again then, or will I die next time? If it happens again, then please promise not leave me'. /.../ Their parents assured them that the flood will not come back and that they should go back to living life the way they had done before the disaster (KEI GBM60 2016).

This chapter identified various notions around why people may end up 'trapped' when the disaster strikes. The notions, and their reasoning are complex components moving beyond the economic framing of Trapped Populations (see Ayeb-Karlsson et al. 2018a). People do not only stay behind or end up immobile as they cannot afford to leave their belongings behind. The impacts of poverty are important, but appear incorporated in the binary opposites of social positions and gender-roles, such as between those who possess the knowledge of when to evacuate, how to prepare for a disaster, and those who do not; or those who know how to prepare but should not evacuate and therefore get punished or harmed in the shelters. These are insightful descriptions in the storytelling sessions of immobilising attitudes.

Other immobilising elements include mental ill-health, such as post-traumatic stress disorders and fragmented wellbeing. These ideas have slowly started to make their way into the climate policy debates, such as the distinction between economic and non-economic losses and damages in UNFCCC policy language (UNFCCC 2013, 2015). The fragile state of a man expressing symptoms of post-traumatic stress or emotional 'weakness' does not fit well with the brave and experienced stereotype of the fisherman

fearlessly facing cyclones out on the sea. This research topic is relatively unexplored, and should be prioritised.

6.5 Conclusion

The mixed-methodological approach of combining the use of Q, survey questionnaires and storytelling sessions to carry out a discourse analysis has proved to be effective and useful. The discourses demonstrated significant insights on gender-roles and the distinct expectations of male and female decisions and behaviour. The method revealed the social and psychological reasoning why men and women decide to evacuate or stay behind. The findings showed how a gendered system of power affected women's decisions in particular about whether or not to evacuate to the cyclone shelters during cyclone strikes in Bangladesh. Women ended up socially, psychologically and emotionally 'trapped' in their homes.

The discourse groups inter-actively described what it can mean to be 'trapped' as well as how people may be emotionally or mentally constrained in their decisions to move/evacuate to the shelter(s). Not all these notions around immobility were gendered but psychological traumas, such as having witnessed someone dying in a previous cyclone affecting women as well as men.

The different reasons why people may end up 'trapped', e.g. women and men, unmarried and married women, poor and rich villagers shed light on the conceptual wording of *Trapped Populations*. The descriptions captured in the analysis do not refer to a homogenous group of people or *population*. This create unnecessary conceptual confusion where *Trapped Individual* or *Person* may be preferred.

The gender-analysis proved that social norms, discourses and emotions around what is considered to be right and wrong affect women and men differently. The repetitive function of discourses and the way meanings, norms and values are socially reproduced end up constraining women's mobility. What is accepted social behaviour, or an accepted social space for a man, may not be 'acceptable' for a woman. To give an example, not one single discourse group mentioned the possibility of a man getting 'harmd' by another person in the shelter, while this is many women's deepest fear. Similarly, no

discourse groups concluded that a man may not 'belong in the shelter', nor that he would generate 'bad luck' while evacuating there.

This chapter showed that these discourses within which people live end up 'trapping' people differently. They are transferred into social, psychological and emotional shape, and transformed into people's subjective reality and identity. In other words, when the disaster strikes, all do not have the same ability to move.

Chapter 7

Conclusions and Recommendations

7.1 Introduction

The aim of this doctoral research was to investigate existing discourses around (im)mobility in the context of climatic changes and environmental shocks. This was done (1) conceptually, through a textual discourse analysis of the use of ‘trapped’ populations within academia, and (2) empirically, through a discursive mixed-method study in Bangladesh.

Firstly, a textual Critical Discourse Analysis (CDA) reviewed how the concept of Trapped Populations was framed within academia. Secondly, an empirical discourse analysis was conducted on a large set of mixed-methodological field data gathered in Bangladesh. The empirical data on urban and rural (im)mobility decisions and behaviour helped detect conceptual and academic research gaps in the current notions of ‘Trapped Populations’. The empirical field study conducted between the years of 2014 and 2016, included an experimental combination of Q-methodology, storytelling and open narrative sessions as well as a survey questionnaire.

The following research questions supported the framing of the three analytical chapters (e.g. Chapter 4, 5 and 6). In the textual Critical Discourse Analysis (Chapter 4), the conceptual focus around the birth, development, and use of Trapped Populations lead us to investigate:

(Q: 4.1) Why the concept appeared when it did?

(Q: 4.2) How it has been shaped by environmental migration scholars to date?

(Q: 4.3) What different way(s) the term is currently being used?

(Q: 4.4) If there is a potential for direct or inadvertent policy abuse/misuse of the concept in its current form?

The first empirical discourse analysis on urban immobility (Chapter 5) inquired:

(Q: 5.1) If any of the discourse groups¹⁰⁰ wanted to move but felt like they could not leave or escape the settlement; e.g. identified themselves as ‘trapped’?

(Q: 5.2) How they described their immobility (moving beyond economic explanations); e.g. why they ended up immobile?

(Q: 5.3) If the narratives revealed different notions of being ‘trapped’?

Similarly, the second empirical discourse analysis (Chapter 6) on rural evacuation immobility elaborated around how the role of gender could support in explaining:

(Q: 6.1) If any of the discourse groups described a desire to move/evacuate to the cyclone shelter(s) but felt ‘trapped’ or constrained to do so due to their social position?

(Q: 6.2) How such social immobility was described and whether it affected men and women differently; e.g. why people ended up ‘trapped’?

(Q: 6.3) If the narratives disclosed different notions of being ‘trapped’?

The Foucauldian inspired empirical discourse analysis explored the theoretical and structural relationship between discourse, power and knowledge, while the Trapped Populations concept (Foresight 2011) was applied to frame the analysis around (im)mobility. The concept supported a critical reflection around its conceptual usefulness, definition and potential expansion. Other central concepts that helped framing the analysis include those of binary opposites, subjectivity, gender as well as space and place.

¹⁰⁰ The discourse groups refer to the Q-factor groups identified through the Q-analysis which grouped people’s subjective responses in relation to (im)mobility decisions in such a way so that it reflects the broader discourses in the study area (as described in Watts and Stenner 2012).

7.2 The contributing value of a textual discursive approach

The discursive review of the textual use of ‘trapped’ in environmental migration studies included in this manuscript makes an important academic and conceptual contribution to the current body of literature. Since the conceptual birth of Trapped Populations in 2011 with the release of the Foresight report, numerous articles and empirical studies have referred to the concept, but often with limited critical reflection around its ambiguous definition and the potential dangers around how it is used (Q: 4.2, 4.3).

The power of language is of particular importance within policy. Around the time of its conceptual appearance, resettlement entered the discursive vocabulary of how to protect vulnerable people from the effects of climate change (Q: 4.1). However, the textual discourses describing the concept also included those urging for extreme caution around policy interventions aiding ‘trapped’ people and their potential consequences (Q: 4.2, 4.3, 4.4).

The discourse analysis of the language reproduced through the Foresight report, and thereafter repeated and expanded within academia, identified a clear discursive narrative. This included strong economic and potentially post-colonial descriptions, as well as suggesting proactive adaptive solutions (Q: 4.2, 4.3). Planned relocation, assisted migration and controlled resettlement, however, must be examined in the light of its power implications and governance. In situations where immobility is involuntary, people may welcome such proactive climate action, but in other situations they would impose a threat upon their freedom of choices, lives and homes (Q: 4.4).

The discursive review made another important contribution to the migration body of literature by drawing together all post-Foresight references. Thus while offering an analytical tool to understand its current conceptual definition, and the values reproduced by the concept. The analysis showed that the Trapped Populations concept has not developed in a clear and consistent way, which has made it difficult to apply (Q: 4.2). The theoretical and practical fragmentation of the concept has hindered an effective conceptual development, and instead created a potentially dangerous policy tool. In its current shape, there is a risk that the concept may be used seemingly to protect vulnerable people, while ensuring broader economic and political power positions (Q: 4.4).

The theoretical and methodological contribution of this doctoral research also serves as a reminder of the flexible and transformative state of language, knowledge and social structures. The power of language and discursive realities should not be overlooked, and particular caution must be taken before determining that someone is immobile or 'trapped'. Labels have the potential to reduce and remove an individual's agency and autonomy. Labelling someone as 'trapped' could potentially prove to have similar effects as when referring to a person as sick (Q: 4.4). Future multidisciplinary research around the concept should be encouraged, and must include how the concept should be implemented through policy while recognising the linguistic power of its misuse.

