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Gendered (im)mobility: emotional decisions of staying in the context of climate risks in Bangladesh

Basundhara Tripathy Furlong¹ · Helen Adams² · Ingrid Boas³ · Jeroen Warner⁴ · Han Van Dijk⁴

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Abstract

Immobility in the context of climate change and environmental risks is understudied, particularly its relation to gender. In this article, we further understanding of immobility to include the gendered influences on potential of people to decide non-movement, decipher meanings that are attached with it and explore how it relates to mobility. We analyse emotions of women and men with different mobility experiences, reflecting their ideas of home, risk perceptions and construction of identity that are informed by gender and central to understanding immobility. Through ethnographic data collected in Bangladesh, we look into details of gendered ways of experiencing immobility where male and female attitudes to staying are distinctly different, yet intersect in many ways. Our data reveal how social and cultural context (patriarchy, social norms, cultural values and shared beliefs) and personal emotions (feelings of belonging, attachment, loyalty, modesty) regulate people's actions on immobility decisions. The decision to stay is relational, where individuals practicing mobility and immobility interact in specific contexts of climate change. The act of staying, especially for women, is dictated by degrees of freedom of want, where desires of movement might exist, but reality of fulfilling them does not. Immobility can have its limitations for women, but can also be an empowering experience for some. Thus, to better understand gendered immobility, we must explore the emotions that provide meaning to the process of staying, while recognizing its interrelationship with mobility.

Keywords Immobility · Gender · Climate risks · Emotions · Mobility

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Basundhara Tripathy Furlong basundhara.tripathy@gmail.com

Helen Adams helen.j.adams@kcl.ac.uk

Ingrid Boas ingrid.boas@wur.nl

Jeroen Warner jeroen.warner@wur.nl

Han Van Dijk han.vandijk@wur.nl

The Sociology of Development Change Group & Environmental Policy Group, Wageningen School

Introduction

The past decade has seen a lively debate on how immobility relates to regional environmental change (Black et al. 2013; Boas et al. 2019; Cundill et al. 2021) and is associated with non-migrants, stayers, immobile people, involuntary immobility and those "left behind" (Carling 2002; Mata-Codesal 2018; Zickgraf 2019). Immobility associated with gender

- of Social Sciences, Wageningen University and Research, Hollandseweg 1, 6706 KN Wageningen, Netherlands
- Government of United Kingdom, COP26 Unit, Cabinet Office, 70 Whitehall, London SW1A 2AS, UK
- Environmental Policy Group, Wageningen School of Social Sciences, Wageningen University and Research, Hollandseweg 1, 6706 KN Wageningen, Netherlands
- The Sociology of Development Change Group, Wageningen School of Social Sciences, Wageningen University and Research, Hollandseweg 1, 6706 KN Wageningen, Netherlands



is stereotypically linked to women as stayers, with limited work opportunities, while men migrate (Desai and Banerji 2008; Hanson 2010; Zharkevich 2019). There is a dearth of knowledge on immobility related to climate change and its gendered implications. Most literature neglects the complexities attached to the decision to stay and the sociocultural and economic conditions of the area and ignore distinctions and inequalities between people (Adams 2016). In addressing this gap, we aim to highlight some of the hidden narratives of immobility using a gendered approach. Our findings demonstrate how gender informs perceptions of climate risk, what it means to stay and how immobility relates to mobility.

The analysis is based on data from Bangladesh where people have unequal and gendered abilities to movement when a disaster strikes (Ayeb-Karlsson 2020; Evertsen and van der Geest 2020; Khalil et al. 2021). Several researchers have acknowledged the predominant masculinity of mobility in Bangladesh, as men have a greater ability to move in comparison to women (Cannon 2002; Ayeb-Karlsson et al. 2020; Mallick et al. 2020; Alam and Rahman 2014). We expand on the gendered differences between male and female staying experiences, what makes women choose immobility and if they have a choice.

A gendered perspective critically engages with men and women's lived realities, which has been lacking in the immobility literature (Uteng and Cresswell 2008; Pessar and Mahler 2003; Evertsen and van der Geest 2020). In our lived realities, we use empirical data that constitutes emotions in making meaning of how and why we stay. Since human life is constructed and lived through emotions, (im)mobility decisions and attitudes comprise them too. Emotions are significant to the narratives of (im)mobility, which reaches beyond simply explaining (im)mobility as non-migration, instead exploring processes of attachment (Adams, 2016; Adams and Kay 2019; Blondin, 2021; Khalil and Jacobs 2021), belonging and home (Boccagni and Baldassar 2015; Skrbis 2008) and identity formation (Farbotko and McMichael 2019; Huntington et al. 2018) that correlate to needs, desires as well as the effects of structural and socio-cultural forces (Parsons 2019; Simonsen 2007; Svašek 2010). Exploring immobility and emotions further gives us insights into: How is immobility gendered? What are the implications of immobility for (dis)empowerment and female agency?

This paper is structured as follows: we begin with conceptualizing and exploring the relationship between gender, environment, immobility and emotions. Such comprehension allows interpreting gendered immobility, using emotions. The "Methods" section elaborate on the Bangladesh climate risk context and the research tools used to categorize the immobility decision-making process. The findings illustrate our arguments of how immobility is emotionally

charged, relationally mediated, gendered and a choice that has its limitations. The "Discussion" section brings together the findings with perspectives from gender and climate change literature. We conclude by providing an alternate perspective of immobility that is led by emotions and gender and highlighting its relation with mobility in a climate risk context.

Conceptualizing gender, environment, immobility and emotions

Gender and environmental change

Moving beyond male-female binary distinctions, gender is what we do (West and Zimmerman 1987) and how we perform in our everyday lives, acknowledging its performative and action-related tendencies (Butler 1990). In mobilities and climate change literature, gender is linked with inequality, class, vulnerability, climate adaptation, environmental knowledge and social connections affecting men and women in an unequal way (Adey 2006; Pearse 2017; Urry 2015; Denton 2002; Demetriades and Esplen 2008). In this analysis, we refer to women and men as socially formulated, dynamic actors that act and perform differently based on the social context and changing climate. Gender and environment literatures generally agree with the hypothesis that the impact of environmental and climate change is not genderneutral but has differentiated causes and effects on different genders (Pearse 2017).

In this context, the poor and marginalized can be expected to have the least capacity to adapt to a changing climate, making them more vulnerable (Adger et al. 2009; Call et al. 2017; McLeman and Hunter 2010). There is a growing body of evidence linking disaster impacts and environmental change to women being disproportionately and adversely impacted when compared to other vulnerable groups (Chindarkar 2012; Arora-Jonsson 2011; Masika 2002; Hunter and David 2009). However, this disproportionate and gendered adversity impacting women is not based on the inherent female nature or "women's intrinsic vulnerability" but on the gendered patterns of adaptation to environmental and climate change (Pearse 2017). For instance, Rao and colleagues' study (Rao et al. 2019b) of 25 climate hot spots in the Global South found increasing climate variability and environmental degradation to be associated with gendered rural out-migration (men migrating in larger numbers). Women continued to live in the climatically fragile places of origin and engaged in risky and low-paid informal work with negative consequences on their well-being.

Alternatively, many studies have argued against this "men-versus-women dichotomy" in climate change studies, suggesting that this "feminisation of vulnerability"



reinforces a "victimization discourse" (Djoudi et al. 2016:248). In fact, some studies highlight how immobility and mobility dynamics can increase women's adaptive capacity (Khalil et al. 2020). For example, some studies found an increase in autonomy and greater decision-making powers of women after male out-migration (Chant 1998; Rao et al. 2019a, b) and increase in women's agency (Rao et al. 2019b; Kabeer 1999). Furthermore, evidence from a recent study in Bhola, Bangladesh, shows that, similar to men, women may also adapt through migration when environmental stressors diminish livelihoods opportunities of their households (Evertsen and van der Geest 2020). Women also have to be considered active agents of change possessing knowledge and skill (Luke and Munshi 2011; Khalil et al. 2020).

