

Research Title:

Climate-Induced Migration and its Gendered Impacts: A Study of Women with Disabilities Experiences in Displacement in Bangladesh

Submitted By

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Abstract

Climate-induced migration presents significant challenges for marginalized populations, particularly in Bangladesh, one of the world's most climate-vulnerable countries. This study explores the gendered impacts of displacement on women with disabilities in Cox's Bazar, where climate variability, extreme weather events, and socio-economic pressures have led to mass migration. The research investigates the compounded vulnerabilities arising from the intersection of gender, disability, and climate change, shedding light on systemic exclusions and resilience strategies among affected women.

The study adopts a mixed-methods approach, combining in-depth interviews, focus group discussions, and survey data to capture the lived experiences of women with disabilities during pre- and post-migration phases. Key findings reveal multidimensional challenges, including physical barriers (35% reported inaccessible shelters and healthcare), economic precarity (40% faced livelihood loss), emotional trauma (25% reported anxiety and isolation), and social exclusion (30% experienced stigma and neglect). Despite these challenges, respondents demonstrated resilience through family and community support, informal coping mechanisms, and self-reliance, although institutional support remained insufficient.

The study concludes that existing disaster preparedness policies and climate adaptation strategies in Bangladesh lack a gender-disability lens, further marginalizing women with disabilities. Policy recommendations include implementing inclusive disaster response frameworks, accessible infrastructure, targeted livelihood programs, and community-based support systems. Practical steps such as awareness campaigns, assistive technologies, and vocational training are essential to foster resilience and empower marginalized women.

This research highlights the urgent need for intersectional, rights-based approaches to address climate displacement, ensuring the voices and needs of women with disabilities are prioritized in disaster management and climate adaptation efforts. Future research should expand to other regions and explore long-term recovery strategies to build inclusive and sustainable responses to climate migration.

1. Introduction and Background

Bangladesh, as one of the most climate-vulnerable countries globally, faces unparalleled challenges from the adverse impacts of climate change. Its low-lying topography, coupled with socio-economic vulnerability, has exacerbated the frequency and intensity of extreme weather events such as cyclones, floods, and rising sea levels (IPCC, 2021; Hossain et al., 2020). Consequently, climate-induced displacement has emerged as an alarming consequence, with millions forced to migrate from disaster-prone areas to safer regions (Ahmed et al., 2021). However, these migratory processes do not affect populations uniformly; gender and disability act as intersecting vulnerabilities, amplifying the hardships of marginalized groups, particularly women with disabilities (Grech, 2016; Mallick & Vogt, 2014).

Women, especially those in poverty, face unique challenges during displacement. They are disproportionately burdened by societal expectations, caregiving roles, and limited access to

resources, often leaving them more susceptible to economic and social insecurities following migration (Islam et al., 2021). Similarly, persons with disabilities experience systemic exclusion and structural inequities in climate-induced displacement contexts, including inaccessible infrastructure, discrimination, and inadequate disaster response mechanisms (UNESCAP, 2018; Banks, Kuper, & Polack, 2017). The intersectionality of gender and disability, therefore, creates a compounded form of vulnerability for women with disabilities, positioning them at the margins of relief efforts, policy interventions, and recovery strategies (Kett et al., 2019).

Cox's Bazar, located in southeastern Bangladesh, is emblematic of the climate crisis and its human impacts. It is one of the most disaster-prone regions in the country, vulnerable to cyclones, storm surges, saltwater intrusion, and flooding exacerbated by climate variability and sea-level rise (Ahmed & Eklund, 2021). In addition to its ecological fragility, Cox's Bazar has socio-political complexities as it hosts a large population of internally displaced Bangladeshis and Rohingya refugees, adding pressure on already strained resources and infrastructure (Haque et al., 2022).

In this challenging environment, women with disabilities endure a compounded burden of physical, economic, and psychological challenges during displacement. Inadequate shelters, inaccessible facilities, and exclusion from decision-making further isolate these women, leaving their voices unheard (UNFPA, 2022). This research, therefore, situates Cox's Bazar as a critical case study, offering insights into the nuanced interplay of climate change, gender, and disability within a region that mirrors broader global trends of marginalization and displacement.

