Climate and Development

ISSN: 1756-5529 (Print) 1756-5537 (Online) Journal homepage: www.tandfonline.com/journals/tcld20

Gender and climate change: differential risks and resilience among internal migrants at their urban destination in coastal Bangladesh

Anouk Brisebois & Roman Hoffmann

To cite this article: Anouk Brisebois & Roman Hoffmann (18 Apr 2026): Gender and climate change: differential risks and resilience among internal migrants at their urban destination in coastal Bangladesh, Climate and Development, DOI: 10.1080/17565529.2026.2651955

To link to this article: https://doi.org/10.1080/17565529.2026.2651955

CLIMATE AND DEVELOPMENT
https://doi.org/10.1080/17565529.2026.2651955

RESEARCH ARTICLE

OPEN ACCESS Check for updates

Gender and climate change: differential risks and resilience among internal migrants at their urban destination in coastal Bangladesh

Anouk Brisebois [a] and Roman Hoffmann [b]

[a]Department of International Studies and Interpreting, OsloMet – Oslo Metropolitan University, Oslo, Norway; [b]International Institute for Applied Systems Analysis (IIASA), Population and Just Societies Program, & Wittgenstein Centre for Demography and Global Human Capital (IIASA, OeAW, University of Vienna), Laxenburg, Austria

ABSTRACT

Mobility can shape climate risks in urban destination areas, which are not equally experienced. Gender, migrant status, and factors such as age, parental status, and economic conditions often intersect to influence how migrants navigate and respond to climate hazards. Yet, the gendered and intersectional dimensions of climate risks and resilience, along with their underlying material, institutional and social determinants, remain underexplored in internal mobility contexts. This study draws on qualitative fieldwork conducted in Mongla, a growing destination area in Bangladesh, to examine how these determinants influence climate risks and resilience among migrants through a gendered and intersectional lens. The findings suggest that newly arrived migrant women face heightened vulnerability to climate hazards due to overlapping constraints that limit their resilience upon arrival. Power dynamics and social differentiation influence unequal access to resources and services. In particular, recently arrived migrant women often have fewer and limited access to information, institutional aid, or social support, which are critical for responding to climate hazards. By shifting the analytical attention to urban destination areas, this study offers a gendered understanding of climate risks and resilience in Bangladesh, providing empirical insights to inform more equitable policies to support internal migrants in urban destinations.

ARTICLE HISTORY
Received 11 December 2024
Accepted 23 March 2026

KEYWORDS
Gender; climate change; mobility; risk; resilience; Bangladesh

1. Introduction

Rural-to-urban mobility is an integral part of daily life in Bangladesh (S. Ahmed & Eklund, 2021; Bernzen et al., 2019; Etzold & Mallick, 2016; Khan et al., 2021). Many migrants move from rural areas to major urban centres, including Dhaka, where an estimated 400,000 new migrants arrive yearly (Duque, 2024). Besides these major urban centres, secondary cities are becoming increasingly attractive destinations. Mobility trends also involve a high and growing proportion of women who relocate to urban areas, both independently and with their families (Dewan, 2023; Evertsen, 2021).

While urban centres offer migrants opportunities for livelihood diversification, improved access to services, and greater economic prospects, they also present considerable challenges. Many migrants face precarious living conditions, including inadequate housing, limited access to clean water and sanitation, and overcrowded settlements (Hoffmann & Muttarak, 2021). Economic insecurity is common, as migrants often rely on informal or unstable employment and may lack legal protections or social safety nets (Sakdapolrak et al., 2024). Additionally, social exclusion and limited access to public services can further hinder migrants' ability to integrate, exacerbating the risks they experience in urban environments (Mostofa, 2024).

The vulnerabilities faced by migrants are increasingly compounded by climate change, with Bangladesh considered one of the countries most severely affected globally. Between 2000 and 2019, the country experienced 185 climate events (UN Women, 2024), which have led, directly and indirectly, to an estimated 4.1 million internal displacements (Khan et al., 2021). Environmental hazards such as storms, extreme heat, waterlogging, and flooding are becoming more frequent and severe, disproportionately affecting low-income and marginalized populations, including many rural-to-urban migrants (Bangladesh Ministry of Environment, Forest and Climate Change, 2022). In this context, climate change not only amplifies existing insecurities but also introduces new forms of disruption that challenge the resilience of migrants. Women are particularly vulnerable to these risks, as they often face intersecting social, institutional and material disadvantages (Ayeb-Karlsson et al., 2016; Betancourt & Zickgraf, 2024; Boas et al., 2022; Chindarkar, 2012; Lede et al., 2024).

How gender influences the impacts of climate change on internal migrants' daily lives in Bangladesh and their capacity

CONTACT Anouk Brisebois Anouk.brisebois@gmail.com Department of International Studies and Interpreting, OsloMet – Oslo Metropolitan University, P.O. Box 4, St. Olavs plass, NO-0130 Oslo, Norway

Supplemental data for this article can be accessed online at https://doi.org/10.1080/17565529.2026.2651955.

to anticipate, cope with, and recover from climate-related shocks remains insufficiently understood. In addition, the structural factors underlying the unequal distribution of resources and services, which are key determinants of risks and resilience, are frequently overlooked in mobility research (Ryan, 2011), perpetuating exclusions and structures of privilege. Additionally, while much of the climate mobility literature emphasizes climate change as a mobility push factor from origin areas (Adger et al., 2002; Gioli & Milan, 2018; Singh & Basu, 2020; Vinke et al., 2020), relatively little attention has been given to conditions in destination areas, where risks often persist or even intensify for migrants.

To address these gaps, this study aims to answer the following research question: How do gender and internal mobility influence differential climate risks and resilience among migrant women and men at their urban destination in Bangladesh?

To answer this question, we draw on qualitative fieldwork conducted in Mongla, a growing urban destination area and hotspot for climate change in Bangladesh. Using insights from interviews with internal migrant women and some of their husbands at their urban destination, we show how climate risks and resilience are influenced by gender, migrant status, and other intersecting factors, including age, parental status (i.e. whether they have children to take care of or not), and economic conditions. We also show how power relations and social differentiation shape unequal access to material, institutional and social resources and services among migrants at their destination, representing key determinants of risks and resilience. We find that newly arrived women in Mongla are particularly vulnerable to climate hazards as they experience overlapping constraints that restrict their resilience. This has important implications for policies aimed at inclusive resilience-building in mobility contexts, particularly in urban destination areas.

This paper is divided as follows. Section 2 provides an overview of the literature and outlines the conceptual approach of this study. This is followed by a description of the context in Mongla in section 3. Section 4 details the qualitative research methods employed and the participants interviewed. The findings are then presented and analysed through our conceptual lens in section 5, focusing on how gender intersects with migrant status and other factors to shape distinct access to resources and services, and the implications for risks and resilience. Section 6 discusses the significance of the findings for the literature and policy-making. It highlights the need to address context-specific gender and intersectional inequalities, and how they mediate access to resources and services at destinations to shape differential climate risks and resilience among migrants. Section 7 concludes this article by highlighting how the key findings can inform policy debates on climate risks and resilience in internal mobility contexts and at destination areas.

2. Literature review and conceptual approach

This study builds on the IPCC's conceptualization of climate risks as the interaction of hazards, exposure, and vulnerability, which determines the possibility of negative impacts on people's lives (IPCC, 2014, 2019). "Exposure" refers to the probability of facing a hazard at a specific time and place (McLeman & Smit, 2006), while "vulnerability" refers to the susceptibility of being negatively affected by the hazard (Adger, 2006). Climate events, such as severe storms and flooding, can have profound consequences for affected households through both direct and indirect impacts. Direct impacts arise from climate events themselves and include health risks, damage to housing and infrastructure, and disruptions to essential services, food security, and access to potable water. Indirect impacts emerge through social and economic channels, with negative consequences for livelihoods, human security, and overall well-being over time (Barnett et al., 2024; Hoffmann & Muttarak, 2021; Sakdapolrak et al., 2024; Siddiqui et al., 2022). In our analysis, we examine both direct and indirect impacts, focusing on health and well-being outcomes, livelihood disruptions, and deprivation of food and potable water, which are highly prominent climate impacts in the context of Bangladesh (e.g. Ahmed & Eklund, 2021; Alam et al., 2018; Ara Parvin & Reazul Ahsan, 2013; Momtaz et al., 2021).

Recent conceptualizations of climate risks have increasingly emphasized not only exposure and vulnerability to climate hazards, but also the differentiated capacities of individuals and groups to respond to such hazards. In this article, we refer to the concept of "social resilience", understood as people's capacity to cope with, adapt to, and recover from various kinds of stresses and shocks (Adger et al., 2002; Deshingkar, 2012; Keck & Sakdapolrak, 2013; Sakdapolrak et al., 2016; Thieme & Siegmann, 2010). Risks and resilience are two distinct concepts which are closely related, as resilience determines how individuals or communities navigate risks and experience impacts. In this regard, scholars (e.g. Asadzadeh et al., 2022) have emphasized resilience not only as the capacity of individuals, communities, or systems to recover from adversity, but also as a transformative process, enabling adaptation and positive change in response to long-term challenges and disruptions.

While the occurrence of hazards such as floods, cyclones, or extreme heat is primarily shaped by natural processes, the extent to which individuals and communities are affected is largely determined by social, economic, and political influences (Forsyth, 2018; Ha-Mim et al., 2020). In that sense, risks are not simply a matter of physical geography and natural forces but are deeply rooted in inequalities shaped by power relations and social differentiation (Szaboova et al., 2023).