In our approach, we acknowledge a pattern of women's confinement and limitations within physical and social boundaries yet challenge the reductive accounts of women's vulnerability through evidence. We do so by delving into emotional representations of identity, belonging and perceptions of those being immobile.

Examining immobility and emotions

Recently, the concept of immobility has been gaining attention in conjunction with climate risks, because of a primary concern that people most vulnerable and who are immobile will be "trapped" (Black and Collyer 2014). The Foresight: Migration and Global Environmental Change Report (2011) was the first to highlight the future of potential immobility with people *choosing* or *forced* to stay in areas vulnerable to climate risks, with a major focus on the latter aspect. The report's findings suggest that the environment along with other socio-economic and political drivers can increase the desire to migrate but can also diminish the ability to move (Foresight 2011; Black et al. 2011a, b). While the "trapped population" thesis sheds light on a significant policy area, it falls short in addressing the diversity of choices, contextual experiences of the immobile and how immobility decisionmaking relates to mobility (Wiegel et al. 2019; Pemberton et al. 2021; Boas et al. 2019).

To better understand immobility, we must analyse its relationship with mobility. In this article, we distinguish immobility from a sedentarist perspective (see Cresswell 2006), which relates to non-migration as "the norm" or common practice. In contrast, an environmental risk context implies a negative characterization of immobility, whereby mobility is desirable. It is assumed that immobility might not be the desired choice, but be an enabler for others to migrate. In Bangladesh, sedentarism through social and cultural roles of femininity is the norm, yet immobility is generally considered lacking agency and "being trapped" (Shamsuddoha

et al. 2012; Foresight 2011). Contesting this theorisation, we bring forward a different perspective to immobility through a gendered lens, which ascertains male and female behaviour and decisions significantly based on emotions.

What do emotions mean? Why are they relevant to immobility? Using perspectives from geography, emotions can be defined as "dynamic processes through which individuals experience and interpret the changing world, position themselves vis-a-vis others, and shape their subjectivities" (Svašek 2010: 868). Feelings, senses and emotions are embodied between the self and place (Bondi 2006). The self, in this perspective, is not an entity that simply reacts to the outside but rather a relational being that engages with their human and non-human surroundings. In the context of climate change and mobilities, emotions are under-recognized, yet few studies have linked (im)mobility to place attachment and place dependence (Adams 2016; Farbotko and McMichael 2019; Khalil and Jacobs 2021), psychosocial factors (Ayeb-Karlsson 2020; Ayeb-Karlsson et al. 2020) and emotional connections (Lewicka 2011; Anton and Lawrence 2014). In a post-disaster context, place attachment has been linked to gender enabling women to adapt "in place" and expand on climate adaptable livelihoods (Khalil and Jacobs 2021). Others have perceived place attachment as an interrelation between fixity and flow allowing greater focus on the relational aspect of im(mobility) and its bearings on place (Adams 2016; Di Masso et al. 2019). The "emotional landscape of climate change" identifies the subjective and physical dimensions of environmental mobility (Parsons 2019). Similarly, for immobility a gendered approach that seeks to engage with emotions offers a complex inter-subjectivity of responses to climate change. Climate change is experienced differently by each individual based on subjective (norms, emotions and culture) and objective (economy, topography and demography) realities that leads to various mobility outcomes (Parsons 2019). For example, in a distressful (climate affected) situation, the embodiment processes (evaluating emotions) can be responsible for anticipating emotional events (mobility/immobility) (Svašek 2010), which might differ based on socio-cultural and objective realties of those concerned. It includes the agency of actors involved, in how they interpret their situation, which may be deemed "vulnerable" or "uninhabitable" in our case.

We focus on the subjective dimensions of climate (im) mobility that elaborate on emotions as conscious experience of feelings that can influence our judgements (Davidson and Milligan 2004; McKay 2005; Boccagni and Baldassar 2015). We illustrate in the findings how contrasting emotions of hope, fear, nostalgia, belonging, loyalty and modesty become manifest in immobility decisions. Emotions guide perceptions (Gorman-Murray 2009) that inform people about immobility opportunities available and its associated costs (Evertsen and van der Geest 2020). Awareness



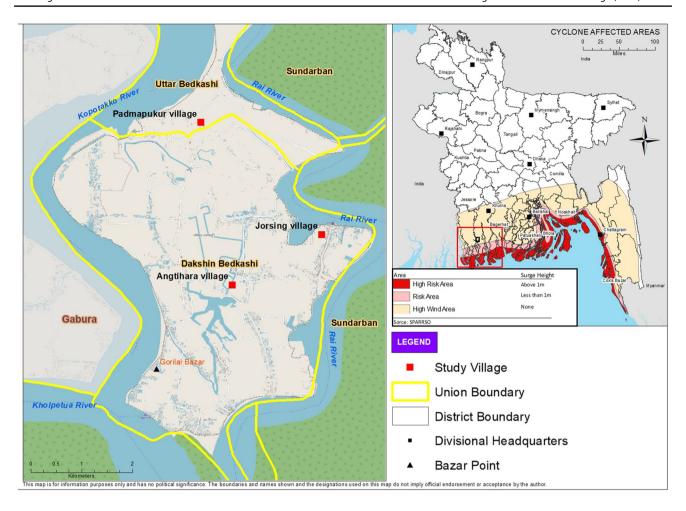


Fig 1 Map of study site, Koyra Upazila, Khulna district in Bangladesh (left) and map of cyclone-affected areas in Bangladesh (right)

of the implications or the costs attached to staying and leaving enables relevant action. The costs attached can relate to the notion of agency as women's intentions and desires are linked to social practices (Mahmood 2005) that in cases may favour immobility. For example, in our study, certain women in rural Bangladesh, despite having desires of mobility, remain immobile after marriage. The social and cultural costs of marital status and expectation of modesty attached to mobility come with greater implications, where women's dreams to be mobile might not have changed, but their realities have changed.

Methods

Study site and methods

Bangladesh remains one of the countries most susceptible to extreme weather events including cyclones and floods (Ali 1999; Huq 2001; Huq and Ayers 2008). The Southwest region of Bangladesh is prone to environmental change,

disasters and out-migration (Mallick et al. 2017). Its vulnerability is not only dependent on its topography, geographical location and biophysical features (delta country, low lying), but also on socio-economic indicators such as high population density, poverty and dependence on agriculture (Rahman 2013; Imam et al., 2018). The study was conducted in the Southwest region (Koyra Upazila, Khulna district) in three coastal villages—Padmapukur, Jorsing and Angtihara between September 2018 and August 2019. The selection of our study site was driven by the following considerations, firstly, for its high climate vulnerability and frequency of disaster risks (see Fig. 1, cyclone Aila 2009). The second is for the presence of immobile people in a climate-affected region where mobility is practised. The third is the location being remote and rural with villages chosen to show similarities and differences within the rural context. Finally, our ability to enhance the contextual and qualitative nature of data is facilitated by the geographical scale of this analysis. The chosen sites are representative of the Southwest region yet could have certain distinctions based on their remoteness and rural location.



Table 1 Village census and housing data

Village name	Households	Populati	Population Total Male Female			
		Total	Male	Female		
Padmapukur	327	1262	634	628		
Jorsing	803	3345	1650	1695		
Angtihara	195	724	344	380		

Source: Population and Housing Census 2011, Bangladesh Bureau of Statistics (2015)

Table 2 Number of field interviews and focus group discussions

Methods	Male		Female		Total
	Migrants	Non-migrants	Migrants	Non-migrants	
Semi-structured interviews	12	20	2	26	60 interviews
Focus group discussions	9	18	2	21	8 FGDs

The selected villages have a nearly equal ratio of men and women based on the data available (see Table 1), although these figures could be slightly misleading as they do not account for seasonal migration patterns.