2. Problem Statement

The rising frequency of climate-induced migration in Bangladesh has drawn significant academic and policy attention; however, research often fails to adequately address the experiences of marginalized populations, particularly women with disabilities. Women with disabilities represent a subgroup that experiences unique and compounded vulnerabilities during displacement processes, yet their lived realities remain critically underexplored (Kett et al., 2019; Grech, 2016). This oversight reflects a major knowledge gap, as mainstream climate and migration studies continue to adopt generalized frameworks that do not account for the intersectionality of gender, disability, and poverty.

Existing studies highlight that climate-induced migration exacerbates gender disparities and places women at increased risks of violence, economic deprivation, and exclusion from decision-making processes (Neumayer & Plumper, 2007; Mallick & Vogt, 2014). Women with disabilities, however, face even greater systemic barriers, including inaccessible infrastructure, discriminatory social norms, and inadequate policy frameworks that do not address their unique needs (Banks et al., 2017; UNESCAP, 2018). This research is important as it directly addresses this gap by exploring the specific challenges, coping mechanisms, and resilience strategies of women with disabilities in Cox's Bazar—one of the most climate-affected and resource-constrained regions in Bangladesh.

Furthermore, despite Bangladesh's progressive legal frameworks, such as the *Persons with Disabilities Rights and Protection Act* (2013) and international commitments to the Sendai

Framework and SDG 13 on climate action, implementation remains insufficient. Existing policies lack a gender-disability lens, leaving women with disabilities largely invisible in climate adaptation and disaster management strategies (Islam et al., 2021; Ahmed & Eklund, 2021). By investigating the extent to which policies and support systems are inclusive, this study will contribute actionable insights for policymakers, NGOs, and practitioners working to improve climate resilience through an inclusive and rights-based approach.

This research is timely and significant, as it addresses:

1. **Critical knowledge gap** by amplifying the voices of women with disabilities in climate-induced migration contexts.
2. **Highlight systemic failures** in disaster preparedness and migration policies that exclude marginalized groups.
3. **Contribute to policy development** by providing evidence-based recommendations for gender-sensitive and disability-inclusive frameworks.

Addressing these issues is not only a matter of academic inquiry but a moral and policy imperative, ensuring no one is left behind in the face of the climate crisis (UNDRR, 2015; UNFPA, 2022).

3. Research Objectives:

The study was conducted with a clear and targeted set of objectives to address a critical gap in understanding the intersectionality of climate change, gender, and disability. Grounded in a human rights-based and intersectional approach, the research pursued the following key objectives:

3.1 Explored the Challenges Encountered by Women with Disabilities During Climate-Induced Migration

The first objective aimed to investigate and document the unique challenges faced by women with disabilities during climate-induced displacement. This exploration delved into multiple dimensions of vulnerability—physical, social, economic, and emotional—that women experience while navigating displacement processes. By examining pre-migration, migration, and post-migration stages, the study unveiled the systemic barriers these women confront. These include issues such as lack of accessible evacuation plans, exclusion from decision-making processes, discrimination within temporary shelters, and restricted access to basic services like healthcare, education, and livelihood opportunities.

Furthermore, this objective highlighted the disproportionate burden carried by women with disabilities due to societal stigmas and pre-existing inequalities, exacerbating their vulnerability amidst climate shocks. The research also sought to understand the compounded impacts of gender and disability in the context of Bangladesh's socio-cultural fabric, where marginalization often remains invisible in broader climate adaptation discourse.

3.2 Analyzed Coping Mechanisms and Resilience Strategies Employed by Women with Disabilities

This objective aimed to identify and critically analyze the coping mechanisms and resilience strategies adopted by women with disabilities in response to climate-induced displacement. The study recognized that despite significant challenges, women with disabilities demonstrate remarkable resourcefulness and adaptive capacity. Through individual and collective efforts, they navigate adversity using diverse strategies such as relying on family support, informal community networks, and leveraging their limited access to government or NGO aid.