Drawing on the literature (e.g. Forsyth, 2018; Sakdapolrak et al., 2024; Siddiqui et al., 2022; Szaboova et al., 2023), we conceptualize the determinants of climate risks and social resilience as encompassing material, institutional, and social dimensions, which shape who is exposed to hazards and to what extent, how vulnerability is produced, and what capacities exist to respond in different contexts. Material determinants include different access to assets, resources and services, such as land tenure, safe housing, and economic opportunities, which play a central role in shaping distinct levels of exposure and vulnerability to hazards and abilities to respond (Adger et al., 2002). Those with limited material means are often compelled to live in hazard-prone areas,

such as informal urban settlements with limited services (Siddiqui et al., 2022).

A second set of determinants, institutional in nature, includes access to formal assistance and relief from local authorities, NGOs, and other stakeholders. Such institutional determinants further condition migrants' exposure, vulnerability, and capacity to respond to climate hazards, particularly in destination contexts where institutional aid and support may be unequal or exclusionary (Forsyth, 2018; Siddiqui et al., 2022). Considering these institutional dimensions is crucial, as risks and resilience are shaped not only by individual characteristics and resources, but also by broader influences beyond individual control (Fünfgeld, 2010).

Beyond material and institutional determinants, the literature also highlights the importance of social determinants, particularly social networks and forms of social capital, in shaping resilience (Aldrich & Meyer, 2015; Burt, 2001). Kinship ties, friends and neighbours, and membership in community organizations can facilitate access to support, information, and resources, which can enhance resilience (Carmen et al., 2022). For instance, social networks can form an important source of bridging social capital by providing access to otherwise unavailable resources, information and knowledge, enabling migrants to navigate unfamiliar contexts, cope with uncertainty, and build informal systems of mutual support and aid (Aldrich & Meyer, 2015). However, access to social capital is unevenly distributed and often constrained for marginalized groups. Scholars such as Portes (1998) and Ryan (2011) argue that social capital can reproduce exclusion, reinforce in-group norms, and exacerbate inequalities, particularly when social ties limit access to resources or when power hierarchies mediate inclusion in social networks.

Moreover, critiques of resilience thinking have shown that resilience discourse can obscure questions of power by focusing on individuals' resilience without addressing the root causes of vulnerability and inequality (Brown, 2014; Pelling, 2010). These unequal social dynamics are further shaped by gender, which the literature identifies as a key factor in shaping climate risks and resilience (Fordham, 2008; Jabeen, 2014; Jordan, 2019). Gender, understood as "society's construction and perception of the roles, obligations, behaviours, activities, and status that are considered appropriate for men and women, based on existing norms of femininity and masculinity" (Vigil, 2024, p. 1), can impose barriers that shape differential access to resources, decision-making power, and protection, especially during times of stress (Ayeb-Karlsson, 2020; Boas et al., 2022; Cannon, 2002; Chindarkar, 2012; Denton, 2002; Ferdous & Mallick, 2019; Sultana, 2014).

In Bangladesh, these gendered challenges are rooted in patriarchal power structures which reinforce gender roles and norms. Such structures often assign women to the role of household caretakers, responsible for the family and household chores, mainly in private spaces, while men are expected to meet the family's financial needs, mainly by engaging in work within public spaces (Evertsen, 2021; Evertsen & van der Geest, 2020; Hossain, 2017; Kabeer, 1988). Thus, Hossain (2023), and Thieme and Siegmann (2010) suggest that, given their often more significant financial contribution to the household and combined with patriarchal norms, men in Bangladesh often hold decision-making power within the household and wider community, which can limit women's capacity for resilience.

Climate risks among migrants are not shaped by gender alone but also by a range of intersecting factors that determine what men and women can do under different circumstances (Betancourt & Zickgraf, 2024). Factors including age, economic conditions, and parental status can reinforce inequalities and exacerbate vulnerabilities. We therefore build on Crenshaw's (1991) framework of intersectionality to account for how such factors overlap to shape migrants' distinct access to material, institutional and social resources and services. Using this framework allows us to examine how different combinations of individual characteristics interact to produce varied experiences of risks and resilience. Rather than treating migrants as a homogeneous group, it helps us understand why certain individuals face greater constraints or opportunities in responding to climate hazards.

3. Mongla, Bangladesh: a background to the study site

Amid climate change, among other mobility drivers, Bangladesh is witnessing a significant rise in rural-urban mobility, with many migrants moving to already overcrowded megacities. Thus, smaller cities are adopting novel approaches to welcome new migrants and are emerging as alternative destination areas. Among these cities, Mongla, a small coastal city in southwestern Bangladesh, is becoming an increasingly popular destination for migrants, notably in the context of climate change and given the city's recent industrial development. Yet, Mongla remains an understudied destination area.

Moreover, both its past and current mayors, as well as the International Centre for Climate Change and Development (ICCCAD), aim to make Mongla a model of 'climate-resilient, migrant-friendly' cities (K. Ahmed & Choat, 2022; Aljazeera, 2022; Davison, 2022). Given its growth potential, as well as its seaport and export processing zone (EPZ) – the second-largest in Bangladesh (Rahman et al., 2023) –, Mongla aspires to become 'migrant-friendly' by welcoming around half a million migrants in the coming years by creating livelihood opportunities within the port's and EPZ's industries (Ahmed & Choat, 2022; Aljazeera, 2022; Davison, 2022). However, with a population of 42,606 people as per the latest census of 2022 (Bangladesh Bureau of Statistics, 2023), Mongla already faces a scarcity of land. In this context, internal migrants, particularly newly arrived ones, often settle in overcrowded informal settlements with insufficient essential sanitation, electricity and drinking water infrastructure, resulting in inadequate living conditions. This heightens their exposure and vulnerability to risks and undermines their capacity to respond to hazards. Moreover, internal migrants in Mongla are frequently excluded from social protection schemes, leaving them in precarious legal and economic positions.

Additionally, Mongla is an interesting study site in the context of climate change in Bangladesh, as it aims to become

a 'climate-resilient' city. To do so, it has recently developed a flood prevention infrastructure, including embankments, flood-control gates, walkable riverside brick paths, and a partial water drainage system (Ahmed & Choat, 2022; Davison, 2022; Rahman & Kuhl, 2021). Additional prevention infrastructures include cyclone shelters, early warning systems, and improved communication channels. However, because of its geographical location, Mongla frequently faces cyclones, irregular rain patterns, and extreme heat, while the areas near the city's rivers and canals more significantly experience floods, soil erosion, and increased multifactorial salinity (see Figure 1) (ICCCAD, 2019). In addition, the city also lacks efficient water drainage and waste collection systems, which exacerbate waterlogging during floods and heavy rains.

Moreover, Mongla is an interesting study site from a gender perspective. The city's recent industrial growth has led to an increasing number of women working outside of their homes, particularly in the garment industry. However, women working in the garment industry in Mongla and Bangladesh are generally confined to low-paid and undervalued positions in highly exploitative contexts (Chowdhury, 2019; Hossain, 2023; Huang, 2020; Kabeer et al., 2011). In addition, women rarely relocate independently, typically moving to Mongla with their families or a male partner, or after marrying into a local family or a family of long-term migrants.

Taken together, Mongla exemplifies key tensions in Bangladesh, including rapid industrial development through the establishment of an Export Processing Zone (EPZ), rising rural-to-urban mobility, heightened vulnerability to hazards, and persistent gender inequalities. Thereby, it offers an interesting, yet understudied, study site to understand climate risks and social resilience in mobility contexts and at urban destinations.

4. Methodology

4.1. Qualitative research methods

The fieldwork in Mongla occurred over two periods of two months each (March-May 2023 and February–March 2024) and was conducted by the first author. This two-stage design was chosen to alter the researcher's 'outsider' status over time (Carling et al., 2014), seeking deeper engagement and more meaningful insights from the participants. The two-stage design also allowed for the iteration of the project and research design based on the outcomes of the first fieldwork. During both periods, a different female research assistant was locally hired to provide translations during the interviews from Bangla to English and to transcribe the audio-recorded interviews.

A qualitative approach was chosen to develop 'experience-near' knowledge about the ways migrants think, feel, and consider their experiences (Geertz, 1974). These interviews also provided an entry point to better understand intra-household dynamics, such as tensions and cooperation forms between household members (Helle-Valle & Borchgrevink, 2018).

With an initial focus on migrant women and their livelihoods, the first fieldwork period was built on personal livelihood history interviews with migrant women in Mongla to understand the role of internal mobility and gender on their livelihood trajectories in the context of climate change. These interviews also provided insights into migrant women's social positions in Mongla, their (economic) decision-making process within their household, and the wider gender dynamics (Ayeb-Karlsson et al., 2016; De Haan & Zoomers, 2005; van der Geest, 2004).