7.3 The contributing value of an empirical discursive approach

The second stage of the discourse analysis in this doctoral study was empirical and investigated (im)mobility decisions from an urban and rural perspective in Bangladesh. The urban case study was based on field data from an informal settlement in Dhaka called 'Bhola Slum'. The slum got its name after incoming environmental migrants moved here from Bhola Island due to riverbank erosion and cyclone strikes. This discursive analysis included Q-methodology to identify existing discourse groups in the study area, while storytelling sessions and a survey questionnaire furthered the understanding of the detected discourse groups. The reasoning behind this experimental discursive analysis was justified by the Foresight report's conclusion that cities in low-income countries should be considered high-risk areas for 'trapped' populations. The textual analysis however proved how little published empirical research has been conducted on this topic, and not one single article referred to, or examined, urban 'trapped' people.

The five discourse groups identified in the urban study site all expressed a desire to leave and move away from the slum, while the extended discursive analysis helped raise awareness of the complexity and potential dangers of labelling them all as 'trapped' (Q: 5.1). The discourse groups showed an extreme diversity in why, where, when and how they wanted to move. The overlaps in the attitudes between the groups also helped identify detailed differences in their reasoning, emotions and experiences leading towards the feeling that they wanted to leave the slum, but nonetheless were not able to move (Q: 5.2, 5.3). The methodological combination of Q, survey questionnaires and storytelling

sessions proved particularly effective in providing comprehensive insights of how and why people may end up immobile.

These empirical insights make an important academic contribution to a multidisciplinary literature around climatic changes, populations, space and place, as well as research carried out in the thematic area of nostalgia identified within migrant- and diaspora settlements. The empirical contribution also fed into another crucial, and growing, research area; the understanding of climate change impacts upon health, and in particular, in relation to mental health and emotional wellbeing. More empirical research in this topic area ought to be carried out in the future. The identified empirical notions of ‘trapped’ populations shed light on the socio-psychological reasoning behind someone’s immobility. This first of all helps to illustrate the complexity around turning an immobile group ‘mobile’, and secondly, that who ends up ‘trapped’, or why someone decides to stay or go, is part of a process that as yet is not well-understood (Q: 5.2, 5.3).

These empirical notions of being ‘trapped’ also proved useful for climate policy, in the sense that they raised questions such as whether mobility can in fact be a solution, and if so, a solution for whom, by whom. Relocation is a sensitive process that must be considered with extreme care. The methodological approach used here raised caution around how the re-producing discursive processes, that created and stabilised normative values, at times increased people’s immobility as well as their vulnerability (Q: 5.2).

The empirical findings from the urban case study also explain how social roles, gender and power act to immobilise people, and put constraints on their decision-making process (Q: 5.2, 5.3). Ultimately, some of the urban empirical insights explaining why people ended up ‘trapped’ in the urban settlement re-appeared as explanations in the rural empirical discourse analysis (Q: 6.1). This rural analysis included a similar empirical discourse analysis to the urban, but in the context of disaster (im)mobility or non-evacuation behaviour from a rural perspective. The analysis was based on field data gathered in three coastal study sites in southern Bangladesh that are frequently struck by cyclones.

This analysis elaborated around disaster immobility or ‘trapped’ populations through a gender-lens. The research setting was justified empirically by detected differences in the

evacuation patterns of women and men in the area, and conceptually by a lack of contributions critically focussing on immobile populations other than ‘geographical populations’. The research shortage in the literature was confirmed in the textual discourse analysis. This conceptual framing is problematic as it imposes the idea that people living in hazardous locations face similar risks of ending up ‘trapped’. The rural analysis also expanded the concept from its generalisation around referring to ‘non-migration behaviour’, while immobility is often subtler and more temporary such in the case of non-evacuation behaviour.

Fifteen discourse groups were detected among the three rural study sites, and fourteen out of these were distinguished by whether they were derived predominantly from women or predominantly from men. These discourse groups both described notions of being ‘trapped’, as in referring to their own immobility, and other people’s notions of ‘trapped’ (Q: 6.1).

A few explanations were put forwards elaborating why people in the study areas ended up ‘trapped’. Clear distinctions were made here between female and male places of safety, and female or male dangers that were described as immobilising factors. In these descriptions, ‘gender-neutral’ dangers, affecting both women and men, were also put forward as reasons why people did not evacuate to the shelter(s). These included things such as the infrastructural state of the building. Other immobilising factors or dangers were gendered, and only affected women, these included the risk of getting harmed or raped in the shelter(s) (Q: 6.2, 6.3).

Distinctions were made between women and unmarried women. Unmarried women seemingly faced more risks than married women in the shelter(s). The descriptions framed them as more vulnerable to the risk of being ‘dishonoured’ in the shelters, while such events also could have more severe consequences. The dishonouring of unmarried women could potentially eliminate future marriage proposals, and turn them into an economic burden for their families. In this way, women were not only described as facing risks of getting hurt or dying in the disaster itself, but also from men, and teenage boys, who may be attempting to sexually harass or harm them (Q: 6.2, 6.3).

Knowledge was introduced as a separating element between men and women. Men were narrated as more intelligent, smarter and experienced. During a cyclone they therefore ought to protect and care for their wives and families. However, this also implied that a husband's recommendation against going to the shelters at times was more important than the advice of the disaster preparedness volunteers urging to evacuate (Q: 6.2).

Another interesting distinction between female and male immobility was found in the narrations around God's will and encouraged behaviour. The men described how Allah would save the man who saves himself, and therefore wanted men to evacuate to the shelters. This holy wish did not always apply to women. The women rather argued that, as their destiny was pre-determined, God would save them no matter where they were. Since they felt safer and more comfortable at home, it did not make sense to them to evacuate to the shelter(s). If they were destined to die, they preferred to do so at home, and so felt it better to stay behind (Q: 6.2, 6.3).

Feelings, emotions and mental trauma was described as important immobilising factors for women as well as men. In similarity to the urban study site, the immobilising elements detected in the rural sites included narrations around 'internal damages', such as post-traumatic stress disorders, mental ill-health and fragmented wellbeing. However, these fragile expressions were not encouraged in the stories of how the typical man ought to respond to a disaster strike. The stereotypic male gender-role in the area was described to fearlessly face the cyclones out on the sea, while putting 'weaker' people (including women and children) in safety. These discursive attitudes seemingly added feelings of stress, worries and fear around the evacuation, and what could happen on the way to the shelter(s) (Q: 6.2, 6.3). These are all important areas of focus for further research and points that ought to be prioritised within climate policy.

The empirical approach of this doctoral study proved to be effective and useful in various ways. The discursive attitudes captured insightful narratives of people's decisions and behaviour in relation to immobility. The analysis revealed social and psychological reasoning explaining why people may end up 'trapped', socially, psychologically as well as emotionally (Q: 5.3, 6.3). The discourse analysis also determined a great diversity of notions around 'trapped' populations and distinct meanings of being 'trapped'.

These different notions supported in explaining why ‘people and people’ may end up ‘trapped’, such as women and men, unmarried and married women, poor and rich. This sheds light on the conceptual wording ‘Trapped *Populations*’, and the potential constraints or generalisations that it implies. The notions of ‘trapped’, captured in the empirical analysis, did not present a homogenous population or a collective group of ‘trapped’ people. In a way, it was concluded that the wording created unnecessary confusion, while Trapped Individuals or Persons may have been more appropriate (Q: 5.3, 6.3).

The gender-analysis in particular proved that the identified social norms and discursive attitudes affected women and men, but also women and unmarried women, differently although the immobilising social structure may be the same. What is accepted social behaviour for some was not accepted social behaviour for others (Q: 5.3, 6.3). The discursive attitudes ended up ‘trapping’ people differently, and ultimately, when the disaster strikes, all did not have the same ability to move.

7.4 Potential limitations of the doctoral study and future research

When starting off the research design of this doctoral study it soon became evident that it is difficult to apply a conceptual idea, such as Trapped Populations, empirically without a critical analysis of its conceptual meanings and values. The textual discourse analysis was therefore added to the doctoral research plan to be able to critically elaborate around the concept within the empirical discourse analysis. The spread of the analytical chapters in this doctoral manuscript means that more could have been done in each of them. However, the broadness of the approach, from a discourse analysis of the literature to two different empirical case studies, helped triangulate some of the main findings.