By engaging participants in focus group discussions and in-depth interviews, the research illuminated how women exercise agency in the face of displacement. For instance, women with disabilities often adapt by utilizing their skills in micro-entrepreneurship or advocating for their inclusion in community-based support systems. This analysis underscored the resilience embedded within marginalized groups and emphasized that their experiences are not merely passive accounts of suffering but also narratives of strength, resistance, and creativity.

3.3 Evaluated the Effectiveness of Existing Policies and Support Systems

The third objective sought to evaluate the inclusivity and efficacy of existing policies, programs, and institutional frameworks designed to address climate-induced migration and displacement in Bangladesh. The study specifically focused on whether national policies and disaster response mechanisms adequately account for the unique needs of women with disabilities. It assessed gaps in implementation and explored the extent to which gender and disability perspectives have been mainstreamed into Bangladesh's climate adaptation strategies, disaster preparedness plans, and migration management policies.

Findings revealed that while Bangladesh has made commendable strides in climate adaptation planning, women with disabilities remain largely excluded from policy considerations and practical interventions. Limited accessibility to emergency services, lack of representation in local governance, and the absence of tailored support during displacement were identified as critical shortfalls. This evaluation provided a basis for understanding where policy frameworks falter and what actionable measures are necessary to address these shortcomings.

3.4 Provided Actionable Recommendations for Policymakers, NGOs, and Community Stakeholders

The final objective of the research was to generate evidence-based, actionable recommendations aimed at improving the resilience and inclusion of women with disabilities in the face of climate-induced migration. These recommendations were framed to guide policymakers, development practitioners, and community leaders in creating inclusive, gender-sensitive, and disability-responsive interventions.

The study proposed multi-tiered strategies, including:

- Strengthening disability-inclusive disaster preparedness through accessible evacuation plans, infrastructure, and information systems.
- Enhancing community-based support mechanisms to ensure women with disabilities actively participate in local decision-making processes.
- Integrating gender and disability frameworks into national climate adaptation and disaster risk reduction policies.
- Allocating targeted financial and technical resources to support women with disabilities during pre- and post-migration phases.

By advocating for a holistic approach that prioritizes empowerment, participation, and accessibility, the research provided a robust framework for fostering resilience among women with disabilities while challenging entrenched inequities within climate adaptation efforts.

These objectives collectively underscore the urgency of addressing the interconnected challenges posed by climate-induced migration, gender disparities, and disability exclusion. By exploring the lived realities of women with disabilities, analyzing their coping mechanisms, evaluating policy responses, and offering targeted recommendations, this research contributes to building a more inclusive and equitable response to climate displacement in Bangladesh. The findings not only amplify the voices of marginalized women but also serve as a roadmap for ensuring that no one is left behind in the era of escalating climate crises.

4. Literature Review

4.1 Climate-Induced Migration: General Overview and Global Perspectives

Climate-induced migration is a critical issue that has emerged as one of the most significant consequences of global climate change. The Intergovernmental Panel on Climate Change (IPCC, 2021) highlights that climate variability and extreme weather events—such as rising sea levels, floods, droughts, and hurricanes—are forcing millions to migrate globally. According to the *World Bank* (2021), without urgent action, up to 216 million people could become internally displaced due to climate change by 2050, with South Asia being one of the most severely affected regions.

While migration can be seen as a survival strategy, it also imposes severe challenges for vulnerable populations, particularly in low-income countries where socio-economic infrastructure is limited (IOM, 2020). Regions such as Sub-Saharan Africa, South Asia, and Southeast Asia are identified as climate migration hotspots, where displacement disproportionately impacts marginalized groups (Rigaud et al., 2018). For example, in the Pacific islands, entire communities have been displaced due to rising sea levels, reflecting how climate risks exacerbate social inequalities (Campbell & Warrick, 2014).