To further develop 'experience-near' knowledge about migrant women's experiences beyond their livelihoods, life history interviews with the same migrant women who were initially interviewed were conducted during the second

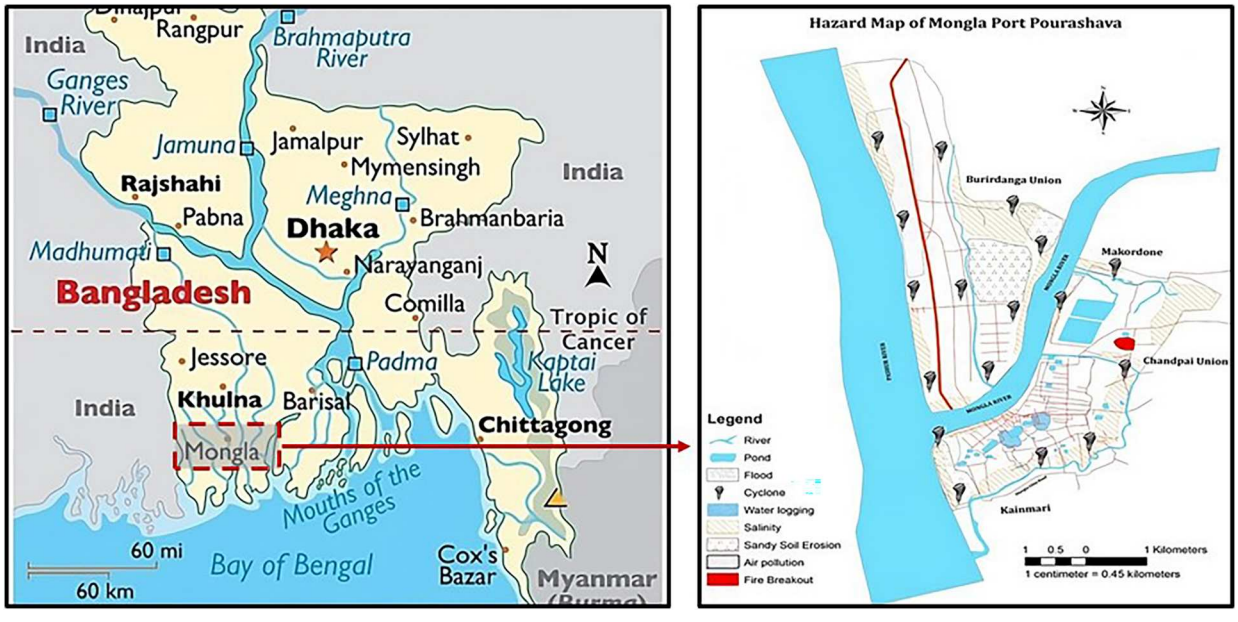

Figure 1. Illustration of commonly experienced hazards in the Mongla port municipality area (Archus, 2021 (left); ICCCAD, 2019 (right)).

fieldwork period. Additionally, to gain deeper insights into intra-household dynamics and gender disparities, interviews with some of their husbands were conducted during the second fieldwork period. Together, these interviews allowed us to gain insights into the participants' gendered perceptions and meanings of their climate experiences, the impact on their daily lives, and their responses during climate events.

The second fieldwork period also included ten key informant interviews and daily field observations. This allowed us to better understand the participants and the broader community's behaviours in their daily contexts. This also allowed us to triangulate the information gathered through the interviews with wider contextual information, enabling a more accurate interpretation of the data (Buthe et al., 2015; Kapiszewski et al., 2015; Kumar, 1989; Sánchez-Ayala, 2012; Singh & Basu, 2020).

Before each interview, participants were informed verbally and in written form about the purpose of the study, their rights, and the confidential nature of their data, both in English and in their mother tongue: Bangla. Following this explanation, they were allowed to ask questions and decide whether they wanted to participate or not. Consent forms were signed by all those who agreed to participate, as requested by the ethical requirements of the host institution, and a copy of the consent form was given to all participants. Moreover, the positionality of the author conducting interviews, a woman from the Global North, and her affiliation with local NGOs, could have led to ethical challenges in the field and could have influenced the accuracy and depth of the participants' answers. To engage with such potential ethical challenges and minimize risks, the author conducting interviews adopted an 'ethics of care' approach (Pettersen, 2011) to reflect on contextual sensitivity and cultural differences, relationality and unequal power dynamics between the researcher and the participants, as well as the responsibility of the researcher vis-à-vis the participants and the local community.

Finally, the data collected during both fieldwork periods were treated and thematically analysed using the qualitative data software NVivo. After each fieldwork period, a thematic analysis was conducted to identify, analyse and report patterns and recurrent shared meanings across the data to translate the data into themes (Auerbach & Silverstein, 2003; Braun & Clarke, 2006, 2016). This helped us better understand migrant women's and men's distinct but also at times shared perceptions, meanings, and interpretations of their climate experiences at their destinations, particularly concerning their varying responses, exposure and vulnerability to climate hazards.

4.2. Socio-demographic characteristics of the participants

During both fieldwork periods, interviews were conducted with women who had internally migrated to Mongla from other parts of Bangladesh, which constituted the main selection criterion. The initial focus on migrant women was central to this study to explore their gendered experiences at their destination and what shaped their opportunities and constraints. During the first fieldwork period, 24 migrant women who met this criterion were interviewed. Drawing on an intersectional approach, women with diverse migrant status, education, age, and occupations were selected. Yet, they all belonged to the same low working class with similar unskilled or semi-skilled jobs, limited formal education, and relatively poor economic conditions. They also mainly occupied indoor or home-based livelihoods: garment workers, tailors, house cleaners, livestock caretakers, small shop workers, and housewives.

During the second fieldwork, the aim was to re-interview the original participants to build trust and gain deeper insights. 22 of the 24 migrants initially interviewed were re-interviewed, given their availability, presence in Mongla, and willingness to participate again. Additionally, ten of their husbands were interviewed to gain a better understanding of intra-household dynamics and tensions. Interviewing men during the second fieldwork period was informed by the recognition that interviewing only women during the first fieldwork period limited our understanding of intra-household dynamics. These husbands were selected based on their presence at the study site during the second fieldwork period and interest in participating in the research. They worked as daily labourers, drivers, small shop owners, garment workers (higher positions than women garment workers) and NGO employees.

The relatively small sample size did not allow for a representative sample or generalization of the findings, which is not the aim of this study. Rather, it provides empirical and situated knowledge of the interviewees' perceptions of their climate experiences in Mongla (Sánchez-Ayala, 2012).

For both fieldwork periods, the research distinguished between two types of internal migrants who relocated to Mongla: newly arrived and long-term migrants. The majority represent newly arrived migrants who had relocated from various (mainly rural) areas in Bangladesh to Mongla within the past five years[1], while a minority were long-term migrants who had relocated to Mongla more than five years ago. The reasons for their mobility varied: better livelihood opportunities, marriage (for women), forced mobility due to eviction or river erosion, economic hardships, and familial ties at the destination. Some husbands mentioned moving to Mongla in their childhood with their parents, a point not raised by women. Focusing on migrants' experiences, the research did not include interviews with locals, except for one husband and the key informants.

The participants lived in various settlements across different wards of Mongla. Some resided in informal settlements, including in areas near the Mongla River, partially safeguarded by embankments, and in houses made of metal sheets, wood, and clay. Others lived in a formal settlement, in newer and potentially more resilient houses made of cement with metal-sheet roofs. However, this formal settlement is further away from the centre, located near the river without embankments, and with limited access to transportation and facilities. Most participants resided with their nuclear families. A few women lived without their husbands for reasons including livelihood diversification, divorce, or death of their spouse. Some also live with their nuclear families and parents or parents-in-law.

A contextual table in Annexe 1 (Table 1) provides a comparative profile of newly arrived and long-term internal migrant women and men. It highlights differences between these distinct types of migrants, but also between women and men, and their distinctions in terms of age, livelihoods, familial circumstances, education, housing types, and residential rights. It provides an overview of their distinct access to social capital, economic opportunities, and institutional resources and services.

5. Empirical findings

5.1. Gender differences in climate risks

Migrant women and men experience differential climate risks at their destinations (see Figure 2).

5.1.1. Health and well-being issues

In Mongla, migrant women and men experience different consequences of climate hazards, facing distinct risks to their health and well-being. Women interviewed in the study commonly reported experiencing skin irritation, genital health issues, and sanitary problems. They attributed these health issues primarily to the extended contact with salt water, which can become increasingly saline during episodes of extreme heat and drought, among other causes, particularly as the women engage in domestic tasks like cooking and washing. Sanitary issues were common during heavy rainfalls and flooding, as access to toilets – frequently positioned on low-lying ground and prone to flooding – is challenged. The interviewed women also reported heightened stress and anxiety during climate events, largely due to their multiple household responsibilities, along with both perceived and real physical limitations that make them more vulnerable in periods of stress. In an interview, a newly arrived migrant woman, a housewife in her 40s living with her husband in Mongla, shared:

> During climate crisis, women are more vulnerable, and they are more worried. At that time, they get any kind of small accident. But men are less worried and more capable of resisting natural disasters.

Similarly, another newly arrived migrant woman in her 20s, self-employed and mother of two young children, shared:

> Women are more impacted because women are less strong compared to men. During calamities […], women need to manage all the work around the house […]. Men are physically fitter than women. Women fear about what they should do. How do I prepare myself to prevent natural disasters?

The impact of such gender roles and related perceptions of women's physical limitations on climate risks is also shared by a self-employed long-term migrant woman in her 40s with no formal education:

> Women are more vulnerable to natural disasters because women are not so fast [in reaching the shelter] compared to men. Women need to manage their household and children at the time. Men are faster to go anywhere because they are God-gifted.

In this context, gender roles and social perceptions of women's physical limitations are key to understanding the health and well-being risks faced by women during climate events. These roles and associated obligations are shaped by various intersecting factors, including the presence of children in the household, the broader familial context, the family's social status, and the individual's age, with different age groups assuming distinct responsibilities within the household.