In the end, all research investigations are about making choices and priorities in the research design, while accepting the limits and constraints of these choices. This doctoral process has taken a learning by doing approach that allowed space for the doctoral researcher to grow. The capacity building element was therefore just as important as the key findings and research contributions. The methodological approach is reasonably broad and experimental. At times, it would perhaps have saved the researcher effort and time to simply carry out one smaller sampled Q-methodological study for example. This

would allow more time and space for the analysis. After all, various smaller Q-studies have successfully been published as doctoral manuscripts, but the experimental mixed-method approach was selected with the learning experience in mind. Additionally, a Q-methodological study would only have resulted in more narrow and limited empirical insights. The doctoral study could similarly have excluded Q and the survey questionnaire, while only applying a Foucauldian inspired empirical discourse analysis of the active discourses. However, this would also have resulted in ‘weaker’ empirical insights.

One of the strengths of Q-methodology is that its sorting exercise is based on feelings and opinions of the participants which tends to decrease the level of researcher influence. No methodological research approach however fully eliminates influences of the researcher’s values and beliefs. This doctoral study makes no other claims. The researcher’s power position in the production of knowledge can not be ignored. My identity, experiences and knowledge are constructed within European ‘modernity’, and will therefore affect what I see, and how I think. I experience the world as a White European woman raised in a European culture. I will never be able to fully remove these social and cultural differences, and instead ought to embrace these differences while challenging my thought processes. I found that some of the differences felt easier to overcome by seeking communalities.

One aim of this doctoral study was to make Q-methodology more approachable to social scientists, and more widely published in journals that generally do not publish Q-methodological studies. In certain topic areas, such as those of medicine, education and learning, as well as psychology and sociology, Q is a well-known and widely published methodological approach. However, it is rare to find articles applying Q in the area of climatic changes, human (im)mobility and disaster vulnerability. The difficulties around publishing Q-studies in journal articles not familiar with the methodology is widely known within Q-networks, and well acknowledged within Q-literature. Watts and Stenner (2012) for example, dedicates a whole chapter to these publishing issues. This shaped the way the research findings are presented in the analytical chapters. The writing-up style can be described as strongly qualitative, leaving out most statistical calculations, and Q-technical language, to maximise accessibility for scholars not familiar with the

methodological approach. For Q-scholars familiar with the methodological approach this could be considered a serious weakness.

Q-methodology, as well as discourse analyses in general, have been criticised for making assumptions and generalisations around people's social values, meaning and attitudes. In this doctoral study, an obvious strength is that the discourses analysed in the empirical chapters build on field data and observations gathered over a longer timeframe. The first set of field work took place in February 2014, and the last set was completed in November 2016. It is however important to acknowledge that during this time period several changes took place in the study site locations. Infrastructure was built and improved, cyclone preparedness was evaluated, people came and left, some power relations were broken, others created, and discourses being transformative and flexible, most likely changed and shifted. We can therefore assume that there may be differences between the discursive attitudes identified through the Q-sorting activities in 2016, and the earliest storytelling interviews conducted in the beginning of 2014.

Another research element to address in this section is the informant sample, and sampling techniques, used to identify key informants. Even though efforts were made to maintain demographic balance, and to ensure that the snowball informant sample was representative of the study sites, it clearly is not a random selection sample. It should however be acknowledged that it has been argued that even the most well-prepared, and technologically advanced, informant selections rarely end up being significantly more randomised than a snowball selection sample. The aim of this doctoral study has been to 'sample' discourses, identified through Q-methodology, while the survey questionnaires were used to provide insights into the demographic background of these discourse groups. This means that the snowball sampling technique created less of a problem than if combined with other research aims.

One strength of this doctoral study is the individual selection basis instead of the more commonly used household basis. Few survey studies critically explore the fact that the opinions and viewpoints of the 'person' representing a whole household setting is generally a male household head. This was somewhat avoided by the selection sample. However, this also implied that the socio-economic backgrounds of the study sample

were carried out on an individual basis. At times, and when considered necessary, several people were selected to represent one household, or to recapture an (im)mobility experience. This approach acknowledges how gender and age may heavily influence the way a story is told.

It is important to mention that the individual storytelling sessions oversampled more communicative and interactive informants. This at times included gatekeepers and people in particular positions of power within the study sites. However, the time spent in the sites and the recurring visits soon made the gatekeepers lose interest in our presence. This allowed the research team to gain trust, and establish valuable researcher-informant relationships. The study sites contained about 1000-7000 people each, spread out in about 200-1500 households. The rural study sites had limited in and out flows of people not living in the villages, while Bhola Slum, due to its urban location, constantly had people coming and going. Around our second visits most people were aware of our presence, and the objective of our visits. Patience has been key to ensure rich and reflexive research insights. Interview sessions being interrupted, or postponed, became a general occurrence. Since the research team had time and the possibility to return, it never resulted in any devastating research impacts.

Meaningful Q-results have been proved with a Q-sample obtained from a Q-study with as few as 15 participants and 36 statements (e.g. Barry and Proops 1999). The larger Q-sample in this doctoral study, 62 participants per study site and 40 statements, resulted in quite a few of them not being selected for the analysis (e.g. co-founded and non-significant). The un-rotated factors however all explained above 40% of the study variance per Q-analysis which is above average in Q-standard terminology.

One further strength of this doctoral study is the rich empirical insights achieved by the longer field visits, by returning, and following up on methodological approaches. The empirical discourse analysis however could have included more critical analytical depth. It is clear that the discourse analysis is Foucauldian inspired, in the sense that the theoretical framework is heavily framed and defined by Foucaudian literature, but it is not Foucauldian. The analysis is also Foucauldian inspired, in the sense that the empirical discourses include observations of practices, behaviour and actions, instead of being

limited to spoken language. The theoretical idea of discourses is thought of as plural, competing and complementing elements, created and maintained by power and knowledge. The concept of power is also applied as a never-ending progressive and constantly transformative force tied to people's social relations which can result in constraints as well as opportunities. The Foucauldian inspired theoretical framework and the discursive decision-making model presented in this doctoral study are therefore theoretically introduced, but with much work and empirical elaboration remaining in the future.

For the discourse analysis to be Foucauldian, more attention should have been drawn to how people resist such power relations, or what institutionalised power fields could be observed in the study sites. There are certain Foucauldian concerns related to discourse and power, or political economy, that ought to be elaborated around here. The interests of power from a political economic point of view, or in the sense of economic forces and their relation to law, customs, government and distribution of wealth, would have taken a very different analytical approach.

From a political economic point of view one could argue that the identified immobility, and related vulnerability, detected in the urban empirical data has little to do with climatic changes, social and psychological constraints, gender or power relations in the study sites. The vulnerabilities have instead everything to do with the political economy in the area. People in Bhola Slum for example, are not then 'trapped' here after being impoverished, and locked into a vulnerable location, due to the environmental conditions back on the island, or the move to Dhaka. Instead, they have been impoverished by the distribution of land by the government, and the fact that the government want them to leave the settlement so that the land can be used for other economic gain. The lack of infrastructural necessities in the slum, such as clean water, electricity and public health, are then political strategies with the aim of forcing people to move longer-term. In other words, people are not impoverished due to their environmental losses, but due to the political economic conditions in which they live.

One could also claim that the reason why people do not evacuate to the cyclone shelters in the rural study sites has little to do with gender, religious beliefs or feelings around

safety. Instead, if one elaborated around the function, location and state of the cyclone shelters it has more to do with the power dynamics of the area. The school buildings are being used as larger cyclone shelters so that the government can avoid having to spend money on building new shelters, whilst simultaneously satisfying the requirements of international disaster preparedness evaluation forms. In this way, most villages of the country have a functional cyclone shelter in place. The shelters therefore end up being located in the centre of the villages, such as within market places or central ports. However, if they were more widespread throughout villages, and smaller but more numerous, more people perhaps would have evacuated. This would potentially occur as people may feel safer with the 'crowd' in shelters, and their distances being more local to them.

To take the analysis one step further, perhaps the longer-term non-evacuation behaviour, explained in this doctoral study partly through socio-cultural values, traditions and reasoning, result in saving the government financial costs. The government are not compelled to construct new shelters, or can decide not to repair them, if people do not evacuate to them anyway. The non-evacuation behaviour then may even be 'encouraged' by blaming it on precisely 'traditions' that are difficult to change, while ensuring political and economic gains for the government.

The number of people in the villages heavily outnumbered the shelter space. In other words, there is not space for everybody to evacuate if they chose to do so. A group of people will have to stay behind. This takes us back to the Foucauldian ideas about resistance of power, and submission of power. The fact that this doctoral study found that women in particular appeared to stay behind, and not evacuate, may from a broader perspective illustrate that this vulnerable and marginalised social group only maintains the larger power dynamics within the national state. In other words, the observed power relations between men and women in the study sites are smaller mechanisms of a larger machinery. In terms of future research, a critical investigation from a top-down approach exploring the political and economic dynamics surrounding the choices of vulnerable groups should be encouraged.