Bangladesh, recognized as one of the most climate-vulnerable nations, epitomizes this crisis. Rising sea levels, frequent cyclones, and floods have displaced millions of people, with projections suggesting that one in every seven Bangladeshis will face forced displacement by 2050 (Huq et al., 2015; Islam et al., 2021). The rural poor, reliant on agriculture and fisheries, are particularly susceptible, as environmental degradation threatens their livelihoods (Dasgupta et al., 2018). Migration, while essential, often creates additional challenges in urban centers where

infrastructure is inadequate to support incoming populations (McNamara et al., 2018). This reality sets the stage for understanding how climate-induced migration affects marginalized subgroups, such as women with disabilities.

4.2 Gendered Impacts of Climate Change: How Women Experience Displacement

Climate change exacerbates existing gender inequalities, leaving women disproportionately vulnerable during climate-induced displacement. Women are often more reliant on natural resources for their livelihoods and face systemic barriers to economic and social empowerment, which heightens their risks during environmental crises (Alston, 2015; Neumayer & Plümper, 2007). Studies show that women are 14 times more likely than men to die in natural disasters due to cultural and social constraints that limit their mobility, access to information, and participation in disaster preparedness (Ariyabandu, 2009).

In Bangladesh, gendered impacts of climate change are deeply entrenched in societal norms. For instance, women are often responsible for water and fuel collection, tasks that become more arduous with environmental degradation (Rahman, 2013). During displacement, women face heightened risks of gender-based violence, loss of livelihood, and limited access to healthcare and education (Ahmed & Eklund, 2021). A study by Mallick and Vogt (2014) in cyclone-affected areas of Bangladesh revealed that women face not only physical but also emotional and social challenges in displacement camps, where facilities are often unsafe or inadequate.

Furthermore, women's caregiving roles intensify during climate crises, particularly in displacement scenarios where resources are scarce. Their vulnerability is compounded when they belong to marginalized subgroups, such as women with disabilities, who often experience compounded exclusion and neglect in humanitarian response efforts (Chowdhury et al., 2017). Such findings highlight the need for an intersectional analysis to understand the gendered dimensions of displacement more fully.

4.3 Disability Inclusion and Migration: Intersectionality of Gender, Disability, and Climate

The intersection of gender, disability, and climate change creates unique vulnerabilities that are often overlooked in climate migration discourse. Persons with disabilities represent one of the most marginalized groups globally, experiencing systemic barriers to inclusion in all stages of disaster risk management and displacement processes (UNESCAP, 2018). Studies estimate that 15% of the global population lives with some form of disability, with 80% residing in low- and middle-income countries (WHO, 2011). In disaster contexts, individuals with disabilities are twice as likely to experience injury or death due to inaccessible warning systems, evacuation plans, and shelters (Kett et al., 2019; Priestley & Hemingway, 2007).

Women with disabilities face a compounded form of exclusion, as their gender and disability intersect to limit their access to resources, mobility, and voice in decision-making processes (Grech, 2016). In Bangladesh, structural inequalities and social stigmas further marginalize women with disabilities, particularly during displacement caused by climate disasters. A study by Banks et al. (2017) found that women with disabilities face multiple forms of discrimination,

including denial of healthcare, livelihood opportunities, and participation in community recovery processes.

Despite international frameworks like the *Sendai Framework for Disaster Risk Reduction* and the *UN Convention on the Rights of Persons with Disabilities* (UNCRPD), implementation remains weak, particularly in countries like Bangladesh. Policies and humanitarian efforts often adopt a generalized approach to disaster response, failing to account for the specific needs of women with disabilities (Islam et al., 2021). The lack of inclusive infrastructure and accessible communication further exacerbates their vulnerabilities during climate-induced migration (Kett & Twigg, 2007).