While women are vulnerable due to specific gender roles and societal perceptions of their limitations, men in Mongla also face life-threatening risks from climate hazards. Their exposure is particularly high because they often work in outdoor occupations, making them more susceptible to risks

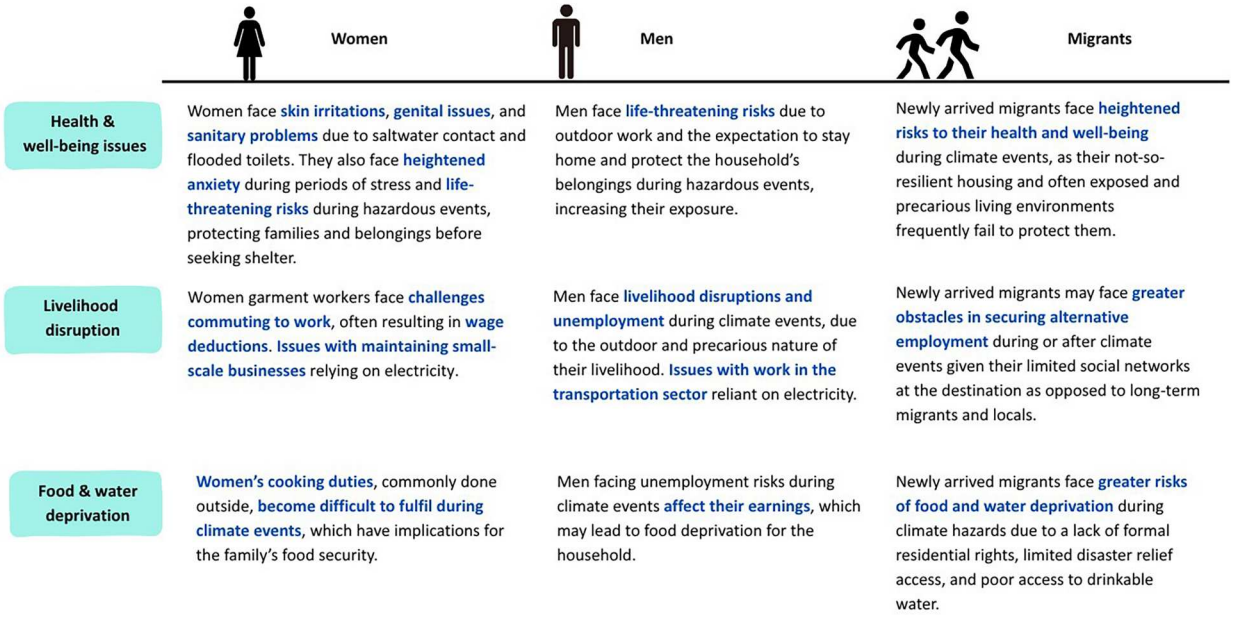

Figure 2. Differences in climate risks across three areas for women, men, and migrants.

during climate events. Additionally, several interviewed men reported being expected to stay at home during climate events to protect household belongings, further increasing their exposure.

Beyond gender, newly arrived migrants often reported that their poor economic circumstances result in housing and living conditions that are less resilient than those of long-term migrants or non-migrants. This makes them more vulnerable to health and well-being risks during climate events, as their poor housing and exposed environments frequently fail to offer adequate protection. A newly arrived migrant woman in her 20s, living in an informal settlement with her young child and two sisters-in-law, shared:

> Native people are more adaptive when natural disasters are coming because they made their houses enough strong […], like these houses have more tolerance to protect [against] cyclones. But this house is not enough strong to [resist] natural disasters […], it can be blown away.

5.1.2. Livelihood disruptions and unemployment

Migrants in Mongla also face significant livelihood disruptions and heightened risks of unemployment during climate events. Due to the predominantly outdoor nature of their work, several interviewed men reported being particularly vulnerable to job loss and income instability during such events. A daily wage labourer in his 40s who lives in Mongla with his wife shared his struggles, highlighting the precariousness of many men's livelihoods in Mongla when outdoor work becomes difficult or unavailable during climate-related disruptions.

> [During] cyclonic or flooding times, waterlogging problems occur, and I face an unemployment problem. I have no work during these times. So, I face challenges.

In contrast, some migrant women working as garment workers also emphasized that climate hazards may compromise their livelihood, as they face challenges commuting to work, having to cross the river on small boats to reach the EPZ where they work. During hazardous events, this commute becomes dangerous or impossible. Consequently, their inability to reach work often leads to wage deductions. This highlights the precarious nature of their employment and broader lack of social protection for garment workers. A newly arrived migrant woman, a wage labour worker in her 20s who lives with her young children and her parents in Mongla, recalled her experience:

> It is difficult to go to work. If I get wet, I will catch a cold, so I don't go to work. And if I can't go to work, the authority makes me stand outside the next day. Some people get fired also. And as long as I stand, money is deducted from my salary.

Migrant women and men with small-scale businesses reliant on electricity also reported being particularly affected by climate-related power outages. An interviewed self-employed long-term migrant man in his 40s, living in Mongla with his two children and his wife, shared the impact of climate hazards on his livelihood:

> In summer or cyclonic times, we can't get enough electricity. So we face challenges. As I'm a van driver, I can't charge my van properly, and I face unemployment problems.

Similarly, his wife, a self-employed woman, explained how the lack of electricity hampers her informal work, including her tailoring work, because of insufficient lighting during climate events.

5.1.3. Food and potable water deprivation

Deprivation of food and potable water is a common challenge in Mongla during climate events. Since men often face unemployment risks during these events, many interviewed men mentioned that their earnings, and consequently their ability to fulfil their role as family breadwinners, are challenged. A self-employed long-term migrant man, a husband and father of two young children, described how he and his family endured food deprivation during such times in Mongla:

> When I don't go to work [during hazards], then I don't get money from my work. At that time, I could not manage much good food for my children.

Conversely, women's household work, especially outdoor cooking, becomes difficult to carry out during climate events. This has significant implications for the family's food security. A wage labour worker and mother of two young children shared the food deprivation risks she and her family faced during extreme events in Mongla:

> Our kitchen was outside, so [when] it rained, we could not cook, we had to starve without food.

Being a migrant, especially a newly arrived one, often means facing heightened food and water insecurity, especially during climate events. Due to migrants' lack of formal residential rights, they are frequently excluded from aid provided by local authorities, NGOs and other stakeholders during climate events, including the distribution of dry food. A newly arrived migrant woman daily labourer living in an informal settlement without formal residential rights, shared: "As I'm a migrant, I couldn't get help from any organizations or governmental authorities."

Additionally, migrants and particularly newly arrived migrants tend to settle in informal settlements with limited access to potable water. This problem becomes especially severe during extreme heat, when many water sources turn increasingly saline and undrinkable.

5.2. Differential responses during climate events

During climate hazards, adequate responses can help mitigate risks and enhance resilience. The interviewees reported employing a range of strategies to navigate climate hazards and their impacts. One of their priorities is protecting their belongings and seeking shelter to safeguard both their possessions and themselves from potential harm during climate events, particularly floods and cyclones. Gender and migrant status differences become apparent in access to information about coming climate hazards, the subsequent responses to adopt, and the setting of priorities.

Access to information about impending climate hazards is highly gendered. A newly arrived migrant garment worker in her 20s who lives in Mongla with her nuclear family and family-in-laws described such disparity:

> Men are more informed compared to women. We have no television, so we are not getting information first about climatic events. As men are staying outside most of the time like in tea stalls they are getting information first. At the same time, mobile internet helps men to get more information. My father-in-law watched TV news yesterday and he said that [a warning] signal is [ongoing]. We have to be aware.

However, even when information is eventually received by both women and men, often through distinct channels and at different times, men and women tend to respond differently and set varying priorities. Upon receiving an alert about a coming hazardous event, many of the migrant women interviewed mentioned prioritizing managing their households, children, and livestock, before going to the shelter with their children and the elderly. They would also select important documents, belongings, and valuables to protect, either at home or to carry to the shelter. A newly arrived migrant, a self-employed woman in her 20s and mother of two young children, shared her preparation before a disaster hits:

> During cyclones, I try to keep my children safe because they are my priority, and I try to go to the cyclone shelter. I also try to keep my chickens and ducks in their case […], and I tied this case to the tree so that they are not harmed. I try to cover my household accessories […] and try to close all my doors and windows.

Conversely, the interviewed men often reported protecting their livelihoods when a warning alert is given before seeking shelter to protect themselves. For instance, a long-term migrant, boat driver man, also a husband and father of two children, shared:

> I'm the only source [of income] for my family. [During disasters], I first try to save my boat and after that, I go to the cyclone shelter. […] During a cyclone, I moved my boat into the canal. After that, I tied up the boat with a strong rope in the tree. After returning home, I tried to go to the cyclone shelter with my children and wife. […] One time, I faced difficulties in parking my boat. At that time, I called my wife to go to the cyclone shelter.

The men interviewed also frequently reported that they often stay at home during hazardous events to protect household belongings and property from the adverse impacts of climate hazards. In these situations, they frequently send women, children, and the elderly to shelters while they remain at home.

Irrespective of gender, migrant status further influences the types of responses adopted during climate events. Newly arrived migrants often have limited access to information and local knowledge. Therefore, newly arrived migrants often expressed greater concern about safeguarding themselves and their belongings and more often reported seeking shelter outside their homes during unfamiliar climate events. Their unfamiliarity with the local climate and lack of awareness about effective protective measures contribute to their heightened concerns, especially when compared to long-term migrants or locals. A newly arrived migrant, a self-employed woman in her 20s and mother of two young children, shared her perceptions of the differences between migrants and locals:

> People who are native to this place are well prepared for climatic events, and they are more adaptive and used to them. They are experienced, and they know how they protect their households or other things to do. But people who are migrants in Mongla are less experienced and less adaptive.