The subjective nature of enquiry and analysis of attitudes and emotions using a gendered lens led to the use of ethnography (Clifford and Marcus 1986; Lewis and Russell 2011). The first author spent 8 months in the chosen site for this research, with prior exposure to the local context. The lead author stayed with a host family in Padmapukur village during the entire period of study. Living with the local family, sharing a room in their home was an important part of ethnographic immersion. As we would like to believe, it is these close connections and acts of acceptance within the community that led to gathering of rich data. Engaging with daily chores, accompanying the head of the household to the agricultural farm, visiting households through the day and spending time in the local market communicating with people strengthened the trust between the community members and the author.

Together with ethnography, a mixed methods approach was applied using semi-structured interviews and focus group discussions (FGDs) (see Table 2).

Each interview lasted for 1 to 2 h depending on the willingness or availability of the participants. Some of the participants were interviewed multiple times based on the information they provided and to follow the individual and their families (im)mobility practices. We interviewed nonmigrants (no history of migration out of the study site for 6 months or more), permanent migrants (those out of the study site for 6 months or more) and seasonal migrants (those out of the study site for 3 months or more in a year). This was done to include a range of (im)mobility capabilities, aspirations, perspectives and experiences. The interview responses were maintained using diaries and journals and

questionnaire for risk assessment for the qualitative study was submitted to and approved by the institutional ethics review committee. All subjects gave their informed consent for inclusion before they participated in the research. The first author is fluent in the local language but had assistance of a local translator for this research. We use pseudonyms and not actual names of participants, protecting their identity and keeping in line with research ethics.

later manually coded and categorized for pre-determined and

emergent themes. Key informants who were locals familiarized the author to the place and people. Sampling was purposeful, with inclusion of variation based on gender, class, social status, education and livelihoods. Targeted interviews with male and female non-migrants were administered separately, keeping in mind the patriarchal social structure.

The study was reviewed and approved by the institu-

tional social science ethics committee and complies with

the Netherlands Code of Conduct for Scientific Practice. A

Why do we stay?

In decoding the immobility puzzle, the macro factors influencing decision to migrate or stay were considered. This includes environmental, political, demographic, economic and social factors which are well established in climate mobility literature (Black et al. 2011a). Our enquiry focused on certain micro level considerations that formulated the decision to stay. At the micro level, (i) home and belonging, (ii) identity constructions and (iii) risk perceptions were gendered and relevant factors for immobility in the rural context. Questions related to aspirations/desires, choice, capabilities and agency led to this disclosure.

Some pertinent questions to answer are as follows: What led us to analyse the three micro factors? How did we reach this conclusion? Firstly, methodological commitment to qualitative and subjective accounts led us to categorize areas that were frequently referred to in the decision-making process. Home, land, place, identity, culture, social norms and risks associated with place were themes mentioned repeatedly as important determinants by migrants and non-migrants. Secondly, the three factors seemed to invoke different emotions and reactions from migrants, non-migrants and different genders. For instance, in our study, married women did not perceive climate risks as immense threats



that would force them to move. This was in opposition to how their male counterparts perceived climate risks as important factors for migrating for themselves but differently (women should stay) when it came to women. This ties back to Parsons (2019) argument on how experiencing climate is not the same for everyone based on the dualism of subjective and objective realties that can result in different mobility outcomes. Finally, the factors explored the ideas of "bodies and place" (Bondi 2006) and what lies in between, which is emotions. At an empirical level, the three factors are certainly interrelated, but for analytical purposes, it is helpful to separate them as they have distinct emotional processes that are gendered.

In the next section, we explore the intricacies of gendered immobility and how it mirrors the mobility of men.

Gendered ways of experiencing immobility

Home and belonging

The complex question of what keeps people from moving in a climate-affected scenario of rural coastal Bangladesh had insightful answers. A common word that featured in most of the responses was the Bangla word *bari* or home. Many female stayers referred to it as *amar matribhoomi* or "my motherland", *amar gorbo* "my pride" and *amar jagah* "my space". Men who stayed invoked similar emotions but spoke about home as "my land" and "my place of birth and death".

Home or dwelling had different meanings for men and women, given the social and cultural norms of rural Bangladesh and the patriarchal nature of society. Many of the immobile women today have been mobile previously, through marriage. In rural Koyra district, it was common for women to move from their parents' house into their husband's home (one village to another) after marriage. As Ayesha in Padmapukur village narrates, "I lived here since I was 18. I had never been to this village before marriage". Her previous home was 50 km away, where she visits a few times a year. Speaking of what home means to her and why she continues to stay when her husband is away, young Ayesha notes,

My husband's house is my home. I left my house [parents home] the day I got married...I live here even when he is away because it's my job to take care of my house. If I won't then who will? This is the only home I have.. He will return to his *desh-er-bari* (his true/village home).

In feminist literature, the idea of home is suggested to have a male bias, wherein the male perspective is imposed on women (Chant 1998). Men build the infrastructure or material home and women nurture. The caring role of the

mother is passed on to the next female member (partner or wife), keeping the identity of home intact. Male members, in a patriarchal society, pass the nostalgia of home on to women, whose confinement within the material structure reflects men's own fixed identity. Interviews with male non-migrants had many differences when compared to female non-migrants. Men referred to the "only home" they have ever had and will have in future, as an important factor for staying. As Shamim states, "I am here because I don't like it outside. I had worked in Dhaka (city) for a few years. I like it at home. Life outside doesn't suit me".

Interviews and focus group discussions on staying elicited different responses from a group of married female non-migrants reflecting on responsibility of home, attachment to place and ease of living within a familiar social milieu. This was different to responses from young, unmarried women who stayed (Table 3).

From these responses, we extrapolate a general consensus among married women in the research area viewing mobility unfavourably, being fearful of the unknown and a life choice that does not intersect with women's lifestyle in the rural areas. Women are limited by convention in their mobility or ability to travel on their own, although they have been permanent migrants earlier, relocating to their husband's village and home. This would be in contrast to results from unmarried young women (respondent 5 and 6), who did not put emphasis on "rootedness and home" but on education and opportunity. Young women looked for opportunities through their immediate social networks.

Immobility is not deterministic or constant but evolving over time. The shared experiences of immobility among women with similar personal situation in rural Bangladesh are related to the common cultural and social context. One might then ask, why is it that not all married women feel the same way about immobility although it is broadly approved? Home, "motherland" and a sense of loyalty to family and household seemed common among respondents, with diversity in personal experiences and perceptions of immobility. As we learn from respondent 4, a change in marital status altered her desire to be mobile. She would have liked to "try" migrating earlier, but that opportunity had passed since she married. This was in contrast to respondent 3 who would choose to stay even if given the opportunity to migrate. Respondents 5 and 6 are educated with strong household economy pursuing their desires to be mobile unlike the other participants. The diverse personal characteristics (marital status, age, education, class and financial assets) of women and gendered subjectivities implies distinctive emotions and capacities to feel, reflect and act within the patriarchal social relations and historical context of Bangladesh which results in different responses. This explains why intersectionality and diversity matters when reviewing gender as "all inequality is not equal".