4.4 Gaps in Existing Research: Where This Study Contributes New Insights

While significant progress has been made in understanding climate-induced migration and gendered impacts, the experiences of women with disabilities remain critically underexamined. Existing research has largely focused on either gendered vulnerabilities (Neumayer & Plümper, 2007; Alston, 2015) or disability inclusion in climate contexts (Banks et al., 2017; UNESCAP, 2018), but very few studies explore their intersectionality. This research addresses this critical gap by focusing specifically on the experiences of women with disabilities during climate-induced migration in Bangladesh.

Furthermore, current studies on climate displacement in Bangladesh tend to adopt macro-level approaches, often overlooking the lived experiences of marginalized subgroups (Ahmed & Eklund, 2021; Hossain et al., 2021). There is a clear need for empirical research that amplifies the voices of women with disabilities, exploring their unique challenges, coping mechanisms, and interactions with policy frameworks.

This study contributes new insights by:

1. Focusing on intersectionality to understand the compounded vulnerabilities of women with disabilities.
2. Exploring the effectiveness of existing policies and humanitarian responses in addressing the needs of women with disabilities during displacement.
3. Providing policy-relevant recommendations for inclusive and gender-sensitive climate adaptation strategies.

By bridging this gap, this research seeks to inform both academic knowledge and practical policymaking, ensuring that the voices of the most marginalized are recognized in climate adaptation and disaster management efforts.

5. Methodology

This study employed a mixed-methods approach, integrating both qualitative and quantitative research methodologies to provide a comprehensive understanding of the challenges and experiences of women with disabilities during climate-induced migration in Bangladesh, with a specific focus on Cox's Bazar. The mixed-methods design allowed for the triangulation of data,

ensuring a robust and well-rounded analysis of the research problem. The qualitative data explored the lived experiences and perceptions of women with disabilities, while the quantitative data provided measurable insights into patterns and trends related to their displacement and coping mechanisms.

5.1 Study Area

The research was conducted in Cox's Bazar, a southeastern district in Bangladesh that is highly prone to climate-related disasters, such as cyclones, floods, and sea-level rise. The area comprises both urban and rural settings, which enabled the study to capture diverse experiences of climate-induced migration among women with disabilities.

- **Rural areas:** The study included villages severely impacted by extreme weather events, where agricultural livelihoods have been disrupted. These areas provided insights into rural vulnerabilities and migration triggers.
- **Urban areas:** Cox's Bazar town and peri-urban settlements were also studied, particularly informal displacement camps and low-income neighborhoods, where displaced populations often relocate.

The selection of Cox's Bazar as the study area was strategic, given its high disaster vulnerability, socio-economic fragility, and ongoing displacement issues, compounded by its role as host to displaced Rohingya populations.

5.2 Data Collection Methods

5.2.1 Qualitative Methods

The qualitative component focused on exploring the lived experiences of women with disabilities during climate-induced migration.

1. In-Depth Interviews

- A total of 20 in-depth interviews were conducted with women with disabilities who had experienced displacement.
- Participants were purposively selected to ensure diversity in age, types of disabilities, socio-economic background, and location (urban and rural).
- An interview guide was developed to address key areas, including pre-migration challenges, displacement experiences, coping mechanisms, and access to support systems.
- The interviews were conducted face-to-face in accessible locations or via phone where in-person interaction was not feasible.

2. Focus Group Discussions (FGDs)

- Three focus group discussions were conducted with 6–8 participants in each group, facilitating collective reflections and the exchange of shared experiences.
- Separate FGDs were organized for rural and urban participants to capture contextual differences.

- A semi-structured discussion guide was used, focusing on topics such as community support, policy gaps, and resilience strategies.

3. Sampling Strategy

- Purposive sampling was employed to ensure the inclusion of women with various forms of disabilities (physical, sensory, and intellectual) and from different geographic and socio-economic contexts.
- Community organizations and disability advocacy groups assisted in identifying and recruiting participants.

5.2.2 Quantitative Methods

The quantitative component involved the collection of survey data to identify patterns and trends in the challenges faced by women with disabilities during displacement.