Lastly, against the backdrop of water sources becoming increasingly saline and undrinkable during periods of extreme heat and drought, among other causes, migrant women interviewed reported adopting various alternative water collection methods. They mentioned walking longer distances to find fresher, less salty water, collecting rainwater in different types of containers, and sometimes purchasing water from private vendors. A newly arrived migrant, a self-employed woman in her 20s, and mother of two young children, described how she copes with water salinity during droughts and extreme heat periods:

> Water has to be fetched from distant ponds. It takes 10 min to go there. We have been given water tanks to collect rainwater. It holds 3000 liters of water. I collected rainwater last year and am still drinking it.

However, newly arrived migrants generally lack access to such large water collection tanks, as opposed to long-term migrants or locals. One of several newly arrived migrant women noted that, due to her lack of permanent residence status, she had not received a water tank from the local authorities. As a result, she – like many other recently arrived migrant women – must travel long distances more frequently to collect water, owing to her limited water storage capacity. While some migrant households reported purchasing water from private vendors to cope with water salinity, this option tends to be available primarily to households with better economic conditions, as the cost of purchasing water is often too high for poorer households.

6. Discussion: determinants of risks and resilience

Building on the above empirical insights, this section analyses the determinants that shape differential climate risks and resilience among internal migrants in Mongla (see Figure 3).

6.1. The role of gender in shaping social inequalities

As stated earlier, risks are deeply rooted in inequalities shaped by power relations and social differentiation. These inequalities determine differential access to material, institutional and social resources and services, which influence both exposure and vulnerability to climate hazards and the capacity to respond. Here, we first examine how gender itself operates as a foundational structure shaping these inequalities.

In the patriarchal context of Bangladesh, prevailing gender hierarchies reinforce gender roles and norms that often lead to women's seclusion, exclusion and marginalization (Feldman, 2001; Hossain, 2023). These gender roles and norms create structural barriers that reproduce women's vulnerability to hazards while limiting their capacity to respond, influencing what women and men can and cannot do during hazardous events. For instance, the quotations from the previous section suggest that women's greater responsibility towards the household during hazards often limits their physical mobility and capacity to protect themselves. Moreover, the social perception of women as physically weaker or less capable, as highlighted by some of the migrant women interviewed, reinforces perceptions of passivity and dependency, which is often internalized by women themselves, further constraining their capacity to respond.

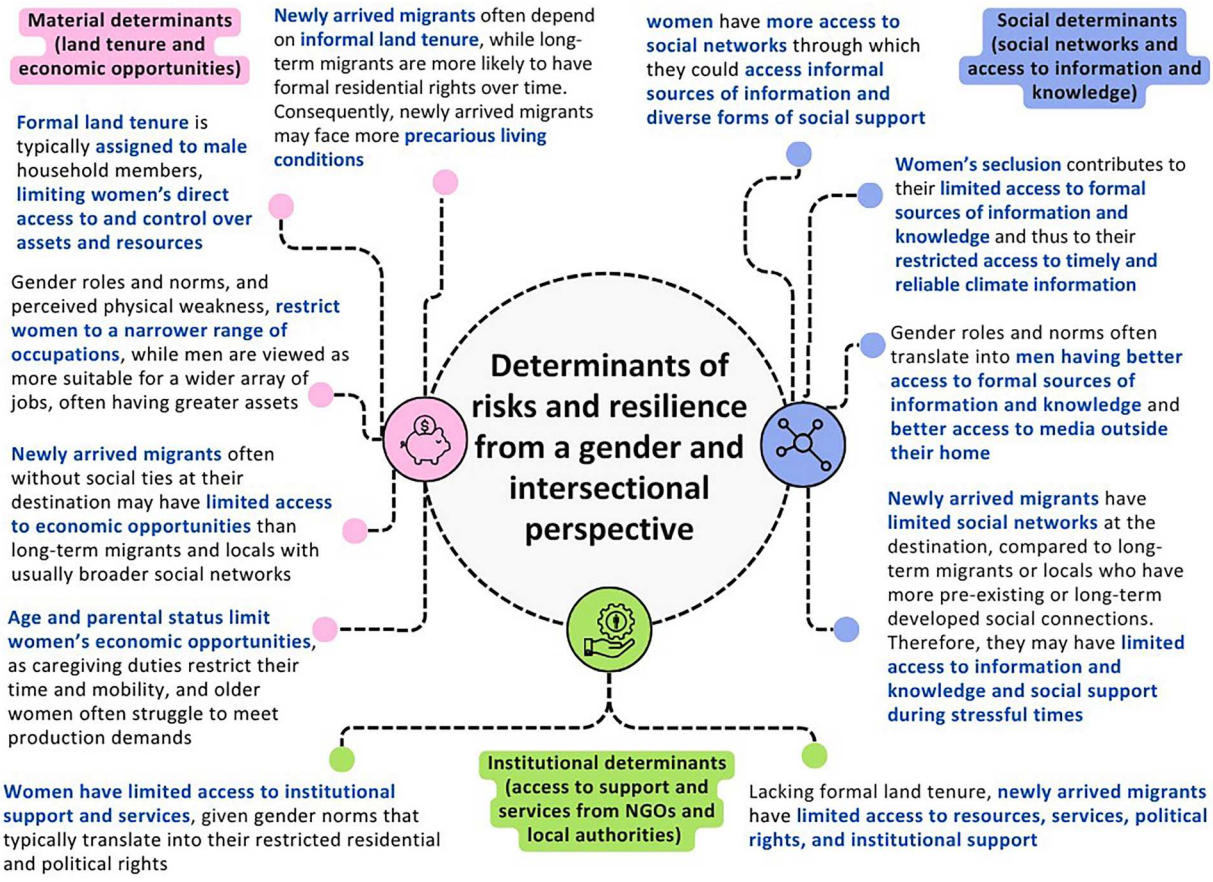

Figure 3. Determinants of risks and resilience from a gender and intersectional perspective.

Conversely, gender roles and norms shape men's climate risks and resilience in distinct ways. Given men's role as breadwinners and the mainly outdoor nature of their livelihoods, they are often more exposed to life-threatening risks, as well as livelihood disruption and unemployment during climate events. Moreover, gender norms tend to perpetuate the image of men as braver and stronger than women. However, such an image can enhance their exposure to hazards. For instance, it can pressure men to remain in hazardous situations to protect their property or livelihoods, even when doing so poses serious risks to their lives.

However, gender roles and norms also enhance men's capacity to respond to climate hazards. Their roles often grant them more mobility as well as authority and decision-making power within the household. This reflects the argument made by Hossain (2023) and Thieme and Siegmann (2010), noting that men's typically larger financial contributions often translate into greater decision-making power at the household level. Consequently, they may have greater resilience during climate events.

Ultimately, it appears that gender shapes not only differentiated vulnerability and exposure but also the kind of responses adopted by women and men. However, the findings show that gender often intersects with migrant status and other factors, such as age, economic conditions, and parental status, to reinforce inequalities and shape differential climate risks and resilience.

6.2. Material and institutional determinants of risks and resilience

People's exposure and vulnerability to hazards, along with their ability to respond, are deeply influenced by differential access to resources and services, notably via land tenure, safe housing, livelihoods and other economic opportunities, which together shape their material realities (Adger et al., 2002). However, such access is uneven, mediated by inequalities.

In Mongla, access to essential infrastructures, including sanitation, electricity, and drinkable water, as well as support from local authorities and NGOs, including disaster relief, is often contingent upon formal land tenure and residential rights. According to two key informants, migrants often lack access to formal land tenure and residential rights. Consequently, they often end up living in overcrowded informal settlements with poor living conditions, unsafe housing, and limited legal protection and access to institutional disaster relief, heightening their vulnerability to climate hazards. This aligns with Cundill et al. (2021), who emphasize that migrants tend to face exclusion from social protection measures, accessibility to public services and basic needs, and political rights at their destinations.

These challenges are particularly pronounced among newly arrived migrants. As shown in the contextual table in Annexe 1, a slightly higher proportion of newly arrived migrants rely on informal land tenure than long-term migrants who were

more likely to have secured formal residential rights over time. Consequently, long-term migrants may experience better material living conditions and institutional support than newly arrived ones. However, even within households that secured formal residential rights over time, gender inequalities persist. In many cases, land tenure and residential rights are assigned to male household members, reflecting Bangladesh's cultural norm of patrilineal inheritance, in which properties and assets are transferred to men across generations. This limits women's direct access to and control over resources and services, but also to political participation, exacerbating their vulnerability to hazards and limiting their resilience. For example, the lack of formal residential rights for women often restricts their access to health services during climate events, as noted by Betancourt and Zickgraf (2024). Consequently, this can exacerbate their vulnerability to health risks.

Additionally, disparities in access to livelihoods and economic opportunities also shape differential material realities, and thus risks and resilience. However, such access is deeply unequal and gendered. In Mongla and Bangladesh more broadly, women also face challenges accessing economic opportunities and livelihoods. Gender roles and norms, and perceptions about their physical weakness as discussed above, restrict women to a narrower range of occupations, mainly indoor, while men are viewed as more suitable for a wider array of jobs, including physically demanding or higher-paid roles, mainly outdoor. These gender inequalities often translate into women having limited control over assets and resources, which may constrain their resilience, notably during times of stress.

However, gender also often intersects with migrant status to reinforce unequal access to livelihoods and economic opportunities, as migrants often experience social discrimination at their destinations (Rezwana, 2021). For instance, securing a livelihood may be more challenging for newly arrived migrants with limited social networks at their destination, whereas long-term migrants and locals may have easier access to economic opportunities, given their usually broader social networks developed over time. This aligns with Brisebois (2024), who found that destination-based social networks can enhance migrant women's livelihood access.

The interplay between gender and migrant status is especially evident in the case of newly arrived migrant women, who face dual barriers: gender-based exclusion from many economic opportunities due to gender roles and norms and limited social connections due to their recent arrival. These overlapping constraints limit their ability to access assets, services and resources, which restrains their resilience.