Table 3 Responses of women on home and place attachment (author interview responses)

Participant	Response	Age	Education	Economic condition
Respondent 1	"In the absence of my husband, I take care of home. Leaving this place can be imagined in a dream, never in reality. I belong here, like all other women. This is our life, our society, our destiny."	45	No education	Family owns land, rears chicken to sell in the village
Respondent 2	"Even if I thought of leaving, where would I go? I can't go alone. What [work] will I do there (city/other rural places)? I have no education. Who will hire me?" When asked if her husband who migrated was literate she responded, "He is a man. Labour work requires physical strength. You don't need education for that. He isn't educated. It isn't the same for women."	24	No education	Landless, no property or fixed assets
Respondent 3	"I like it here. My people live here. This is my culture and way of life. It will be different outside. I am scared of change. I choose to stay here. Even if I get the opportunity, I won't migrate."	50	No education	Family owns land and <i>gher</i> and has a house with television Owns assets as well
Respondent 4	"I was interested in migrating earlier. I would have liked to try, but I can't now. I am a mar- ried woman and my home is here. Now I have children, family and responsibilities. It [migra- tion] isn't possible."	26	Educated till class 5	Family owns house and farm land
Respondent 5	"I was in Khulna for high school. I am at home preparing for exams, so that I can pursue higher education in Khulna."	19	Educated till class 12	Family owns house, farm land and gher
Respondent 6	"If I find work in the city, I will take it. I am asking friends and relatives to help."	20	Undergraduate	Family owns, home, farm land, <i>gher</i> and other assets

Women's perceptions and social identities can overlap, creating varied experiences of immobility. Women speak of immobility through their everyday lived experiences, making it simpler to understand gendered practices of im(mobility) at a personal yet relational level rather than fixed subjective level. These findings reflect the idea of agency where women have the universal freedom to act, but nonetheless their actions are guided by socio-cultural factors, meaning agency is locally bound (Mahmood 2005, 2001).

Anthropologist Saba Mahmood's ethnographic work on Muslim women, agency and piety (Mahmood 2005) illustrates the notion of embodied agency as intentions and desires that are fulfilled by a conscious subject and repeated practice. In her study, Mahmood followed women's mosque movement in Egypt over 2 years, focusing on how female agency is formed in a historical, social context with the help of bodily practices (2005). Mahmood found that Islamic women consciously cultivate themselves (their intentions and desires) to be respectable, proper women by practicing certain "feminine" virtues of shyness and piety by acts of veiling or learning to be shy: even if it did not come to them naturally, the practice imprints shyness and modesty upon them over time. Drawing on this idea, our findings suggest that some women in environmentally affected rural

Bangladesh, although with varied perceptions on immobility, with the conscious practice of "staying", providing loyalty and a sense of attachment to home, had subscribed to the moral obligations of being respectable wives. The moral virtues (e.g. loyalty, modesty) are acquired through outward behaviour (e.g. homemaker, caretaker) with inward dispositions (e.g. emotions, feelings, thoughts, desires) through repeated performance of acts (e.g. staying) that necessitate those particular virtues (Mahmood 2005: 136). Immobility, however, is not a form of submission to patriarchal structures or merely a symbolic gesture of marking one's feminine rural identity. Following Mahmood, immobility can be understood as a conscious action (maintaining the house, assets) cultivated over time, through which the idea of "home" is realized and sustained.

In contrast, the masculine approach to immobility was different when compared to women considering the idea of home is not the same for both. Men who preferred to stay made this choice based on their physical condition, old/ill/unfit (negative choice), and on their preference of home (positive choice) after experiencing life outside the village (could be interpreted negatively) through short-term migration. While the masculine and feminine distinctions in approach to immobility become apparent, gendered



immobilities can have similarities in experiences. The comfort, familiarity and knowledge of local place and people had a significant impact on immobility decision-making for men and women. Gendered nuances of home and belonging, person-place bond stems from the social characteristics of place and its relation with people. The physical landscape becomes an extension of women's self-identity.

Identity constructions

Patriarchal context: social rules and norms

Bangladesh has a traditional, conservative social and cultural system, based on patriarchy (Islam 2014). Culturally, women here have a lower social status with rules and norms favouring men. Gender inequality, unequal distribution of assets and power are determined by the patriarchal power structure entrenched in this society. Living in the village, we witnessed gendered daily rituals that emphasized women's role and place in society, informing their gendered identities.

The quaint villages in southwest Bangladesh wake up with the rising sun with women being the first to rise. Women are up early to prepare their homes for the rest of the day. Anika notes, "I do all the work at home. Cooking, cleaning, taking care of the children, supporting my in-laws and also look after the gher and vegetable patch attached to our home". In similar vein, Farida narrates, "We [women] wake up at the break of dawn and usually start our day with cleaning the veranda. I water my vegetable garden, walk down to our gher (aquaculture farm) to catch fresh fish for our meal and collect some vegetables too from the garden for cooking". The tasks of cleaning, cooking and managing home are associated with women. Alternatively, Soleiman, a man in his 40 s, lives at home, while his two brothers have migrated. He does not contribute in the cooking, cleaning and rearing of children but continues to support the family by buying groceries from the market. "I look after the farm land and do most of the work outside the house. Home tasks are for women, not us men. We help when needed".

Culture determines the appropriate role men and women play within and beyond the household. A gendered perspective on how men and women perceive their roles in society and what dictates the masculine and feminine nature of these jobs is an interesting part of the immobility puzzle. Patriarchy is inherently present in this society where social structures are male-dominated and women experience systematic exclusion from the economic spheres of life. Women are associated with feminine, domestic and care-taking roles, while men with competitive occupation, provider and economic roles.

On examining gendered perspectives to identity and why staying was associated with women more "naturally" than men, some of the respondents commented, Women are meant to be at home and are natural caretakers. Men bring the money home that is most important for a house to function. Us men have the choice to migrate, but not all women can migrate.

I will go to work in Dhaka next year. As soon as I find work I will leave. It isn't the same for my sister. She is a woman.

These views were commonly held by male migrants and non-migrants. The unwritten rules of society and cultural norms permeate deep into the consciousness of rural Bangladeshis.

Unequal power structures and access to resources

The public space or the markets are dominated by men in the villages. Men carry out business in the morning in these spaces, while in the evening, it is a place for entertainment where they meet to discuss their lives and politics and enjoy watching sports or television together. Women avoid these spaces and are not generally seen in this area. This has changed significantly since the uptick in male migration, increasing women's access to the local market and their interactions in the public domain. Absence of male members of the family has made women access markets. They buy groceries, and sometimes sell some of their backyard garden produce in the *haat*. For certain other women, although they are the only adult member in the household, they do not visit the market, especially if they are very young.

I don't visit the market on my own. It's usually someone from my father's house, like my father, *chacha* (maternal uncle), brother who do the vegetable shopping for me. If I need something urgently and I can't get through to them, I visitthe market, but I try to avoid it.

The more religious families and conservative households had an objection to women's mobility. The immobility aspect of women is celebrated as a sign of honour, pride, good nature and of a responsible wife/daughter/daughter-in-law/mother. For all these different roles played by women, staying at home does justice to it. If they decide to be mobile, this would affect their success in delivering these roles for the rest of the members in the household and larger community. Mobility is also associated with bringing shame on the family, especially if it is a woman going out of the village to work on her own. In the nearby villages, some girls have migrated to work in the garment factories in Gazipur on the outskirts of Dhaka city. People in the studied villages are



Local informal market, held twice a week in the village.

aware of it and see it as a positive step, but when asked if they would send their daughters or women to the garment factories, they would reply with a resounding "No".

Voluntary migration of women is correlated to specific social contexts (Chindarkar 2012), and similarly the findings exhibit voluntary immobility too is interrelated to the social situation. The rural landscape of Koyra *upazila* is predominantly patriarchal with men holding power, displaying their dominance within the household and society at large. In households where men remained in the village, they exercised control over family, even though their social ranking/relationship was much lower than the female's. For instance, Farid, the eldest in the family, lives with his wife (Nadia), two children, two younger brothers, a sister-in-law and mother. When Farid migrates to Barguna, he leaves his younger brother in charge of the household, although he is younger to Nadia, both in social relationship (younger brother in law) and age.

In contrast, households where men migrated and did not have another healthy male counterpart to take their place, women stepped in. Renuka is the head of the household since her husband migrated, and she is staying in the village with her children and ageing in-laws. She looks after the finances of the house, goes to the market for groceries and sometimes even travels as far as the nearest town in Koyra to buy medicines for the household. Therefore, the patriarchal context was not a blanket condition that affected all women uniformly. Variations in power or access to resources were dependent on individual social situation. Power tilted in favour of some women, but as the findings suggest, only in cases where men were missing.