These insights around gender in this research was applied to enhance critical depth and analysis of the disaster immobility. The gender analysis chapter in this doctoral manuscript presents some valuable insights into how gender can be applied as a lens to explain socially rooted climatic vulnerability. The gender element however, presents a somewhat shallow overview, but with much potential to be expanded upon in the future.

One of the key findings was that the social structures, or discourses, in coastal Bangladesh resulted in some socio-demographic groups facing greater risks of ending up ‘trapped’ than others. Women, and unmarried women in particular, were identified as such high-risk groups. This is an important finding as by the time this doctoral research began, national policy makers and disaster preparedness organisations generally claimed that this used to be an issue, but that this no longer was the case. The reason for this was that significant efforts had been made to make disaster preparedness more gender friendly, to divide cyclone shelters into male and female sections, and that the disaster volunteer programme had been expanded. According to the findings, the question of women not evacuating still remains a serious issue. Therefore, more efforts in terms of consulting local people experiencing cyclone strikes to incorporate their suggestions into climate policy must be planned for in the future.

In relation to (im)mobility decision-making and in the context of Trapped Populations serious conceptual and empirical research gaps still remain. The three separate analytical chapters presented will all serve as valuable contributions to these research gaps, but they are to be considered a beginning. The hope is that this doctoral study will serve to encourage more investigations in the future across all the research areas addressed. More empirical insights from relocated settlements, voluntary resettlements as well as ‘failed’ resettlement programs will enhance our understanding of the risks and dangers around the concept. We need to know more about the risks of determining someone as ‘trapped’, and how the conceptual inclusion of Trapped Populations within climate policy may be dangerous. Other empirical studies of ‘trapped’ populations in urban areas also ought to be encouraged as this Dhaka-based study comes with a country specific context. It is with excitement that we see how the concept is being included as an area of interest within academic and policy oriented initiatives. Currently, an international research programme is investigating the context of ‘trapped’ populations within urban slums in Sri Lanka,

Zimbabwe, Somaliland and Bangladesh (see ‘Migrants on the Margins’ Geographical 2017¹⁰¹), and within the UNFCCC negotiations the concept is making its way deeper and deeper into the rhetoric of policy-makers.

7.5 Summary

The aim of this doctoral research was to analyse existing discourses around (im)mobility in the context of climatic changes and environmental shocks. The analysis was first carried out conceptually through a textual discourse analysis of the use of ‘trapped’ within academia, and secondly empirically through a discursive Q and storytelling study in Bangladesh. The Foucauldian inspired framing around discourses applied the concept of Trapped Populations to guide and shape the elaborations around immobility. Other key concepts included those of binary opposites, power, knowledge, subjectivity, gender, space and place.

The textual analysis shed light on the power of language, particularly in the area of climate policy. The Critical Discourse Analysis revealed a strong economic language and potentially post-colonial descriptions within academia. These discursive narratives also suggested proactive adaptive solutions, such as planned relocation, assisted migration and controlled resettlement, that must be carefully examined in the light of its power effects and governance. The analysis showed that currently, the Trapped Populations concept is difficult to apply as the concept has not developed in a clear and consistent way. Its fragmented theoretical and practical state has hindered an effective conceptual development, and instead created a potentially dangerous policy tool.

The empirical approach, including a methodological combination of Q, survey questionnaires and storytelling sessions, proved particularly effective in providing comprehensive insights into how and why people may end up immobile. The empirical discourse analysis shed light on the socio-psychological reasoning behind the notions of ‘trapped’ populations. People may end up ‘trapped’ socially, psychologically and

¹⁰¹ For more info, see news article published by the Geographical (2017). Migrants on the Margins. Published online 24.02.2017. <http://geographical.co.uk/rgs/news/item/2134-migrants-on-the-margins> [Web-link last accessed 24.03.2018]. London: RGS-IBG News.

emotionally. These notions helped to illustrate the extreme complexity around turning an 'immobile' group or person mobile, and while showing that who and why someone decides to stay or go is part of a complicated process that as yet is not well-understood. These empirical notions could be useful within the area of climate policy as they raised questions, such as whether mobility is the solution, a solution for whom, and by whom.

The gender-analysis demonstrated that the identified discursive attitudes affected, women and men, but also women and women, differently although the immobilising social structure was the same. The notions of 'trapped' captured in the empirical analysis did not present a homogenous 'population' of 'trapped' people, but the conceptual wording may create unnecessary confusion. When the disaster strikes, discursive attitudes ended up 'trapping' people differently, with social, psychological as well as emotional dimensions.

All research investigations are about making choices and priorities in the research design, while accepting the limits and constraints of these choices. The three analytical chapters presented in this doctoral research clearly have the potential to be turned into three separate doctoral manuscripts instead of one. The strength here is that this doctoral study responds to various research gaps, conceptual as well as empirical, while a weakness is that each analytical chapter could potentially have been carried out in more detail, and critical depth. Similarly, the methodological approach could have been limited to Q or a discursive storytelling analysis, and the empirical analysis limited to an urban or rural perspective only. However, this would have resulted in weaker empirical insights.

It ought to be clarified that the sampling technique was not randomised, and that while the theoretical framework was Foucauldian inspired, it cannot be considered Foucauldian. The aim of this doctoral study was to 'sample' discourses, identified through Q-methodology, while the survey questionnaires provided insights into the demographic background of these discourse groups. This means that the snowball sampling technique created less of a problem than if combined with other research aims. It should also be noted that even the most well-prepared, and technologically advanced, informant selections rarely end up significantly more randomised than other more straightforward selection samples. The longer time spent in field, and reoccurring study site visits, made

gatekeepers lose interest in the presence of the research team while reducing bias in the selection samples.

For the empirical discourse analysis to be Foucauldian, more attention should have been drawn to how people resist power relations and what institutionalised power regimes could have been observed in the study locations. This would also have brought in certain Foucauldian concerns related to discourse and power, or the political economy, in the study sites. A political economy perspective exploring the same research area would draw attention to the larger top-down power structures, such as the influence of the national state upon people's immobility decisions. This is however a very different analysis that this doctoral research strongly encourages in the future.

In conclusion, the aspiration of this doctoral study is that it will serve to encourage more research across all the areas addressed in this manuscript. More empirical insights from relocated settlements, voluntary resettlements and 'failed' resettlement programs would enhance our understanding of the dangers around the concept of Trapped Populations. We need to know more about what the risks are of determining someone as 'trapped', and how its conceptual inclusion within climate policy may be dangerous. Research efforts, that consult local people experiencing cyclone strikes, are required to better understand how to incorporate their suggestions into climate policy, and should therefore be prioritised. Throughout the span of this doctoral research we have observed with excitement how the concept of Trapped Populations has made its way into various areas of interest within academia and policy oriented initiatives.

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Appendices

Appendix I

Storytelling sessions, questionnaires and check-lists conducted in the urban and rural study sites between 2014 and 2016.

Appendix II

Survey questionnaires including Q-methodology conducted during the 2016 field work in the urban and rural study sites.

Appendix III

Examples of consent forms used in conducted field sessions between the years of 2014 and 2016.

Appendix I

Storytelling sessions, questionnaires and check-lists conducted in the urban and rural study sites between 2014 and 2016.

Research method: Livelihood Histories Interview questionnaire checklist

Personal timeline and context

1. When and where were you born? Where did you grow up?
 - 1.1 (If born here) When did you move away from your parents to start your own household?
 - 1.2 (If born somewhere else) When did you move here? Why?
2. Did you go to school? Up to which level? Did you learn a certain trade or skill? How did you learn? Who taught you?
3. What is your main occupation? Do you have any other economic activities?
4. Are you married? When did you marry? What does your partner do for a living?
5. Do you have children? How old are they? Where do they live? Did they go to school? What do they do for a living?
6. What was your family like? What did your parents do for a living? Where did they live? And your grandparents?
7. What were your roles in the family livelihood? How did you contribute?
8. Did you work outside of the home? What did you do?
9. Have you ever lived anywhere else for longer periods? Where? For how long? Why did you leave? What did you do there? Was it a good or bad experience, why? Why did you come back?
10. Do you sometimes leave the village during the year? Where? Why? To do what? How long?
11. Remittances: Do you sometimes receive money or other support from children, relatives or friends living elsewhere? From whom? Where do they live? How do they support? How often? If money, what do you usually do with that money? Have you used BKash? Since when? Did it change the frequency and amount of remittances?
12. Do they support you (remittances)? How long have you received remittances? How do you receive remittances? Have you always received remittances the same way?