Additional intersecting factors, such as age and parental status, further restrict migrant women's access to livelihoods and economic opportunities. Women in Mongla and Bangladesh aged 30 and above often face difficulties securing paid work, particularly in the garment industry. As stated by Elson and Pearson (1981), this may be due to the persistent assumption that older women are incapable of meeting high productivity standards. Meanwhile, younger women, often having young children to care for, also encounter obstacles that restrict their mobility and limit their ability to pursue paid employment outside their homes. This may be due to their reproductive and caretaker responsibilities. A newly arrived migrant woman in her 20s, running a small business with her husband, illustrated this tension:

> My children are small. [We] have no one to look after them. One child cannot even walk properly and the other goes to school. […] So how can I leave the children to go to the EPZ? I wanted to go [work] at the EPZ. […]. If I earn, the family would also improve. But it is not possible to go anywhere leaving the children so now I run the shop.

This suggests that age and parental status often intersect with gender and migrant status to further limit economic opportunities for migrant women, particularly those newly arrived. Taken together, the findings suggest that material and institutional determinants of risks and resilience are deeply gendered and unequal. Notably, newly arrived migrant women face intersecting inequalities that restrict their direct access to assets, resources, and services, thereby limiting their economic autonomy. This heightened vulnerability undermines their capacity to respond to climate hazards.

6.3. Social determinants of risks and resilience

Social networks among friends, neighbours, kin, and members in community organizations can provide access to critical information and knowledge as well as resources and services representing key determinants of risks and resilience.

Aside from providing relevant information about local contexts, social networks can significantly contribute to building informal aid systems, which are essential in times of stress (Aldrich & Meyer, 2015). For instance, a migrant housewife, similar to several other women participants, mentioned that her neighbours call her when hazards are approaching so they can seek shelter together. She added that instead of going to the shelter, she would sometimes take refuge at her sister-in-law's more resilient house during hazardous events.

However, these social networks, along with their benefits, are unevenly distributed, often reinforcing pre-existing privilege structures (Portes, 1998). In contexts shaped by gendered and social hierarchies, characteristic of Bangladesh, social networks and access to information and knowledge are not available to everyone: they are influenced by power relations that reinforce inequalities. For instance, although women reported having more access to social networks through which they could access informal sources of information and diverse forms of social support, men often have more access to formal sources of information and knowledge. This may be attributed to gender roles and norms, which lead to women's seclusion and men's greater presence in public spaces. This suggests that gender roles and norms may perpetuate unequal access to information and knowledge. Consequently, this may have negative implications for women's resilience, who often struggle to access timely and reliable climate information.

Gender further intersects with migrant status to exacerbate these inequalities. Newly arrived migrants often lack pre-existing social networks or long-term developed connections on which they may rely during times of stress, as opposed to long-term migrants or locals. This suggests that mobility may disrupt existing social networks for migrants, particularly for women who are more likely to be isolated within their

home. Ryan (2011) similarly argues that mobility can exacerbate the exclusion and marginalization of new migrants, as they often struggle to integrate into local networks due to their lack of or limited pre-existing social networks at their destination, with implications for their risks and resilience.

Taken together, the findings suggest that newly arrived migrant women are particularly vulnerable at their destination: gender roles and norms restrict their access to formal sources of information, while their recent arrival in Mongla limits their social network at their destination, and thus the sources of information they could access and the social support they could rely on during hazardous events. These overlapping constraints limit their well-being but also increase their vulnerability and reduce their capacity to respond.

7. Conclusion

This article analyzed how different material, institutional, and social determinants affect the climate risks and social resilience of internal migrant women and men at their urban destination in Mongla, Bangladesh, using a gender and intersectional lens. Drawing on qualitative fieldwork, we argue that gender not only shapes differential vulnerability and exposure to hazards, but also the responses adopted by migrant women and men during climate events. Crucially, gender often intersects with migrant status and other factors such as age, parental status and economic conditions, in shaping unequal access to material and institutional resources and services, social networks, and information and knowledge channels at the destination.

We show that newly arrived migrant women can be particularly vulnerable to climate hazards and their impacts, as they experience overlapping constraints, such as exclusions from institutional services, land tenure and livelihoods, social networks, and from access to information and knowledge. Together, such exclusions restrict their capacity to respond to climate hazards at their destination.

While this study primarily focused on how gender and migrant status shape climate experiences, other factors, such as job types, level of education, familial circumstances, and household wealth, have not been systematically analysed. These factors are likely to play a significant role in shaping migrants' vulnerabilities and opportunities at their destinations. Future research would therefore benefit from systematically examining how these additional factors intersect with gender and migrant status to build a more comprehensive and nuanced understanding of migrants' distinct climate experiences. Moreover, this study does not comprehensively study how migrants' places of origin shape their distinct risks and resilience at their destination, as we have interviewed them only in the latter context. Future research would therefore benefit from more comparative approaches that include both origin and destination contexts to better capture how differential risks and resilience among internal migrants vary across locations.

While these limitations shape the scope of our analysis, this article nonetheless offers important contributions to the broader climate mobility scholarship. Particularly, it advances a more nuanced and context-specific understanding of climate risks and resilience by offering new insights into gendered and intersectional dimensions of vulnerability, exposure, and responses to climate hazards in internal mobility settings. It also shows how access to, and benefits from, material, institutional, and social resources and services are unequally distributed and shaped by power relations and social differentiation, which are often overlooked.

Finally, this article contributes to policy debates on climate risks and resilience in internal mobility contexts and at destination areas. Our findings highlight the importance of addressing context-specific gender and intersectional inequalities, both within the household and wider society, and how they mediate access to resources and services at destinations. Incorporating these insights when designing policies can contribute to decreasing differential climate risks and support more equitable and effective strategies for building resilience among migrants at their destinations and in the context of climate change.

Note

1. The period of time of time since the participants arrived or returned to Mongla may not accurately represent the reality. This discrepancy arose from the research assistant asking the participants about their time of relocation "here" rather than specifically to Mongla. Consequently, some participants indicated the period since they moved to their current location, potentially spanning a longer timeframe than their actual arrival in Mongla.

Acknowledgements

The research was conducted as part of the first author's appointment as a PhD Candidate at Oslo Metropolitan University, and this article was written as part of the IIASA Young Scientist Summer Program (YSSP). We gratefully acknowledge the contributions of the IIASA Population and Just Societies program in advancing this paper. We also sincerely thank the International Centre for Climate Change and Development (ICCCAD), BRAC, Badabon Sangho, and the research assistants Nipu Islam and Khadiza Tul-Coubra for their support during the field research. Our gratitude extends to academic supervisor Anne Waldrop, the South Asia Symposium, and OsloMet's UMU research group for their insightful comments and suggestions. Finally, we wish to thank the two anonymous reviewers for their thoughtful comments.

In the preparation of this article, the authors used AI language models (ChatGPT version 2 and Sikt KI-Chat) for the revision and improvement of the language of the text for better readability. The authors take full responsibility for the content of the publication.

Author contributions

Anouk Brisebois: Conceptualization; Methodology; Fieldwork & Data collection; Writing – original draft; Writing-review & editing. **Roman Hoffmann:** Conceptualization; Methodology; Writing- review & editing; Supervision.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

R.H. acknowledges funding by the European Union through an ERC grant (2C-RISK, grant number 101162653) and Horizon Europe grant

(SPES, grant number 101094551). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Council Executive Agency. Neither the European Union nor the granting authority can be held responsible for them. Further funding was provided by the Austrian Klima- und Energiefonds as part of the 16th Austrian Climate Research Programme (ACRP), grant number FO999920854.

Ethical approval

The Norwegian National Data Service (NSD) granted ethical clearance for this study, under reference number 160431. Furthermore, the International Centre for Climate Change and Development (ICCCAD) in Bangladesh, which is affiliated with the study, affirmed that the inclusion of human participants in the research conducted in Bangladesh did not necessitate any additional ethical approval.

Notes on contributors

Anouk Brisebois holds a PhD in international studies from OsloMet – Oslo Metropolitan University, Norway. She also holds a master's degree in international studies and a cumulative baccalaureate ès. Sciences from the University of Montreal, Canada. She previously worked at CICERO – Center for International Climate Research and the Norwegian University of Life Science, Norway, and UNESCO, France.

Roman Hoffmann leads the Migration and Sustainable Development (MIG) Research Group in the International Institute for Applied Systems Analysis (IIASA)'s Population and Just Societies (POPJUS) Program. He holds a PhD in economics from the University of Vienna, Austria, and degrees in sociology and economics from the University of Munich, Germany.

ORCID

Anouk Brisebois http://orcid.org/0009-0001-6280-9003
Roman Hoffmann http://orcid.org/0000-0003-3512-1737

References

Adger, W. N. (2006). Resilience, vulnerability, and adaptation: A cross-cutting theme of the International Human Dimensions Programme on Global Environmental Change. *Global Environmental Change*, *16*(3), 237–239. https://doi.org/10.1016/j.gloenvcha.2006.04.003

Adger, W. N., Kelly, P. M., Winkels, A., Huy, L. Q., & Locke, C. (2002). Migration, remittances, livelihood trajectories, and social resilience. *AMBIO: A Journal of the Human Environment*, *31*(4), 358–366. https://doi.org/10.1579/0044-7447-31.4.358

Ahmed, K., & Choat, I. (2022). Port in a storm: The trailblazing town welcoming climate refugees in Bangladesh. *The Guardian*. https://www.theguardian.com/global-development/2022/jan/24/port-in-a-storm-the-trailblazing-town-welcoming-climate-refugees-in-bangladesh

Ahmed, S., & Eklund, E. (2021). Climate change impacts in coastal Bangladesh: Migration, gender and environmental injustice. *Asian Affairs*, *52*(1), 155–174. https://doi.org/10.1080/03068374.2021.1880213

Alam, E., Momtaz, S., Bhuiyan, H., & Baby, S. (2018). Climate change impacts on the coastal zones of Bangladesh: Perspectives on tropical cyclones, sea level rise, and social vulnerability. In M. Islam & A. van Amstel (Eds.), *Bangladesh I: Climate Change Impacts, Mitigation and Adaptation in Developing Countries.* (pp. 145–166). Springer.