1. Surveys

- A structured questionnaire was designed, containing closed-ended questions focused on:
 - Demographic information (age, type of disability, education, and income levels)
 - Pre- and post-migration challenges (housing, health, livelihood, and safety)
 - Accessibility to support systems (government programs, NGOs, and community services)
- A total of 20 surveys were administered, with an equal representation of participants from urban and rural areas.

2. Design of Questionnaires and Key Variables

- The questionnaire was pilot-tested to ensure clarity, reliability, and cultural appropriateness.
- Key variables included disability type, access to services, livelihood loss, mobility constraints, and coping mechanisms.

5.3 Ethical Considerations

All research activities were conducted with strict adherence to ethical principles, ensuring the protection of participants' rights and well-being.

1. Informed Consent

- Written or verbal informed consent was obtained from all participants prior to their involvement. Consent forms were prepared in Bangla and explained in accessible formats for participants with disabilities.

2. Confidentiality

- Participants' identities were anonymized through the use of unique codes, and data was securely stored to prevent unauthorized access.

3. Inclusivity

- Efforts were made to ensure inclusivity, including accessible interview locations, provision of interpreters for participants with sensory disabilities, and flexibility in data collection methods.

Ethical approval was secured from relevant institutional review boards, and all research activities complied with the principles of the Declaration of Helsinki.

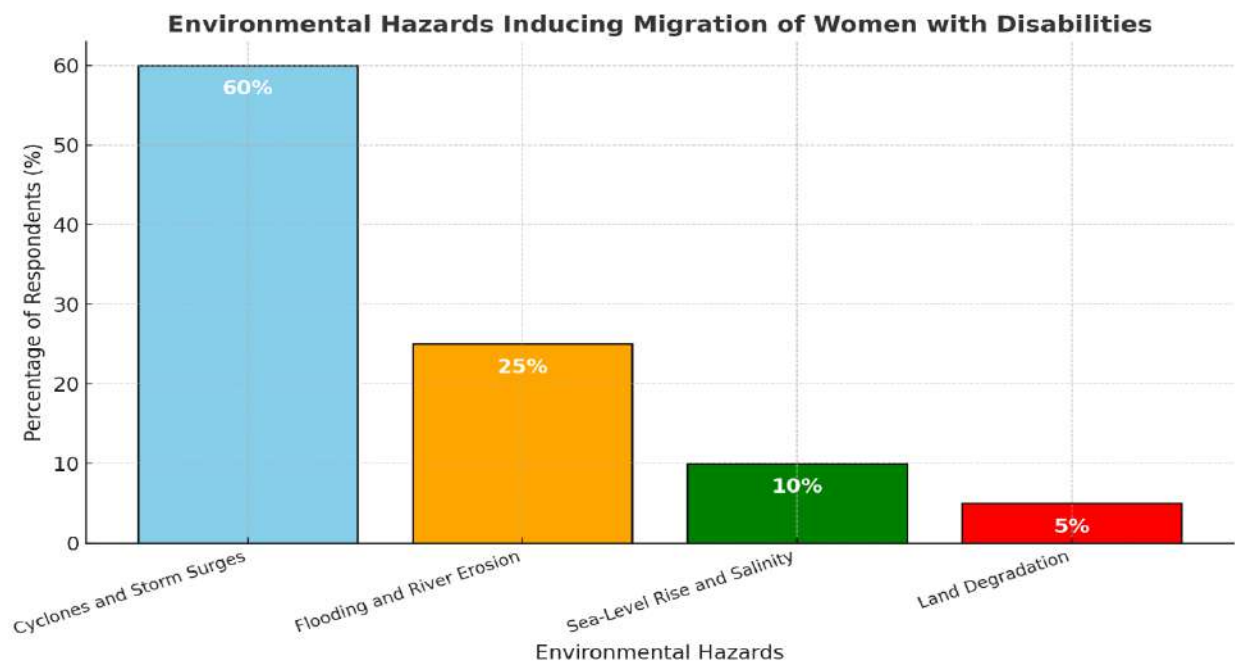
6. Discussion

The findings from this study provide a nuanced understanding of the experiences of women with disabilities during climate-induced migration in Cox’s Bazar, Bangladesh. The discussion below interprets the key findings, situates them within the existing literature, and highlights the intersectionality of gender, disability, and climate vulnerabilities. This analysis underscores both the challenges and resilience of women with disabilities, while drawing attention to the unique gaps in policies and support systems.