Changes in livelihood

13. What are your major livelihood activities? (from most important to least important)
14. What were your major livelihood activities 10 to 20 years ago? (if years are difficult, choose a personal life history event of 10-20 years back, e.g. when interviewee moved out on his/her own)
15. Why did you change your major livelihood activities?
16. When did this happen? Did you have a choice? How did things turn out?
17. Did activities/projects of government institutions or NGOs play a role?

18. Do you (or does your household) own land? Explain the land situation (private ownership, renting, share cropping, borrowing, bond to debt, etc)? Has your land situation changed over time? Please explain what changed and why.
19. Please estimate the total land size you own and/or cultivate now?

Drivers of livelihood change

20. What positive events that happened in the village, such as the arrival of new roads or forms of transport, new schools or clinics, phone network, other technologies, project, etc. were important for you, and the things you do for a living?
21. What negative events that happened in the village, such as conflicts, political changes, project, etc. were important for you, and the things you do for a living?
22. Have you had any accidents or misfortunes that caused you to begin/end livelihood activities?
23. Did something ever happen to you that really helped you improve the way you make a living?

Environmental change and events

24. When you compare the situation now with 10-20 years ago (or choose a life period to compare with, e.g. when s/he was not yet married), what changes do you see in rainfall patterns, sea level, erosion, etc.)? [focus on the environmental stressors that are relevant in the study site]
25. How do these impact your livelihood? What do/did you do to deal with these changes?
26. What environmental shocks or events have you experienced (droughts, floods, cyclones, etc)?
27. How did these impact your livelihood and food security? What did you do to cope/survive?
28. Do you feel that your household is more or less likely to suffer from the impacts of environmental shocks than other households in your village? Why? Why not?
29. What do you think would be a possible solution or implementation that would help your village in relation to environmental shocks?

Research method: Key Expert Interview example questionnaire checklist

1. What are the main activities of your organization? (What are you doing? How is the work improving the village?)
2. What are the major disasters in the village? (Worst? Affect the village the most? Why?) Which one is more disastrous? Cyclone, Flood or Riverbank erosion? Which one is the most/least frequent?
3. What activities and work is your organization doing to prevent/relief these disasters? (Specify pre/past disaster activities? Examples?)
4. Explain these activities and the work in detail? (mark out unprompted/prompted - training, workshops, volunteer assistance, other?)
5. Is your organization working together with any other organization(s)? (Governmental/Non-Governmental) Working on disasters in this village? What are their activities?

6. Do you know any other organization? How do you know about them? What work are they doing? Is their work useful/not useful? Why/Why not?
7. Where does your organization get its funding from?
8. Are there any early warning systems in this village? What kind? Against what? Are there different early warning systems for same/different disasters? (Describe in detail). Does your organization work with early warning systems in this village? How?
9. Has your organization done anything to prepare the village for flood/cyclone/riverbank erosion so that people know what to do in the case of an event? If so, what did your organization do? Do you know of any other organizations doing this?
10. Are floods and cyclones more/less frequent today than 10/20/30 years ago? In what way? Explain why?
11. What disaster relief activities does your organization handle?
12. Are more/less people affected by flood/cyclone disasters today? Why/Why not?
13. Are the people in the village receiving the warning in time before the flood/cyclone? Specify how much time? If no, why not?
14. Do people understand the early warning system? If not, why not?
15. What instructions are given to the people in case of a warning? (ask separately for cyclone, flood, riverbank erosion)
16. Do people follow all these instructions? If no, what instructions do they not follow? Why not?
17. Do you think the early warning system in this village are efficient enough to warn people about oncoming cyclones, floods and riverbank erosion? If no, why not? What could be done to improve?
18. What is your evaluation about your organization's activities? Why good/bad?
19. Is the work enough or do you think there is more to be done? If yes, what?
20. Does your organization have a strong influence over the village? In what way? Which organization has the strongest influence in the village?
21. Have you observed any changes in this village since you started working here? (5/10/15/20 years ago) Specify, what kind of changes?

Research method: Focus Group Discussion (FGD) example questionnaire checklist

1. How long you are living in this place/village? Who/What brought you here (if not born in site)? Parents? Grandparents? Yourself?
2. What was the reason(s) for coming here? Specific event?
3. Have there been any change(s) during the time you lived here? Positive? Negative?
4. What type of facilities do you have in this place?
5. What disturbances are you facing in this place? Recent? Continuous?
6. Would you like to stay here for your rest of your life?
7. Would you like your children, grandchildren, future generations to stay here? Why? Why not?
8. If you had the complete possibility to stay or go? Would you stay or go? Why?
9. Has any NGOs or (local/national) government ever tried to provide you with any housing alternatives? Support to move or find a different living?

10. Have you ever tried to move, find another place to live in by yourself?
11. Have you ever heard of the (local/national) government or any NGOs paying any compensation if you were forced or wanted to leave? Have you heard of any such examples? After environmental stress (cyclone, flood, riverbank erosion)? Development or building of infrastructure (Embankment, road, canal other)?
12. If you could choose to leave where would you go? Why there?
13. What influence the decision to go there? Housing? Land? Employment? Education? Family/Relatives? Security/Safety? Other?
14. Do you think you feel forced to try to leave for some reason? What reason(s)? Why?
15. Would you like to go somewhere else? How many? (Count yes/no raising hands) Why? Why not?
16. Are you thinking about leaving? Permanently or temporarily? How many? (Count yes/no raising hands)
17. Are you planning to go to a place nearby or further away? Is it close to your previous neighbourhood? Another District? Division? Abroad?
18. Have the (local/national) government or any NGOs come up with any solution(s) or improvements to make people stay? If yes, what are they? Positive/negative? Why?
19. Can you think of any solutions that would improve your living situation in this place?
20. If there has been any support or initiatives from the (local/national) government or any NGOs to help you or other people move or find new place to stay, have the people who needed it the most been provided with this support? Why? Why not? Insecure housing? Income? Other?
21. Do you think it would be easy for you to access natural/livelihood resources in the new place? Why? Why not?
22. Do you think the housing would be better or worse than here? Standard? Shared? If yes, with who? Relatives/friends/unknown? Other?
 - A. Do you think you have the possibility buy/build a house in the new place? Why? Why not?
 - B. Do you know anybody who moved? Bought/built a new house? If yes who? Why did they move?
23. Do you think the social network will be better or worse than here? Will people be friendlier? Why? Why not?
24. What livelihood system would you establish at the new place? How do you think you would manage to get an income? Would it be the same or different than here?
 - A. Would you prefer to do what you are doing now? Why? Why not?
 - B. If you prefer to get a new job, would you prefer to do something you have experience in? Why? Why not?
25. Would you like to move back to your birthplace if possible? Why? Why not?
26. What is preventing you to move back to your birthplace?
27. If you move from here would you like to come back in the future if possible? Why? Why not?
28. What would you need to be able to stay? What initiatives could be taken to have you changing your mind about moving?

Research method: Focus Group Discussion (FGD) questionnaire checklist

1. What is an early warning system? How do you know about early warning systems? (Government/ NGOs/Other?) (Newspaper/TV/Radio/Electronic media/Volunteers/ other specify what?)
2. Is there an established early warning system in the village against flood/cyclone/riverbank erosion (go through all separately)?
3. Since when do the early warning system described exist? Any major event? Which one? (go through each separately)
4. Who established the early warning system (Government? Which ministry? NGO, international organization / village). Is this organization still responsible for the system?
5. Who is responsible for the evaluation and function of the system? Organization? Volunteer? Paid staff? If several, are they from local government? NGO? Village? Other?
6. How does the warning system against flood/cyclone/riverbank erosion work? Do you understand the system which is provided by the Government/NGO? other?
 - A. Do you trust the system in your village? Does it work (against flood/cyclone/riverbank erosion)?
 - B. If not, why? (Misleading or wrong statement/mistrust/most of the times nothing happened or the event was less severe? Other?)
7. Who disseminate the system after there has been a hazard (flood/cyclone/riverbank erosion)?
8. The times you received the warning messages prior to the disaster? Was it useful? Why? Why not?
9. How is the system disseminated? Evaluation? Of what? Effectiveness? Time? Number of affected?
10. Does the system provide clear instructions about what you should do when an event is predicted? Are you advised to go to the cyclone shelter? Evacuate when flood? Move when the riverbank erosion is coming close to your home? Why? Why not?
11. How do you know when its safe again after a disaster? (When to leave the cyclone shelter? When to go back to the village if evacuated? Other?)
12. Is any signal being used to inform people when its safe to leave the shelter after the disaster?
13. Besides the system that government/NGOs created, do you use any other natural/traditional early warning systems in the village? If yes, what kind? How does it work?
14. Are these traditional systems helpful? Why? Why not?
15. How many of you have a television, radio and/or Internet on your mobile phone/ a computer? (in tentative number)
16. A. Do you understand the language if broadcasted on TV, radio, audio speakers?
B. If not, which language do you speak/prefer?
17. Do you use your mobile phone when there is a disaster? If yes, how? If no, why not?
18. Can you read/send text messages that are sent to a mobile phone?