Expanding women's traditional role

Mobility of men over time has created new roles for women within the household and community (Khalil et al. 2020). In the rural villages of Koyra, women looked after the *gher*, while the husband was away for 6 months. With continued male absence and few options for help, female members of the migrants were engaged in *gher ghas porishkar* (cleaning weeds from the *gher*) and adding fertilizer to the agricultural land and in certain cases took up physical labour opportunities, such as mending the edges of the road. As narrated by a woman,

Since my husband has been migrating, I have taken up more responsibility in the 2 bigha *gher* (a little over half an acre of aquaculture land). I manage the housework and the *gher*. I clean the *gher*, add *chunna* (slaked lime) with hot water to the gher to keep the water and land clean of any pests.

Women in these situations have acquired new knowledge on aquaculture which is traditionally passed down to male members of the family. Using new farming knowledge, some have taken the lead in implementing new learned practices in their aquaculture farms. Women's instrumental agency increased, or the power to make choices of how the resources are managed which affected their immobility status positively in certain circumstances.

A variety of tasks were practised by women in Jorsing village, including removal of husk (outer covering) from paddy, feeding paddy husk to ducks/chicken/cows, rearing animals and growing large quantities of vegetables in the back gardens.

Ami rakhi hans, murgi aar goru (I keep ducks, chicken and cows). It costs 450 Tk to buy a deshi chicken (country chicken) from the market. Duck is very expensive to buy from the market. We sell it. - Interviewee, Jorsing village

Married women are able to make a bigger contribution to the household economically which has improved their living standards. They do not wish to migrate and feel secure with the change in livelihood that has given them an opportunity to become self-sustaining. Although immobility for women was common in this region, mobility within the village became an option for some. In cases such as Shaheen's, a disaster like Aila (cyclone in 2009) became an opportunity to relocate and build a new house (more resistant to cyclones) in the village.

My in-laws did not treat me well since we had a love marriage. We did not get any land or money either from my parents or my husband's parents. During Aila, our house was completely destroyed. Since we had to rebuild it after Aila, we decided to make our own separate home away from my in-laws compound. I sold my gold earrings to make this house.

Her husband migrates for most of the year, while she lives in the village with her children. When asked if immobility is a choice, she responds, "In my case it isn't an option, although most women here do not migrate. I moved within this village, out of my in-laws house to my own. That is enough for me".

I asked, "What has staying behind meant for you"? "I learnt many things since my husband migrated. I know how to use BKash. I use it every month to receive money from him. He sends 1000–2000 Tk monthly", she responded. "Have you used a mobile before he left the village"? "No I had not used it much. Now I have my mobile. I use it regularly to keep in touch with my husband. I can teach you how to use the messaging app as well", she laughed. "I save some money and use it more efficiently than my husband I believe. I use it for



 Table 4
 Author discussion responses to questions on climate risks (focus group discussions)

Q. Is there a climate risk?			
Responses by male migrants	Responses by female non-migrants	Responses by male non-migrants	
"There is great climate riskmy family faces it every year. We are forced to spend money on repairing/rebuilding the house and face crop loss"	"The river gives you everything, it also takes away from you. That is the law of nature."	"Cyclones, floods and river erosion are real. We are witness to it. The risks are plenty."	
"It's the uncertainty that makes the village risky."	"I don't think I would call it risk. I would call it life. We have to learn to live with it."	"Climate changes are causing much damage but we are trying to manage with what we have."	
"There isn't much work in the village because of climate risks."	"Rivers flood and cause suffering, but they also give us water for farming and aquaculture."	"Embankment is our main issue. If solved, life would be much easier. Rest, we can't change."	

buying goats, chicken. I did this through my own effort. I saw my mother-in-law doing it and learned from her".

Over the next few months, I spoke to her many times. She proudly said to me, "I can't move out of the village. I am not you. But I have the freedom to move within this village. I don't have to ask someone else for help, which I did when I lived with my in-laws. I feel good now. I feel my own *sadhinata* (freedom)".

Risk perceptions and management

Historical outlook

Geographically, the villages in Koyra *upazila* have immense risk of climatic disasters and face regular cyclones, river erosion, floods and storms. The climatic risks are not a new feature to the area but have a historical significance. Recent cyclones Sidr (2007), Aila (2009) and Amphan (2020) have caused massive destruction to land, livelihoods, coastal embankments and houses in the studied areas.

The historical underpinnings of disasters and continued vulnerability to it are central in understanding risk perceptions that influence im(mobility). In the interviews and prolonged discussions with non-migrants and migrants, perceptions of climate risk and continuing to live in that environment were elucidated differently. Those who stayed, women more commonly, linked the term "mobility" with the history of partition, mentioning the "liberation war of 1971" and "movement across borders with India since partition in 1947", giving a sense of uprooting and displacement. Bangladesh's history of migration and its strong connections with the rural coastal villages reflects not merely the mass movement related to independence but the annual movements of people and households within and beyond their villages affected by recurring climate disasters.

"Some of my family fled to India during partition. We are Hindus [minority religious group in Bangladesh], yet we stayed in Bangladesh. This is our grandfather's place. Many of our families got separated during partition and we

lost many to the liberation war", said Gopal. In a similar vein Ram claimed, "Moving from one place to another is painful. I have experienced that pain. My uncle and aunt moved to India with their children. I don't see my cousins much". The historical implications of mobility feed into the current trends of movement, whereby those who do not move attach it with pain, suffering and uprooting.

Climate risk

The risk of living in a climate-fragile area seems immense to scholars, development practitioners, civil society members and government officials, but is not the same for people living in these conditions. Questions on climate risks and its significance in their decision to be immobile were met with mixed feelings (Table 4).

Migrants perceive the village as challenging and risky with a degree of uncertainty in climate that contributes to their mobility and lack of work opportunities in the rural areas. Conversely, female non-migrants spoke of minimal risks and viewed nature more positively and the negatives of climate change as a consequence of life. These statements give us two critical points to consider: Firstly, men recognize the village as climatically vulnerable and are mobile, spending a considerable part of the year away from the perceived risk. On the other hand, women do not view climate as a threat enough for them to leave the village. Secondly, there is a difference in perspectives of male and female non-migrants. Men admit the risks attached to staying in a climate-affected area, which is starkly opposite to women's view of climate risks that are more encouraging. Women's positive reinforcement of nature and how to establish everyday life around it makes the decision to stay easier and comforting for them. Having said this, by no means do we proclaim all women's views are homogenous. There are differing views among them as well, but largely the data reflects female non-migrants positive outlook towards nature.



Table 5 Author discussion responses to staying in climate vulnerable conditions (focus group discussions)

O Wh	do neonle	continue	livino i	n a climate	vulnerable	condition?

2 , 1 1				
Responses by male migrants	Responses by female non-migrants	Responses by male non-migrants		
"Someone has to stay. I can move, it's easier. Women have to stay, it isn't safe for them outside the village."	"There are risks related to cyclones and river erosion. But should that be a reason to leave your own home? There is more risk for me in leaving home."	"I am old and cannot work outside the village. My daughter-in-law is here, taking care of our family."		
"I [man] am migrating isn't that enough? If they leave, then what is left of home?"	"This is my home. My family and work are here. I can't change that."	"Women don't have much choice. They have to stay. For me, I like living in my village. I feel good		
"They should stay here. If they [women] don't then who will look after home and the family?"	"I have lived with floods, cyclones and poverty. I will fight it here. I am not leaving my place."	"I will leave when my brother is back from the city. Men who are here, either don't have education or not fit to work. Else I don't see any reason to stay here when there are so many risks. For women, what is there outside the village?"		

Further questions on why people live in climate-fragile conditions revealed the gendered aspect of immobility and possibly an explanation of women's positive outlook on climate that regularly poses a hazard to the rural community (Table 5).