Aldrich, D. P., & Meyer, M. A. (2015). Social capital and community resilience. *American Behavioral Scientist*, *59*(2), 254– 269. https://doi.org/10.1177/0002764214550299

Aljazeera. (2022). *Photos: The Bangladesh town offering new life to climate migrants*. https://www.aljazeera.com/gallery/2022/3/30/photos-bangladesh-town-offering-new-life-to-climate-migrants

Ara Parvin, G., & Reazul Ahsan, S. M. (2013). Impacts of climate change on food security of rural poor women in Bangladesh. *Management of Environmental Quality: An International Journal*, *24*(6), 802–814. https://doi.org/10.1108/MEQ-04-2013-0033

Archus, D. (2021, March 8). *Indian Navy ships to visit the Bangladesh's historic Port City of Mongla for the 1st time—Naval Post- Naval News and Information*. https://navalpost.com/indian-navy-ships-to-visit-bangladeshs-historic-port-city-of-mongla-for-the-1st-time/

Asadzadeh, A., Khavarian-Garmsir, A. R., Sharifi, A., Salehi, P., & Kötter, T. (2022). Transformative resilience: An overview of its structure, evolution, and trends. *Sustainability*, *14*(22), 15267. https://doi.org/10.3390/su142215267

Auerbach, C., & Silverstein, L. B. (2003). *Qualitative data: An introduction to coding and analysis*. NYU Press.

Ayeb-Karlsson, S. (2020). When the disaster strikes: Gendered (im)mobility in Bangladesh. *Climate Risk Management*, *29*, 100237. https://doi.org/10.1016/j.crm.2020.100237

Ayeb-Karlsson, S., van der Geest, K., Ahmed, I., Huq, S., & Warner, K. (2016). A people-centred perspective on climate change, environmental stress, and livelihood resilience in Bangladesh. *Sustainability Science*, *11*(4), 679–694. https://doi.org/10.1007/s11625-016-0379-z

Bangladesh Bureau of Statistics. (2023). *Population and housing census 2022*. https://bbs.gov.bd/site/page/47856ad0-7e1c-4aab-bd78-892733bc06eb/Population-and-Housing-Census

Bangladesh Ministry of Environment, Forest and Climate Change. (2022). *National adaptation plan of Bangladesh (2023-2050)*. https://www.undp.org/bangladesh/publications/national-adaptation-plan-bangladesh-2023-2050

Barnett, J., Farbotko, C., Kitara, T., & Aselu, B. (2024). Migration as adaptation? The Falepili Union between Australia and Tuvalu. *WIREs Climate Change*, *16*(1), e924. https://doi.org/10.1002/wcc.924

Bernzen, A., Jenkins, J. C., & Braun, B. (2019). Climate change-induced migration in coastal Bangladesh? A critical assessment of migration drivers in rural households under economic and environmental stress. *Geosciences*, *9*(1), 51. https://doi.org/10.3390/geosciences9010051

Betancourt, T. C., & Zickgraf, C. (2024). It's not just about women: Broadening perspectives in gendered environmental mobilities research. *Climate and Development*, *17*(6), 483–504. https://doi.org/10.1080/17565529.2024.2393305

Boas, I., de Pater, N., & Furlong, B. T. (2022). Moving beyond stereotypes: The role of gender in the environmental change and human mobility nexus. *Climate and Development*, *15*(1), 1–9. https://doi.org/10.1080/17565529.2022.2032565

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2016). (Mis)conceptualising themes, thematic analysis, and other problems with Fugard and Potts' (2015) sample-size tool for thematic analysis. *International Journal of Social Research Methodology*, *19*(6), 739–743. https://doi.org/10.1080/13645579.2016.1195588

Brisebois, A. (2024). Exploring livelihood trajectories: Stories from migrant women in Bangladesh. *Forum for Development Studies*, *51*(3), 463–486. https://doi.org/10.1080/08039410.2024.2374718

Brown, K. (2014). Global environmental change I: A social turn for resilience? *Progress in Human Geography*, *38*(1), 107–117. https://doi.org/10.1177/0309132513498837

Burt, R. S. (2001). Structural holes versus network closure as social capital. In Nan Lin, Karen Cook, & Ronald S. Burt (Eds.), *Social capital - Theory and Research* (pp. 31–56). Routledge.

Buthe, T., Jacobs, A. M., Bleich, E., Pekkanen, R., Trachtenberg, M., Cramer, K., Shih, V., Parkinson, S., Wood, E. J., Pachirat, T., Romney, D., Stewart, B. M., Tingley, D. H., Davison, A., Schneider, C., Wagemann, C., & Fairfield, T. (2015). Transparency in qualitative and multi-method research: A symposium (SSRN Scholarly Paper No. 2652097).

Cannon, T. (2002). Gender and climate hazards in Bangladesh. *Gender & Development*, *10*(2), 45–50. https://doi.org/10.1080/13552070215906

Carling, J., Erdal, M. B., & Ezzati, R. (2014). Beyond the insider–outsider divide in migration research. *Migration Studies*, *2*(1), 36–54. https://doi.org/10.1093/migration/mnt022

Carmen, E., Fazey, I., Ross, H., Bedinger, M., Smith, F. M., Prager, K., McClymont, K., & Morrison, D. (2022). Building community resilience in a context of climate change: The role of social capital. *Ambio*, *51*(6), 1371–1387. https://doi.org/10.1007/s13280-021-01678-9

Chindarkar, N. (2012). Gender and climate change-induced migration: Proposing a framework for analysis. *Environmental Research Letters*, *7*(2), 025601. https://doi.org/10.1088/1748-9326/7/2/025601

Chowdhury, S. (2019). Study of deprivation on female garments workers in Bangladesh: A case study of Chittagong city corporation. *Social Change*, *9*(15), 14–28.

Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, *43*(6), 93–118. https://doi.org/10.2307/1229039

Cundill, G., Singh, C., Adger, W. N., Safra de Campos, R., Vincent, K., Tebboth, M., & Maharjan, A. (2021). Toward a climate mobilities research agenda: Intersectionality, immobility, and policy responses. *Global Environmental Change*, *69*, 102315. https://doi.org/10.1016/j.gloenvcha.2021.102315

Davison, C. (2022). *'Migrant-friendly' cities offer hope for climate refugees*. Dw.Com. https://www.dw.com/en/bangladesh-migrant-friendly-cities-offer-hope-for-climate-refugees/a-62781441

De Haan, L., & Zoomers, A. (2005). Exploring the frontier of livelihoods research. *Development and Change*, *36*(1), 27–47. https://doi.org/10.1111/j.0012-155X.2005.00401.x

Denton, F. (2002). Climate change vulnerability, impacts, and adaptation: Why does gender matter? *Gender & Development*, *10*(2), 10–20. https://doi.org/10.1080/13552070215903

Deshingkar, P. (2012). Environmental risk, resilience and migration: Implications for natural resource management and agriculture. *Environmental Research Letters*, *7*(1), 015603. https://doi.org/10.1088/1748-9326/7/1/015603

Dewan, C (2023). Climate refugees or labour migrants? Climate reductive translations of women's migration from coastal Bangladesh. *The Journal of Peasant Studies*, *50*(6), 2339–2360. https://doi.org/10.1080/03066150.2023.2195555

Duque, M. C. (2024, September 3). *Climate Change in Bangladesh Shapes Internal Migration and Movement to India*. Migrationpolicy.Org. https://www.migrationpolicy.org/article/bangladesh-india-climate-migration

Elson, D., & Pearson, R. (1981). 'Nimble fingers make cheap workers': An analysis of women's employment in third world export manufacturing. *Feminist Review*, *7*(1), 87–107. https://doi.org/10.1057/fr.1981.6

Etzold, B., & Mallick, B. (2016). Moving beyond the focus on environmental migration towards recognizing the normality of translocal lives: Insights from Bangladesh. In A. Milan, B. Schraven, K. Warner, & N. Cascone (Eds.), *Migration, risk management and climate change: Evidence and policy responses* (pp. 105–128). Springer International Publishing.