19. Do you receive any text messages by the government or your mobile phone operator¹⁰² when there is a disaster?
20. Which mobile phone operator has the most coverage in your village?
21. Which TV channels and radio stations (including local) can be received in the village?
22. Have some of those TV channels/radio stations been helpful during a disaster? Which one? How? Why not?
23. Which media would be the most effective to use if establishing another system in your village? Why?
24. Is there a need to establish a warning system against flood/cyclone/riverbank erosion (go through all separately)? What are the limitations of the current system? How do you think this can be improved?

Research method: Resettlement Choice Exercise (RCE) description

The research exercise, presented in the villages as a '*Should I Stay or Should I Go*' game, was carried out in smaller research groups and resulted in valuable insights on cultural values around movement and relocation. Games can support in disarming sensitive topics and in this specific case helped eliminate any rumours around planned relocation being part of the research design.

The exercise revealed socio-cultural values, individual and collective risk assessments, preferences, needs and attachment to place in three study sites. Tendencies towards seasonal migration and a willingness or desire to migrate was registered in the study sites already during the first 2014 fieldwork. The exercise therefor supported in deeper the understanding around migration decisions and people's desire, aspirations and intentions to move.

This exercise was based on hypothetical attributes such as land, housing, compensation and income to better understand people's values around these. The group evaluated different alternatives and preferences around voluntarily movement. In other words, they would rank which factors mattered the most when deciding if to stay or go. The compiled socio-cultural, environmental and financial factors revealed why people sometimes choose to stay but other times decide to migrate. The exercise for example explored the relations between the financial and social options as well as their constraints.

Research method: Collective Storytelling Sessions (CSS) description

In each study site, a more playful type of Focus Group Discussions, Collective Storytelling Sessions (CSS) were carried out with the objective to collectively create

¹⁰² Since 2010 there is an early warning system initiative for flood and cyclone by the government and two telecommunication operators- Grameenphone and Teletalk (www.)

stories around the research topics, e.g. cyclone evacuations in the coastal south and migration stories in Bhola Slum. The sessions were carried out within separate male and female informant groups. Efforts were made to ensure an informant balance in relation to age, livelihood and socio-economic background. The session was introduced to the group as a way of telling stories together where everybody was free to fill in and add elements to the story. The facilitators made sure to clarify that there were no rights and wrongs but stayed passive after introducing the main character. This was done by starting off the story with *'once upon a time'* and then give the group a few elements of background which would fit the main character into a specific social role known to the village (based on previous research findings).

In the costal sites, the narratives around cyclone strikes aimed to capture the local discourses and social norms that influenced the behaviour and actions of separate social, gender and age roles within the villages. In Bhola Slum, the stories created by the participants were around migration.

The session started with a brief introduction encouraging everybody in the session to fill in and help develop the story. Very limited amount of facilitation was required. Not only the story itself, but also how the group behaved and responded to topics socially was registered. It is common to use 'talking sticks' in FGDs so that only one person speaks at the time, however, in these collective narrative session, interruptions by one participant towards another, or corrections of information were important participatory observations to better understand the power relations within the group. The sessions were therefore recorded with audio recorders to ensure to capture the stories, but observations on behaviour and interactions were also noted down at the same time.

The sessions generally started with the phrase *'once upon a time there was a...'* and the social role was introduced to the group. Efforts were made to reconstruct some of the previously reported struggles and realities in the study sites such as pirates from the Sundarbans were used as examples in Gabtola and land-grabbers on Mazer Char, as these 'illegal livelihoods' had been captured in previous sessions conducted during the 2014-2015 fieldworks. After introducing the social role to the group, the facilitator stopped abruptly and asked *'...and then what happened?'* For the rest of the session, minimal facilitation and questions were made by the facilitator as the group decided upon the progress and outcome of the story. From time to time, if there was a longer silence the facilitator again repeated *'...and then what happened?'* The aim was to maintain a diversity of gender, age, livelihood, education and economic status of the social roles to be able to capture differences in the descriptions of, for example, female gender roles by the male FGDs and vice versa. Overall, each session took about an hour. While planning the fieldwork, some worries about not getting the sessions to work or lack of interaction was expressed by the research team, however, to everybody's positive surprise it went better than expected. The informants eagerly engaged in the stories and no session ended up with only one person speaking for the whole group.

The list includes some of the social roles used in the storytelling sessions during the 2016 field work:

- Older man/woman widow/married
- Adolescent unmarried man/woman
- Adolescent unmarried migrant man/woman
- Rural boy/girl with dreams of better life in city
- Farmer landless/landowning
- Land-grabber
- Fisherman profit based/consumption based
- Honest and decent business man / Non-decent and cheating business man
- Urban day labourer
- Sunderbans pirate
- Foreign (Bangladeshi from urban/rural) man/woman
- Foreign (from abroad) man/woman
- Hindu man/woman

Research method: Key Experience Sessions (KES) description

To enhance a deeper understanding of people's thoughts, feelings and emotions in relation to their decision-making around evacuation and migration, shorter in-depth interview sessions called Key Experience Sessions (KES) were carried out. The storytelling technique builds upon revisiting experiences, topics and stories over time with one and the same informant. Instead of considering a story or a topic completed one goes back to revisit it.

This method builds onto a research method that is called Experience Sampling Method, also referred to as daily diary method, or ecological momentary assessment. Experience Sampling Method has been described as a method that focuses on the individual experience and the personal meaning of an experience of a respondent. However, the methodology focuses more on day to day experiences over a longer time period and builds upon the ideas that people remember experiences, have different feelings and emotions towards a memory depending on time, place and state of mind. There are some differences in the structure of this fieldwork's research sessions. Evacuation and migration decisions, for example, are not daily experiences. The method favours data gathering repetition over a longer time to be able to detect patterns and correlation. It puts light on an important criticism in relation to research data gathering which is that state of mind, feelings and emotions, heavily influences people's narratives around a specific event. Therefore, the research method applied has been renamed into Key Experience Sessions (KES). KES better reflects the nature of the specific event e.g. the cyclone strike or migration

experience, and the use of sessions rather than sampling is more in line with conduction of interviews.

The narrative storytelling methodology focuses on revisiting one and the same topic more than once with the same informant over more than one day. The narratives focused on evacuation experiences in the southern study sites (DL, MC and GB) and migration experiences in BS. The open interview session took about one hour each and was planned in sessions over several days. The interviews were audio recorded and fully transcribed. The main reason for adding this research method was that the Livelihood History Interviews, carried out in 2014-2015, provided valuable context to the decision-making of people in the study site but when going through the transcriptions some gaps around the internal decision-making process (feelings, emotions and thoughts) was missing. In Dalbanga South, for example, these sessions were carried out with former Livelihood History informants. Other respondents were detected through the survey's and Q-sorting activities, which added on context and informant background to the KES.

Appendix II

Survey questionnaires including Q-methodology conducted during the 2016 field work in the urban and rural study sites.



Questionnaire: Urban migration decisions

Instructions and ownership

This questionnaire has been prepared by Sonja Ayeb-Karlsson (University of Sussex/IDS/UNU-EHS) for study site Bhola Slum located in Dhaka, Bangladesh and translated into Bengali by Istiaq Ahmed (ICCCAD). Fill in all the respondent's answers starting from 1-7. Check the box(es), fill in details when indicated, when checking 'other' always add details. Part III the Q-sort exercise is separated from the overall survey and explained in more details below.

Study site: Bhola Slum

Date: Time: Enumerator: Consent to use data:

Part I: Informant History

1. Age: What year were you born?

(Try to be as exact as possible, use the 1970 Independence war as reference for older informants e.g. how old were you then? How long had you been married? How old were your children? Mark out roughly (≈) accordingly.)

Year born? (if estimated how?):

2. Gender and household: 2a. What gender are you?

(Select one.)

Female: ☐ Male: ☐ Other: ☐

2b. How many people belong to your household?

(Definition household number of people eating from the same income source including respondent?)

Household size?

2c. What is your relation to the household head?