Male migrant's attitudes to women's risks appear to be internalized by women, who have not had the opportunity or intention to be mobile. Immobile male migrants have a strong displeasure with female migration, with village and home seen as a natural and safe place for women. Exploring life outside the village is perceived as a greater risk for women than climate vulnerabilities. This view is held by migrants and non-migrants alike, making immobility a gendered decision bound by socio-cultural influences. The inability of women to choose where they live and experience what lies beyond their realm of rural life makes immobility a safer, almost cushioned environment where climate vices must be valiantly fought. This puts greater burden on immobile people who are at the frontline of climate uncertainties yet push the boundaries within the framework of patriarchy, taking on new roles, managing expectations and keeping the identity of home intact.

The question then arises: is the female standpoint the same as that of men? Is this because men have a greater agency or social authority in a patriarchal setup? Women's standpoint is different to men, to the extent that it is more focused on climate response than climate risk. They are aware of climate affecting their daily lives, but have found ways to counter that perspective, putting forward a more solutions or response-oriented framework. Risk is substituted for "life" almost using it as an euphemism, for the limitations of being a woman in a patriarchal society, who as elaborated by the respondent "has to learn to live with it". As Slovic (1999:95) puts it in his seminal work on risk, "danger is real, but risk is socially constructed". The risks of "other" threats—security, compromising honour, deteriorating family ties, disconnect with home and place—that must

be faced once they leave the village are deemed greater for women and the community at large.

Discussion

Our findings show that immobility or persistence in staying in a climate-related context was gendered and dependent on three major factors: (i) home and belonging (ideas of place attachment), (ii) identity constructions (changing role of women) and (iii) risk perception (gendered differential risks and internalizing ideas of risk propagated by men).

Emotions, choices and desires

Power and patriarchy in rural Bangladesh streams gendered roles for men and women in public and private spaces. There seems to be a gendered attachment to place, where men staying back emphasize the roles of "home" and "rootedness", while women see it as a part of their "social identity—playing the role of a good partner" and security. Women's responsibilities are familial and nurturing, dictated by those in power (men). Women's embodied emotions are represented in their everyday practices as noted by Anika and Farida in the examples above. By "staying", women safeguard themselves in retaining the family honour by conforming to the norms. This is internalized by women in many cases who do not see mobility as an available choice but immobility as their way of life. This would be partially in line with what certain scholars identify as voluntary immobility (Carling 2002; Farbotko and McMichael 2019) yet goes beyond its current usage and is more nuanced. "Voluntary immobility" relates to a pronounced choice and inclination to immobility. It is linked to "agency and rights" perspective, involving placed-based connections, identity constructions and culture (Farbotko et al. 2020). While voluntary immobility covers certain parts of agency



and choices, it does not completely ascertain the availability of different choices or the nuances of the immobility discourse. There is a nuance here between what she would have liked and what she can realistically desire.

Since mobilities are influenced by a variety of economic, social and political conditions, to what extent can we consider immobility as voluntary? Here women make the choice to be immobile, but if they do have a choice to be mobile is dependent on many different factors. It is not easy to determine when people do not *wish* to move *versus* their *ability* to move. Gender blurs this distinction as cultural factors influence choices and constraints. This leads to the next question: Would women move if the obstacles to their movement are removed? There is no direct answer to this. If the obstacles were to be removed, the society, their home and the village would not remain the same. The context would change and with it their decision to move.

The emotional bond of women with place is not between the physical place and women but its association with a partner and family. We learn from the interviews that women's strong connection with home is not always based on time and materiality but on acceptance of home because it is their husband's. The immobility of women makes the mobility of men more probable, while women can be "effectively imprisoned by it", signifying differentiated mobilities (Massey 1994: 156). According to Massey, place has a symbolic meaning that is gendered and strongly related to identity. Women's limitation of mobility can be seen as spatial control by men, "and through that, a social control on identity" (Massey 1994: 179).

Bargaining with patriarchy

Not all factors associated with immobility are negative for women. Immobility contributed to new roles for women as head of households, receiving skills and knowledge on agriculture and managing finances for the household. The positive aspect of immobility, where women's struggles to resist or renegotiate within the patriarchal boundaries, is rarely acknowledged. In our analysis, we find women in the research area live with the constraints of patriarchy but negotiate different strategies within this framework that helps them deal with the situation. For example, Shaheen moving out of her in-laws' house to have a new home of her own later uses her immobile status to rear animals for financial benefits, enjoying her "freedoms" of being on her own.

This positive phenomenon is in sync with the idea of "bargaining with patriarchy" (Kandiyoti 1988) which attends to agency deployed by women in embracing of male power, yet resisting the social rules in different ways. Bangladeshi women's active or passive resistance to patriarchy shapes their gendered subjectivity which in this case influences immobility. Such an approach is consistent with the performative view by Butler (1990), where everyday practices shape gendered emotions, providing women an opportunity to employ agency

in implicit ways, to reinterpret power relations. The findings highlight the capability and agency of women guided by affective and emotional notions suggesting autonomy and local dependency. In light of using Mahmood's study (2005), we reflect on women's immobility choices and its performative aspect. The emotions and act of staying establish loyalty to home and family. Men in a similar situation have more agencies in managing desires and choices available to them. Immobility does not simply mean non-movement, but an agency led action that seeks to give the stayers perspective.

Balancing risks

Emotions regulated and embedded in society were important in understanding risk perceptions. Our data indicates many in rural Bangladesh do not migrate despite compelling evidence of changing climate and other deteriorating social indicators, because of a gendered response to risk. Immobility of women, even if it meant living with climate risks, was seen as an appropriate choice by male migrants, who had dislocated themselves from the risk. Women in general were in agreement with this viewpoint. The masculine perspective on climate risk, it appears, was imprinted on women who dismissed spatiality as a consequence of climate vulnerabilities for themselves.

Immobile women's optimistic outlook to climate risks has been an important finding of the study. Women's positive approach to climate risks despite acknowledging it keeps them rooted to the place. This has also been found in other studies where place attachment to the individual can have benefits such as greater satisfaction with one's physical environment (Tartaglia 2013; Khalil et al. 2021). It is in contradiction to Slovic's (1999) findings where the less powerful a respondent's position in society (class, gender, race), the more fearful they were of risks. However, the study has similarities to Slovic's understanding of the relationship between risk and decision-making: "Risk often has no direct implications for decision-making. Risk-management decisions depend on the balancing of options, benefits, and other costs-not just risk. In this sense, we need to look beyond measurement of something called 'risk' to make risk-management decisions" (Slovic 1999:96). If we apply this to the Bangladesh context, women too took their decisions "balancing options" and considering social and cultural costs attached to im(mobility).

Conclusion

One of the major lacunae in climate mobility studies has been the absence of engagement with gendered dimensions of power, identity and agency relate to desires and decisions of im(mobility). These considerations would appear



vital when women and men are embodied constituencies, whose non-movements are patterned by specific social and cultural contexts and impacts of changing climate, as in this case. This paper brings focus on emotions, their effects on individuals and the collective and elaborates on the process of staying and its intersection with mobility. A gendered lens to understand immobility helps us move beyond the male—female polarized analysis, to include fresh perspectives of place attachment, identities and risks that have gendered nuances. While trying to disentangle the binaries of immobility/mobility and male/female perspectives, the paper constructs similar categorizations to draw distinctions but captures the relational aspect to gendered decision-making.

Gender shapes immobility and vice versa. While immobility can be empowering for women, the positive consequences of immobility have long been overshadowed by "mobility empowers, hence more mobility for women means more empowerment" discourse. This paper notes women's empowerment and agency in Bangladesh by dissecting the power differentials between leavers/stayers and men/women, negotiating which women form their identities and changing roles. Gender intersects with different axes such as identity, marital status, age and wealth, to create conditions that influence immobility. Therefore, immobility decisions can be conceived as a process. It does not take place in a single point in time but builds itself through a range of smaller decisions and considerations.

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Declarations

Conflict of interest The authors declare no competing interests.