Evertsen, K. F. (2021). Looking for women in the field: Epistemic ignorance and the process of othering. *Forum for Development Studies*, *48*(3), 387–407. https://doi.org/10.1080/08039410.2021.1947365

Evertsen, K. F., & van der Geest, K. (2020). Gender, environment and migration in Bangladesh. *Climate and Development*, *12*(1), 12–22. https://doi.org/10.1080/17565529.2019.1596059

Feldman, S. (2001). Exploring theories of patriarchy: A perspective from contemporary Bangladesh. *Signs*, *26*(4), 1097–1127. https://doi.org/10.1086/495649

Ferdous, J., & Mallick, D. (2019). Norms, practices, and gendered vulnerabilities in the lower Teesta basin, Bangladesh. *Environmental Development*, *31*, 88–96. https://doi.org/10.1016/j.envdev.2018.10.003

Fordham, M. (2008). *The intersection of gender and social class in disaster: Balancing resilience and vulnerability* (B. Phillips & B. Hearn Morrow, Eds.). Xlibris Corporation. https://nrl.northumbria.ac.uk/id/eprint/2855/

Forsyth, T. (2018). Is resilience to climate change socially inclusive? Investigating theories of change processes in Myanmar. *World Development*, *111*, 13–26. https://doi.org/10.1016/j.worlddev.2018.06.023

Fünfgeld, H. (2010). Institutional challenges to climate risk management in cities. *Current Opinion in Environmental Sustainability*, *2*(3), 156–160. https://doi.org/10.1016/j.cosust.2010.07.001

Geertz, C. (1974). 'From the native's point of view': On the nature of anthropological understanding. *Bulletin of the American Academy of Arts and Sciences*, *28*(1), 26–45. https://doi.org/10.2307/3822971

Gioli, G., & Milan, A. (2018). Gender, migration and (global) environmental change. In Robert McLeman & François Gemenne (Eds.), *Routledge handbook of environmental displacement and migration* (pp. 135–150). Routledge.

Ha-Mim, N. M., Hossain, M. Z., Rahaman, K. R., & Mallick, B. (2020). Exploring vulnerability–resilience–livelihood nexus in the face of climate change: A multi-criteria analysis for Mongla, Bangladesh. *Sustainability*, *12*(17), 7054. https://doi.org/10.3390/su12177054

Helle-Valle, J., & Borchgrevink, A. (2018). Household histories and methodological triangulation. *Forum for Development Studies*, *45*(2), 191–215. https://doi.org/10.1080/08039410.2016.1260049

Hoffmann, R., & Muttarak, R. (2021, September). *Environment, migration and urbanisation: Challenges and solutions for low-and middle-income countries*. Think20 (T20). https://www.t20italy.org/2021/09/22/environment-migration-and-urbanisation-challenges-and-solutions-for-low-and-middle-income-countries/

Hossain, H. (2023). *Claiming our rights feminist discourses in Bangladesh and South Asia*. University Press Limited. https://uplbooks.com/shop/9789845064019-claiming-our-rights-11923

Hossain, N. (2017). The breaking of the patriarchal bargain and the emergence of the 'Woman issue'. In N. Hossain (Ed.), *The aid lab: Understanding Bangladesh's unexpected success* (pp. 75–90). Oxford University Press.

Huang, J. Q. (2020). WOMEN's WORK: The arena of disruption. In Julia Q. Huang (Ed.), *To be an entrepreneur: Social Enterprise and Disruptive Development in Bangladesh* (pp. 57–92). Cornell University Press.

ICCCAD. (2019). Climate Induced Migration (CIM)-IBP PROKAS. Final Report.

IPCC. (2014). AR5 synthesis report: Climate change. https://www.ipcc.ch/report/ar5/syr/

IPCC. (2019). Special report on the ocean and cryosphere in a changing climate. https://www.ipcc.ch/srocc/download/

Jabeen, H. (2014). Adapting the built environment: The role of gender in shaping vulnerability and resilience to climate extremes in Dhaka. *Environment and Urbanization*, *26*(1), 147–165. https://doi.org/10.1177/0956247813517851

Jordan, J. C. (2019). Deconstructing resilience: Why gender and power matter in responding to climate stress in Bangladesh. *Climate and Development*, *11*(2), 167–179. https://doi.org/10.1080/17565529.2018.1442790

Kabeer, N. (1988). Subordination and struggle: Women in Bangladesh. *New Left Review*, *168*(1), 95–121. https://doi.org/10.64590/4d0

Kabeer, N., Mahmud, S., & Tasneem, S. (2011). Does paid work provide a pathway to women's empowerment? Empirical findings from Bangladesh. https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/4223

Kapiszewski, D., MacLean, L. M., & Read, B. L. (2015). *Field research in political science: Practices and principles*. Cambridge University Press.

Keck, M., & Sakdapolrak, P. (2013). What is social resilience? Lessons learned and ways forward. *Erdkunde*, *67*(1), 5–19. https://doi.org/10.3112/erdkunde.2013.01.02

Khan, M. R., Huq, S., Risha, A. N., & Alam, S. S. (2021). High-density population and displacement in Bangladesh. *Science*, *372*(6548), 1290–1293. https://doi.org/10.1126/science.abi6364

Kumar, K. (1989). *Conducting key informant interviews in developing countries*. Agency for International Development.

Lede, E., Townsend, T., Nguyen, Q. A., & Lede, E. (2024). Mitigating climate risk in the Mekong Delta: Insights from a large-scale

communication field study in Vietnam. *Climate and Development*, *17*(4), 315–324. https://doi.org/10.1080/17565529.2024.2365287

McLeman, R., & Smit, B. (2006). Migration as an adaptation to climate change. *Climatic Change*, *76*(1), 31–53. https://doi.org/10.1007/s10584-005-9000-7.

Momtaz, S., Asaduzzaman, M., & Kabir, Z. (2021). A gendered approach to understanding climate change impacts: Lessons from a coastal region of Bangladesh. In J. Eastin, & K. Dupuy (Eds.), *Gender, climate change and livelihoods: Vulnerabilities and adaptations* (1st ed., pp. 11–25). CABI.

Mostofa, A. (2024, October 22). Can Dhaka cope with the climate migration wave? *Dhaka Tribune*. https://www.dhakatribune.com/opinion/op-ed/362714/can-dhaka-cope-with-the-climate-migration-wave

Pelling, M. (2010). *Adaptation to climate change: From resilience to transformation*. Routledge.

Pettersen, T. (2011). The ethics of care: Normative structures and empirical implications. *Health Care Analysis*, *19*(1), 51–64. https://doi.org/10.1007/s10728-010-0163-7

Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, *24*(1), 1–24. https://doi.org/10.1146/annurev.soc.24.1.1

Rahman, F., & Kuhl, L. (2021, April 22). *Putting Mongla on the map: The curious case of a coastal secondary city's transformation*. UNRISD. https://www.unrisd.org

Rahman, F., Lewis, D., Kuhl, L., Baldwin, A., Ruszczyk, H., Nadiruzzaman, M., & Mahid, Y. (2023). Managed urban retreat: The trouble with crisis narratives. *Urban Geography*, *45*(1), 23–32. https://doi.org/10.1080/02723638.2023.2228094

Rezwana, N. (2021). Understanding the gendered impact of disasters on women, household dynamics and coping strategies: A case study of Bangladesh. In J. Eastin, & K. Dupuy (Eds.), *Gender, climate change and livelihoods: Vulnerabilities and adaptations* (1st ed., pp. 26–37). CABI.

Ryan, L. (2011). Migrants' social networks and weak ties: Accessing resources and constructing relationships post-migration. *The Sociological Review*, *59*(4), 707–724. https://doi.org/10.1111/j.1467-954X.2011.02030.x

Sakdapolrak, P., Naruchaikusol, S., Ober, K., Peth, S., Porst, L., Rockenbauch, T., & Tolo, V. (2016). Migration in a changing climate. Towards a translocal social resilience approach. *DIE ERDE – Journal of the Geographical Society of Berlin*, *147*(2), 81–94. https://doi.org/10.12854/erde-147-6

Sakdapolrak, P., Sterly, H., Borderon, M., Bunchuay-Peth, S., Naruchaikusol, S., Ober, K., Porst, L., & Rockenbauch, T. (2024). Translocal social resilience dimensions of migration as adaptation to environmental change. *Proceedings of the National Academy of Sciences*, *121*(3), e2206185120. https://doi.org/10.1073/pnas.2206185120

Sánchez-Ayala, L. (2012). Interviewing techniques for migrant minority groups. In C. Vargas-Silva (Ed.), *Handbook of research methods in migration* (pp. 117–136). Edward Elgar Publishing.

Siddiqui, T., Sikder, M. J. U., & Bhuiyan, M. R. A. (2022). Climate change and mitigation in Bangladesh: Vulnerability in urban locations. In S. M. Hoffman, T. H. Eriksen, & P. Mendes (Eds.), *Cooling down* (pp. 113–130). Berghahn Books.

Singh, C., & Basu, R. (2020). Moving in and out of vulnerability: Interrogating migration as an adaptation strategy along a rural–urban continuum in India. *The Geographical Journal*, *186*(1), 87–102. https://doi.org/10.1111/geoj.12328

Sultana, F. (2014). Gendering climate change: Geographical insights. *The Professional Geographer*, *66*(3), 372–381. https://doi.org/10.1080/00330124.2013.821730

Szaboova, L., Adger, W. N., de Campos, R. S., Maharjan, A., Sakdapolrak, P., Sterly, H., Conway, D., Codjoe, S. N. A., & Abu, M. (2023). Evaluating migration as successful adaptation to climate change: Trade-offs in well-being, equity, and sustainability. *One Earth*, *6*(6), 620–631. https://doi.org/10.1016/j.oneear.2023.05.009

Thieme, S., & Siegmann, K. A. (2010). Coping on women's backs: Social capital-vulnerability links through a gender lens. *Current Sociology*, *58*(5), 715–737. https://doi.org/10.1177/0011392110372732

van der Geest, K. (2004). *'We're managing!': Climate change and livelihood vulnerability in Northwest Ghana*. African Studies Centre. https://hdl.handle.net/1887/17898

Vigil, S. (2024). Towards a feminist political ecology of migration in a changing climate. *Geoforum*, *155*, 104076. https://doi.org/10.1016/j.geoforum.2024.104076

Vinke, K., Bergmann, J., Blocher, J., Upadhyay, H., & Hoffmann, R. (2020). Migration as adaptation? *Migration Studies*, *8*(4), 626–634. https://doi.org/10.1093/migration/mnaa029