(Add relation to household head e.g. household head, spouse sister, brother, daughter, son, mother, father, if other specify.)

Relation to household head?

3. Education: How many years did you attend school and what kind?

(Fill in how many years and type of school, e.g. total years x, primary x, secondary x, practical labour training x, religious school such as Madrasa x, Mondir x.)

Total school years? Highest attended?

4. Land: Do you own any land and have you land situation ever changed?

(Select all that applies and add details on size and type of land contract. Note that if respondent report on owning 1 bigha ask for description of size in relation to footsteps, as this may be rough estimation of owning 'some' land.)

Private ownership ☐ Land size? Changes?
 Khas land ☐ Land size? Changes?
 House area ☐ Changes?
 Landless ☐ Changes?
 Other ☐ Land size? Changes?

5. Livelihood and assets: 5.1 What do you do for a living and have you changed work?

(Select all that applies and add details accordingly.)

Farming ☐ Annual: ☐ Seasonal: ☐ Temporary: ☐ Consumption: ☐ Sale: ☐ Both: ☐

Crops? Changes? Why?

.....

Fishing ☐ Annual: ☐ Seasonal: ☐ Temporary: ☐ Consumption: ☐ Sale: ☐ Both: ☐

Boat or net? Changes? Why?

.....

Business ☐ What?..... Day wage?

Changes? Why?

Day labour ☐ What?..... Day wage?

Changes? Why?

Housewife ☐ Any economic activity?

Changes? Why?

Other ☐ Specify?

Changes? Why?

5.2 Do you have any of the following assets?

- | | |
|--|--|
| a) Mobile phone <input type="checkbox"/> | g) Water tank <input type="checkbox"/> |
| b) Radio <input type="checkbox"/> | h) Motorbike <input type="checkbox"/> |
| c) Television <input type="checkbox"/> | i) Concrete floor <input type="checkbox"/> |
| d) Computer <input type="checkbox"/> | j) Other investment? Specify? <input type="checkbox"/> |
| e) Solar panel <input type="checkbox"/> | |
| f) Fridge <input type="checkbox"/> | |

Part II: About migration decisions

6. Migration history: 6.1 Have you ever migrated for seasonal labour?

(Migration is defined as living or working at a distance that forces the person to spend the nights in the destination area.)

Yes: ☐ No: ☐

- a) If yes, first time [year]:last time [year]:
- b) If yes, estimate the total number of years (seasonal migration)?
- c) If yes, which district do/did you mostly go to?.....
- d) If yes, what do/did you normally do for work?.....

6.2 Have you ever migrated to other places for a longer time (more than 1 year)?

Yes: ☐ No: ☐

a) If yes, fill in table below:

Name of destination district	Village (v) or town (t)	Period [year-year]	Occupation	Alone (a) or with spouse (s) or household (h)

b) Why did you return to your home village?

.....

7. Where and how would you like to see yourself five years from now?

(Convert story into quantitative information. Same as above. Add details on place, living conditions and reasons for wanting to live here as well as differences to Bhola Slum.)

Bhola Slum: ☐ Why do you want to stay?

Bhola Island: ☐ Where exactly (hometown or elsewhere) and why?

Other part of Dhaka: ☐ Where exactly and why?

Other urban area: ☐ Where exactly and why?

Other rural area: ☐ Where exactly and why?

Abroad: ☐ Where and why?

8. Sort the following migration statements on a scale of -5 (most disagree) 0 (neutral) +5 (most agree)

(1. Start by handing the informant the statement cards and ask them to shuffle them. 2. Ask the respondent place them into 3 piles of cards around agree, disagree and neutral. 3. Register how many cards each pile has. 4. Move onto the grid and start to place the agree pile into the grid one card per box, then the disagree and last the neutral. 5. Mark out the lines for agree, disagree and neutral cards. 6. When done placing all cards interview them around the meaning of cards in placed at extremes and neutral.)

- | | |
|---|--|
| 1) I could get evicted tomorrow. | 18) Bhola Slum is not a good place. |
| 2) The riverbank erosion forced us to move here. | 19) If I was offered a job elsewhere I would go. |
| 3) My health issues do not allow me to migrate. | 20) One should never leave their family behind. |
| 4) I sacrificed my honour in the struggles here. | 21) It was unsafe where I was living. |
| 5) Things would have been better if I never moved here. | 22) If I leave I lose everything I invested in this place. |
| 6) My family doesn't want to move. | 23) This is not where I belong. |
| 7) There have to be people I know in the new destination. | 24) People I knew in Bhola Slum told me to come here. |
| 8) One is safer in Bhola Slum than where I was living. | 25) My place is here. |
| 9) Moving is not the right thing to do. | 26) If others would decide to move so would I. |
| 10) If I could move from Bhola Slum I would. | 27) I thought my living conditions would improve after I migrated. |
| 11) It doesn't feel right to abandon the people living here. | 28) I am afraid something may happen when I get to the new destination. |
| 12) The cyclones were the main reason why I moved here. | 29) The outcome is anyways not in my hands. |
| 13) Women live a better life here. | 30) I would like to return to my home district. |
| 14) Lack of land is the main reason why I cannot leave. | 31) Job opportunities played an important role in our decision to move here. |
| 15) I migrated because education here is better. | 32) I am unhappy here. |
| 16) If I only had enough money to start up a new life elsewhere I would go. | 33) People here in Bhola Slum wouldn't like it if I left. |
| 17) I am not mentally strong enough to move. | 34) My indebtedness doesn't allow for me to go. |

Questionnaire: Cyclone evacuation decisions

Instructions and ownership

This questionnaire has been prepared by Sonja Ayeb-Karlsson (University of Sussex/IDS/UNU-EHS) for three coastal study sites in Bangladesh (Dalbanga South, Mazer Char and Gabtola) and translated into Bengali by Istiaq Ahmed (ICCCAD). Fill in all the respondent's answers starting from 1-8. Check the box(es), fill in details when indicated, when checking 'other' always add details. Part III the Q-sort exercise is separated from the overall survey and explained in more details below.

Study site: Dalbanga South: ☐ Mazer Char: ☐ Gabtola: ☐
Date: Time: Enumerator: Consent to use data:

Part I: Informant History

1. Age: What year were you born?

(Try to be as exact as possible, use the 1970 independence war as reference for older informants e.g. how old were you then?
How long had you been married? How old were your children? Mark out roughly (=) accordingly.)

Year born? (if estimated how?):

2. Gender and household: 2a. What gender are you?

(Select one.)

Female: ☐ Male: ☐ Other: ☐

2b. How many people belong to your household?

(Definition household number of people eating from the same income source including respondent?)

Household size?

2c. What is your relation to the household head?

(Add relation to household head e.g. household head, spouse sister, brother, daughter, son, mother, father, if other specify.)

Relation to household head?

3. Education: How many years did you attend school and what kind?

(Fill in how many years and type of school, e.g. total years x, primary x, secondary x, practical labour training x, religious school such as Madrasa x, Mondir x.)

Total school years? Highest attended?

4. Land: Do you own any land and have you land situation ever changed?

(Select all that applies and add details on size and type of land contract. Note that if respondent report on owning 1 bigha ask for description of size in relation to footsteps, as this may be rough estimation of owning 'some' land.)

Private ownership ☐ Land size and changes?

Khas land ☐ Land size and changes?

House area ☐ Changes?

Landless ☐ Changes?

Other ☐ Land size and changes?

5. Livelihood and assets: 5.1 What do you do for a living and have you changed work?

(Select all that applies and add details accordingly.)

Farming ☐ Annual: ☐ Seasonal: ☐ Temporary: ☐ Consumption: ☐ Sale: ☐ Both: ☐
Crops? Changes? Why?

Fishing ☐ Annual: ☐ Seasonal: ☐ Temporary: ☐ Consumption: ☐ Sale: ☐ Both: ☐

Boat or net? Changes? Why?

Business ☐ What?..... Day wage?

Changes? Why?

Day labour ☐ What?..... Day wage?

Changes? Why?

Housewife ☐ Any economic activity?

Changes? Why?

Other ☐ Specify?

Changes? Why?

5.2 Do you have any of the following assets?

- | | |
|--|--|
| a) Mobile phone <input type="checkbox"/> | g) Water tank <input type="checkbox"/> |
| b) Radio <input type="checkbox"/> | h) Motorbike <input type="checkbox"/> |
| c) Television <input type="checkbox"/> | i) Concrete floor <input type="checkbox"/> |
| d) Computer <input type="checkbox"/> | j) Other investment? Specify? <input type="checkbox"/> |
| e) Solar panel <input type="checkbox"/> | |
| f) Fridge <input type="checkbox"/> | |

6. Migration history: 6.1 Have you ever migrated for seasonal labour?

(Migration is defined as living or working at a distance that forces the person to spend the nights in the destination area.)