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References

Adams H (2016) Why populations persist: mobility, place attachment and climate change. Popul Environ 37(4):429–448. https://doi.org/ 10.1007/s11111-015-0246-3

- Adams H, Kay S (2019) Migration as a human affair: integrating individual stress thresholds into quantitative models of climate migration. Environ Sci Policy 93:129–38. https://doi.org/10.1016/j.envsci 2018 10.015
- Adey P (2006) If mobility is everything then it is nothing: towards a relational politics of (im)mobilities. Mobilities 1(1):75–94. https://doi.org/10.1080/17450100500489080
- Adger WN, Eakin H, Winkels A (2009) Nested and teleconnected vulnerabilities to environmental change. Front Ecol Environ 7(3):150–157. https://doi.org/10.1890/070148
- Alam K, Rahman MH (2014) Women in natural disasters: a case study from southern coastal region of Bangladesh. Int J Disaster Risk Reduction 8:68–82. https://doi.org/10.1016/j.ijdrr.2014.01.003
- Ali A (1999) Climate change impacts and adaptation assessment in Bangladesh Anwar. Climate Res 12:109–116. https://doi.org/10.5296/jpag.v8i1.12648
- Anton CE, Lawrence C (2014) Home is where the heart is: the effect of place of residence on place attachment and community participation. J Environ Psychol 40:451–461. https://doi.org/10.1016/j. jenvp.2014.10.007
- Arora-Jonsson S (2011) Virtue and vulnerability: discourses on women, gender and climate change. Glob Environ Chang 21(2):744–751. https://doi.org/10.1016/j.gloenvcha.2011.01.005
- Ayeb-Karlsson S (2020) When the disaster strikes: gendered (im) mobility in Bangladesh. Clim Risk Manag 29(June):100237. https://doi.org/10.1016/j.crm.2020.100237
- Ayeb-Karlsson S, Kniveton D, Cannon T (2020) Trapped in the prison of the mind: notions of climate-induced (im)mobility decision-making and wellbeing from an urban informal settlement in Bangladesh. Palgrave Communications 6(1):1–15. https://doi.org/10.1057/s41599-020-0443-2
- Black R, Adger WN, Arnell NW, Dercon S, Geddes A et al (2011a) The effect of environmental change on human migration §. Glob Environ Chang 21(2011):S3–11. https://doi.org/10.1016/j.gloenvcha.2011.10.001
- Black R, Arnell NW, Adger WN, Thomas D, Geddes A (2013) Migration, immobility and displacement outcomes following extreme events. Environ Sci Policy 27:S32–S43. https://doi.org/10.1016/j.envsci.2012.09.001
- Black R, Bennett SRG, Thomas SM, Beddington JR (2011b) Migration as adaptation. Nature 478(October):447. https://doi.org/10.1038/478477a
- Black R, Collyer M (2014) Populations 'trapped' at times of crisis. Forced Migr Rev 45(February):52–56. http://search.proquest.com/openview/6116f257d209e296780113cbfbc17a08/1?pq-origsite=gscholar&cbl=55113
- Blondin S (2021) "Geoforum staying despite disaster risks: place attachment, voluntary immobility and adaptation in Tajikistan's Pamir Mountains. Geoforum 126:290–301. https://doi.org/10.1016/j.geoforum.2021.08.009
- Boas I, Farbotko C, Adams H, Sterly H, Bush S et al (2019) Climate migration myths. Nat Clim Change 9(December):901–3. https://orbi.uliege.be/bitstream/2268/243102/1/s41558-019-0633-3% 281%29.pdf
- Boccagni P, Baldassar L (2015) Emotions on the move: mapping the emergent field of emotion and migration. Emot Space Soc 16:73–80. https://doi.org/10.1016/j.emospa.2015.06.009
- Bondi L (2006) Emotional Geographies. Routledge, London. https://doi.org/10.4324/9781315579245
- Butler J (1990) Gender trouble and the subversion of identity. Routledge, New York et Londres
- Call MA, Gray C, Yunus M, Emch M (2017) Disruption, not displacement: environmental variability and temporary migration in Bangladesh. Glob Environ Chang 46(September):157–165. https://doi.org/10.1016/j.gloenvcha.2017.08.008



- Cannon T (2002) Gender and climate hazards in Bangladesh. Gend Dev 10(2):45–50. https://doi.org/10.1080/13552070215906
- Carling J (2002) Migration in the age of involuntary immobility: theoretical reflections and Cape Verdean experiences. J Ethn Migr Stud 28(1):5–42. https://doi.org/10.1080/13691830120103912
- Chant S (1998) Households, gender and rural-urban migration: reflections on linkages and considerations for policy. Environ Urban 10(1):5–21. https://doi.org/10.1630/095624798101284437
- Chindarkar N (2012) Gender and climate change-induced migration: proposing a framework for analysis. Environ Res Lett 7(2). https://doi.org/10.1088/1748-9326/7/2/025601
- Clifford J, Marcus GE (1986) Writing culture: the poetics and politics of ethnography. University of California Press, Berkeley, CA
- Cresswell T (2006) On the move: mobility in the modern western world. Routledge, London
- Cundill G, Singh C, Adger WN, Safra de Campos R, Vincent K, Tebboth M, Maharjan A (2021) Toward a climate mobilities research agenda: intersectionality, immobility, and policy responses. Glob Environ Chang 69:102315. https://doi.org/10.1016/j.gloenvcha. 2021.102315
- Davidson J, Milligan C (2004) Embodying emotion sensing space: introducing emotional geographies. Soc Cult Geogr 5(4):523–532. https://doi.org/10.1080/1464936042000317677
- Demetriades J, Esplen E (2008) The gender dimensions of poverty and climate change adaptation. IDS Bull 39:24–32
- Denton F (2002) Climate change vulnerability, impacts, and adaptation: why does gender matter? Gend Dev 10(2):10–20. http://www.jstor.org/stable/4030569
- Desai S, Banerji M (2008) Negotiated identities: male migration and left-behind wives in India. J Popul Res 25(3):337–355. https://doi.org/10.1007/BF03033894
- Di Masso A, Williams DR, Raymond CM, Buchecker M, Degenhardt B et al (2019) Between fixities and flows: navigating place attachments in an increasingly mobile world. J Environ Psychol 61(January):125–133. https://doi.org/10.1016/j.jenvp.2019.01.006
- Djoudi H, Locatelli B, Vaast C, Asher K, Brockhaus M et al (2016) Beyond dichotomies: gender and intersecting inequalities in climate change studies. Ambio 45:248–263. https://doi.org/10.1007/s13280-016-0825-2
- Evertsen KF, van der Geest K (2020) Gender, environment and migration in Bangladesh. Climate Dev 12(1):12–22. https://doi.org/10.1080/17565529.2019.1596059
- Farbotko C, McMichael C (2019) Voluntary immobility and existential security in a changing climate in the Pacific. Asia Pac Viewp 60(2):148–162. https://doi.org/10.1111/apv.12231
- Farbotko C, Dun O, Thornton F, McNamara KE, McMichael C (2020) Relocation planning must address voluntary immobility. Nat Clim Chang 10(8):702–704. https://doi.org/10.1038/s41558-020-0829-6
- Foresight (2011) "Migration and global environmental change. Final project report." The Government Office for Science. London. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/287717/11-1116-migration-and-global-environmental-change.pdf
- Gorman-Murray A (2009) Intimate mobilities: emotional embodiment and queer migration. Soc Cult Geogr 10(4):441–460. https://doi.org/10.1080/14649360902853262
- Hanson S (2010) Gender and mobility: new approaches for informing sustainability. Gend Place Cult 17(1):5–23. https://doi.org/10. 1080/09663690903498225
- Hunter LM, David E (2009) Climate change and migration: considering the gender dimensions. Migration & Climate
- Huntington HP, Loring PA, Gannon G, Gearheard SF, Craig Gerlach S et al (2018) Staying in place during times of change in Arctic Alaska: the implications of attachment, alternatives, and