Yes: ☐ No: ☐

- a) If yes, first time [year]:last time [year]:
- b) If yes, estimate the total number of years (seasonal migration)?
- c) If yes, which district do/did you mostly go to?.....
- d) If yes, what do/did you normally do for work?.....

6.2 Have you ever migrated to other places for a longer time (more than 1 year)?

Yes: ☐ No: ☐

a) If yes, fill in table below:

Name of destination district	Village (v) or town (t)	Period [year-year]	Occupation	Alone (a) or with spouse (s) or household (h)

b) Why did you return to your home village?

Part II: About evacuation decisions

7. Did you experience the following cyclone strikes? If yes, what did you do?

(Convert story into quantitative information. Start by ticking boxes if respondent was in area and fill in details based on respondent's narrative (unprompted), ask if they can remember any other cyclone strikes, when they state that they cannot then prompt them, and mark out (P) prompted cyclone strikes accordingly.)

1970 Bhola cyclone: ☐ Received warning ☐ Evacuated ☐ Went to shelter ☐

Why not? Where to if not shelter?

1991 Gorky cyclone: ☐ Received warning ☐ Evacuated ☐ Went to shelter ☐

Why not? Where to if not shelter?

2007 Sidr cyclone: ☐ Received warning ☐ Evacuated ☐ Went to shelter ☐

Why not? Where to if not shelter?

2009 Aila cyclone: ☐ Received warning ☐ Evacuated ☐ Went to shelter ☐

Why not? Where to if not shelter?

2010 Nargis cyclone: ☐ Received warning ☐ Evacuated ☐ Went to shelter ☐

Why not? Where to if not shelter?

2013 Mahasen cyclone: ☐ Received warning ☐ Evacuated ☐ Went to shelter ☐

Why not? Where to if not shelter?

2014 Hudhud cyclone: ☐ Received warning ☐ Evacuated ☐ Went to shelter ☐

Why not? Where to if not shelter?

2016 Ronau cyclone: ☐ Received warning ☐ Evacuated ☐ Went to shelter ☐

Why not? Where to if not shelter?

Other cyclone: ☐ Received warning ☐ Evacuated ☐ Went to shelter ☐

Why not? Where to if not shelter?

8.1 Do you think you will evacuate next time a cyclone approaches?

(Convert story into quantitative information. Same as above.)

Very Unlikely: ☐ Unlikely: ☐ Likely: ☐ Very likely: ☐

Explain?

8.2 Where would you evacuate to?

Shelter: ☐ Other building: ☐ Where?..... Other village/district: ☐ Where?.....

8.3 If your thoughts changed from past, why?

Changed: ☐ Explain why?

Part III: Q methodology: sort of evacuation statements

9. Sort the following evacuation statements on a scale of -5 (most disagree) 0 (neutral) +5 (most agree)

(1. Start by handing the informant the statement cards and ask them to shuffle them. 2. Ask the respondent place them into 3 piles of cards around disagree, neutral and agree. 3. Move onto the grid and start place the first pile into the grid one card per box. 4. When done placing all cards interview them around the meaning of cards in placed at extremes.)

- | | |
|---|---|
| 1) Early warning messages are crucial to our survival. | 10) The disaster training is helpful. |
| 2) I am afraid someone will steal my belongings. | 11) I only go when I see others evacuate. |
| 3) One can never know if you will reach the shelter safely. | 12) One should never leave their family behind. |
| 4) Women are not safe in the shelter. | 13) I know just how to prepare when I see an early warning flag. |
| 5) If people in the village told me to evacuate I would go. | 14) I feel safe after reaching the shelter. |
| 6) The outcome is not in my hands. | 15) Evacuating is the right thing to do. |
| 7) I will not leave my valuables behind. | 16) I am afraid of dying in the cyclone strikes. |
| 8) Something could happen to my family. | 17) I am better off because my valuables can be taken into the shelter. |
| 9) People normally tell me when to evacuate. | 18) I never get the warning messages. |

.....

Appendix III

Examples of consent forms in English and Bengali used during conducted field work



Consent Form: Photograph, Video or Audio Recording

The Gibika (*Livelihoods*) project is a partnership between United Nations University –Institute for Environment and Human Security (UNU-EHS), International Centre for Climate Change and Development (ICCCAD) and Munich-Re Foundation (MRF). The Gibika project conducts fieldwork to better understand livelihood resilience, and to inform community-led action in Bangladesh that aim to improve the living conditions of vulnerable people. During the fieldwork, Gibika researchers will take pictures and record audio and video. In this form we ask for your permission to use the information, the images and audio in which you appear for our project purposes (e.g. social media, website and publications).

I, _____ do hereby consent to the use by the Gibika (*Livelihoods*) partners, United Nations University Institute for Environment and Human Security (UNU-EHS), International Centre for Climate Change and Development (ICCCAD) and Munich-Re Foundation (MRF) of information, my image, voice, or both.

I understand that this consent is perpetual, that it is binding but that I may revoke it.

I understand that these images may appear in publications and information material of the Gibika project.

The images and audio will be used in a legitimate manner and it is not intended to cause any harm or undue embarrassment to the parties involved.

Signature: _____

Place: _____

Date: _____



ছবি, প্রামাণ্য চিত্র এবং কথা রেকর্ডিং এর সম্মতি পত্র

জীবিকা প্রকল্পটি মূলত কিছু প্রতিষ্ঠানের সমন্বয়ে গঠিত। প্রতিষ্ঠানগুলো ইউনাইটেড নেশান ইউনিভার্সিটি ইনস্টিটিউট অফ এনভায়রনমেন্ট এন্ড ডেভেলপমেন্ট, ইন্টারন্যাশনাল সেন্টার ফর ক্লাইমেট চেঞ্জ এন্ড ডেভেলপমেন্ট ও মিউনিখ রি ফাউন্ডেশন। জীবিকা প্রকল্পের মূল উদ্দেশ্য হল মাঠ পর্যায়ে গিয়ে সেখানের সম্প্রদায়ের জীবিকা সম্পর্কে অনুসন্ধান করা এবং দুঃস্থদের জীবন মান উন্নত করতে সাহায্য করা। মাঠ পর্যায়ের কাজের সময় রিসার্চাররা সেখানকার ছবি, কথা রেকর্ডিং এবং প্রামাণ্য চিত্র সংগ্রহ করবে। এই ফর্মের মাধ্যমে আমরা আপনার সম্মতি কামনা করছি।

আমি _____ জীবিকা প্রকল্পের (ইউনাইটেড নেশান ইউনিভার্সিটি ইনস্টিটিউট অফ এনভায়রনমেন্ট এন্ড ডেভেলপমেন্ট, ইন্টারন্যাশনাল সেন্টার ফর ক্লাইমেট চেঞ্জ এন্ড ডেভেলপমেন্ট ও মিউনিখ রি ফাউন্ডেশন) কাজের জন্য আমার সম্মতি জানাচ্ছি। এই সম্মতির মধ্যে আছে আমার ছবি তোলা, কথা রেকর্ড করা এবং প্রামাণ্য চিত্র গ্রহণ করার অনুমতি।

আমি এই ব্যাপারে জ্ঞাত হয়েছি যে, এই সম্মতি পত্রটি স্থায়ী এবং আমি এটি প্রত্যাহার করছি না।

আমি এই ব্যাপারেও জ্ঞাত আছি যে, আমার ছবি জীবিকা প্রকল্পে ব্যবহার হতে পারে অথবা কোনো প্রকাশনায় ব্যবহার হতে পারে।

ছবিগুলো এবং রেকর্ডিং গুলো মার্জিতভাবে ব্যবহার করা হবে যেন অন্য কারো ক্ষতির কারণ না হয়ে দাঁড়ায়।

স্বাক্ষর: _____

স্থান: _____ বাংলাদেশ

তারিখ: _____ ২০১৪



The Gibika (*Livelihoods*) project is a partnership between United Nations University –Institute for Environment and Human Security (UNU-EHS), International Centre for Climate Change and Development (ICCCAD) and Munich-Re Foundation (MRF). The Gibika project conducts fieldwork to better understand livelihood resilience with the aim to improve the living conditions of vulnerable people. During this fieldwork sessions, the researchers will take record audio and make notes of what is being said. In this form we ask for your permission to use this information for our project purposes (e.g. social media, website and publications).

[illegible]