- buffering. Reg Environ Change 18:489–499. https://doi.org/10.1007/s10113-017-1221-6
- Huq S (2001) Climate change and Bangladesh. Science 294(5547):1617–1617. https://doi.org/10.1126/science.294.
- Huq S, Ayers J (2008) Streamlining adaptation to climatechange into development projects at the national andlocal level. In: European Parliament (ed) Financing climatechange policies in developing countries. European Parliament, Brussels, pp 52–68
- Imam F, Islam MA, Hossain MJ (2018) Factors affecting poverty in rural Bangladesh: an analysis using multilevel modelling. J Bangladesh Agric Univ 16(1):123–30. https://doi.org/10.3329/ jbau.v16i1.36493
- Islam M (2014) Women, politics and patriarchy: a case of Bangladesh. In: Alston M (ed) Gender, Development and Social Change. Palgrave Macmillan. India, London, pp 238–53. https://doi.org/10.1057/9781137390578_15
- Kabeer N (1999) Resources, agency, achievements: reflections on the measurement of women's empowerment. Dev Chang 30(May):435–464. https://doi.org/10.1111/1467-7660.00125 LK https://wur.on.worldcat.org/oclc/5156190059
- Kandiyoti D (1988) Bargaining with patriarchy. Gend Soc 2(3):274–290. https://doi.org/10.1177/089124388002003004
- Khalil MB, Jacobs BC (2021) Understanding place-based adaptation of women in a post-cyclone context through place attachment. Environ Dev 39(March):100644. https://doi.org/10.1016/j.envdev.2021.100644
- Khalil MB, Jacobs BC, McKenna K, Kuruppu N (2020) Female contribution to grassroots innovation for climate change adaptation in Bangladesh. Climate Dev 12(7):664–676. https://doi.org/10.1080/17565529.2019.1676188
- Khalil MB, Jacobs BC, McKenna K (2021) Linking social capital and gender relationships in adaptation to a post-cyclone recovery context. Int J Disaster Risk Reduction 66(March):102601. https://doi.org/10.1016/j.ijdrr.2021.102601
- Lewicka M (2011) Place attachment: how far have we come in the last 40 years? J Environ Psychol 31:207–30. https://doi.org/10.1016/j.jenvp.2010.10.001
- Lewis SJ, Russell AJ (2011) Being embedded: a way forward for ethnographic research. Ethnography 12(3):398–416. https://doi.org/10.1177/1466138110393786
- Luke N, Munshi K (2011) Women as agents of change: female income and mobility in India. J Dev Econ 94(1):1–17. https:// doi.org/10.1016/j.jdeveco.2010.01.002
- Mahmood S (2001) Islamic revival feminist theory, embodiment, and the docile agent: some reflections on the Egyptian Islamic revival. Cult Anthropol 16(2):202–236. https://www.jstor.org/stable/656537
- Mahmood S (2005) Politics of Piety: The Islamic Revival and the Feminist Subject. Princeton University Press, Princeton, N.J.
- Mallick B, Ahmed B, Vogt J (2017) Living with the risks of cyclone disasters in the south-western coastal region of Bangladesh. Environments 4(1):13. https://doi.org/10.3390/environments401 0013
- Mallick Bishawjit, Zakia Sultana, and Christy M Bennett (2020) "How do sustainable livelihoods influence environmental (non-)migration aspirations?" Applied Geography 124 (September). https://doi.org/10.1016/j.apgeog.2020.102328
- Masika R (2002) Editorial. Gender, Dev Clim Chang 2–9. https://doi.org/10.3362/9780855987374.001
- Massey D (1994) Space, place and gender. Polity Press, Cambridge,
- Mata-Codesal D (2018) Is it simpler to leave or to stay put? Desired immobility in a Mexican Village. Popul Space Place 24(4):1–9. https://doi.org/10.1002/psp.2127



- McKay D (2005) Migration and the sensuous geographies of reemplacement in the Philippines. J Intercult Stud 26(1–2):75–91. https://doi.org/10.1080/07256860500074052
- McLeman RA, Hunter LM (2010) Migration in the context of vulnerability and adaptation to climate change: insights from analogues. Wiley Interdis Rev: Clim Change 1(3):450–461. https://doi.org/ 10.1002/wcc.51
- Parsons L (2019) Structuring the emotional landscape of climate change migration: towards climate mobilities in geography. Prog Hum Geogr 43(4):670–90. https://doi.org/10.1177/0309132518781011
- Pearse R (2017) Gender and climate change. Wiley Interdisciplinary Reviews: Climate Change 8(2):1–16. https://doi.org/10.1002/wcc. 451
- Pemberton S, Tripathy Furlong B, Scanlan O, Koubi V, MeghnaGuhathakurta Md et al (2021) 'Staying' as climate change adaptation strategy: a proposed research agenda. Geoforum 121(June 2020):192–96. https://doi.org/10.1016/j.geoforum.2021.02.004
- Pessar PR, Mahler SJ (2003) Transnational migration: bringing gender in. Int Migr Rev 37(3):812–846. https://doi.org/10.1111/j.1747-7379.2003.tb00159.x
- Rahman S (2013) Climate change, disaster and gender vulnerability: a study on two divisions of Bangladesh. Am J Human Ecol 2(2):72–82. https://doi.org/10.11634/216796221302315
- Rao N, Lawson ET, Raditloaneng WN, Solomon D, Angula MN (2019a) Gendered vulnerabilities to climate change: insights from the semi-arid regions of Africa and Asia. Climate Dev 11(1):14–26. https://doi.org/10.1080/17565529.2017.1372266
- Rao N, Mishra A, Prakash A et al (2019b) A qualitative comparative analysis of women's agency and adaptive capacity in climate change hotspots in Asia and Africa. Nat Clim Chang 9:964–971. https://doi.org/10.1038/s41558-019-0638-y
- Shamsuddoha M, Munjurul SM, Khan H et al (2012) Displacement and migration from climate hot-spots in Bangladesh: causes and consequences. Action Aid Bangladesh, Bangladesh, pp 1–33

- Simonsen K (2007) Practice, spatiality and embodied emotions: an outline of a geography of practice. Hum Aff 7:168–81. https://doi.org/10.2478/v10023-007-0015-8
- Skrbis Z (2008) Transnational families: theorising migration, emotions and belonging. J Intercult Stud 29(3):231–246. https://doi.org/10. 1080/07256860802169188
- Slovic P (1999) Trust, emotion, sex, politics, and science: surveying the risk assessment battlefield. Univ Chic Leg Forum 1997(1):59–99
- Svašek M (2010) On the move: emotions and human mobility. J Ethn Migr Stud 36(6):865–880. https://doi.org/10.1080/1369183100 3643322
- Tartaglia S (2013) Different predictors of quality of life in urban environment. Soc Indic Res 113(3):1045–1053. https://doi.org/10.1007/s11205-012-0126-5
- Urry J (2015) Climate change and society. In: Michie J, Cooper CL (eds) Why the Social Sciences Matter. Palgrave Macmillan, London. https://doi.org/10.1057/9781137269928_4
- Uteng TP, Cresswell T (2008) Gendered mobilities. Ashgate Publishing, Aldershot, England
- West C, Zimmerman DH (1987) Doing Gender. Gend Soc 1(2):125–151. http://www.jstor.org/stable/189945
- Wiegel H, Boas I, Warner J (2019) A mobilities perspective on migration in the context of environmental change. Wiley Interdis Rev: Clim Change 10(6):1–9. https://doi.org/10.1002/wcc.610
- Zharkevich I (2019) Gender, marriage, and the dynamic of (im)mobility in the mid-western hills of Nepal. Mobilities 14(5):681–695. https://doi.org/10.1080/17450101.2019.1611026
- Zickgraf C (2019) Keeping people in place: political factors of (im) mobility and climate change. Soc Sci 8(8):228. https://doi.org/10.3390/socsci8080228

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