6.1 Types of Environmental Hazards and Their Role in Displacement

Cox’s Bazar is vulnerable to multiple environmental hazards that serve as the primary driving forces behind displacement for women with disabilities. These hazards include cyclones, floods, sea-level rise, salinity intrusion, and land degradation. Each hazard contributes to the erosion of livelihoods, disruption of social systems, and physical challenges during migration.

The study identified the following major environmental hazards as reported by women with disabilities:



6.1.1 Cyclones and Their Impact on Women with Disabilities

Cyclones emerged as the most significant driver of climate-induced migration, with 60% of respondents citing them as the primary cause of displacement. Women with disabilities specifically referenced cyclones Amphan (2020), Bulbul (2019), Ila (2009), and Roanu (2016) as events that uprooted their homes and livelihoods.

Experiences of Cyclone Amphan and Roanu

Participants described the traumatic experiences during cyclones:

- **Physical Barriers:** Inaccessible evacuation routes, lack of assistive devices, and inadequate transport worsened their situation.
 - A participant with a physical disability shared:
“During Cyclone Amphan, we couldn’t reach the shelter. The road was flooded, and no one came to help me move.”
- **Livelihood Loss:** Cyclones destroyed agricultural land, homes, and small businesses.
 - Another respondent said:
“My husband’s fishing boat was lost during Roanu. We had no money, and I couldn’t contribute because of my disability.”
- **Health Risks:** Many women reported health complications due to prolonged exposure to wet, unsanitary conditions in temporary shelters.

These experiences align with Mallick and Vogt (2014), who found that cyclones in Bangladesh exacerbate the vulnerability of marginalized groups, particularly women reliant on agriculture and fishing.

6.1.2 Flooding and River Erosion

Flooding and river erosion were reported by 25% of participants as major drivers of displacement. Cox’s Bazar’s loose soil and proximity to rivers make it highly prone to erosion, which gradually washes away homes and farmland.

- Participants shared how seasonal flooding inundated their houses and agricultural plots, forcing them to migrate:
“The floodwaters came every year. We rebuilt our house three times before finally leaving.”
- River erosion accelerated displacement by eroding homesteads and farmland:
“The river took our land. My family lost everything, and we had to move far from the village.”

Women with disabilities face additional challenges during floods, including difficulty evacuating quickly and accessing clean drinking water, consistent with findings from Dasgupta et al. (2018) on environmental migration in Bangladesh.

6.1.3 Sea-Level Rise and Salinity Intrusion

Sea-level rise, coupled with salinity intrusion, was identified by 10% of participants as a slow-onset driver of migration. Rising sea levels have led to saltwater entering rivers, ponds, and agricultural land, making the environment unlivable.

- **Impact on Agriculture:** Women reported that saline water made farming unviable: “We couldn’t grow rice or vegetables anymore. The water was too salty, and the land was ruined.”
- **Water Insecurity:** Drinking water sources became contaminated, posing severe health risks for families and individuals with disabilities.

These findings echo Ahmed and Eklund (2021), who highlight that salinity intrusion disproportionately affects coastal populations, particularly those reliant on small-scale farming.

6.1.4 Land Degradation and Soil Erosion

Although less frequent compared to cyclones and floods, land degradation caused by loose soil and deforestation was reported by 5% of participants as a factor contributing to their displacement. The soil texture in Cox’s Bazar is highly susceptible to erosion, which worsens with intense rainfall and flooding.

- Respondents mentioned: “Our house would shake after the heavy rains. The soil kept slipping away, and we felt unsafe staying there.”
- Land degradation leads to instability in housing and infrastructure, increasing the risks of displacement for vulnerable families.

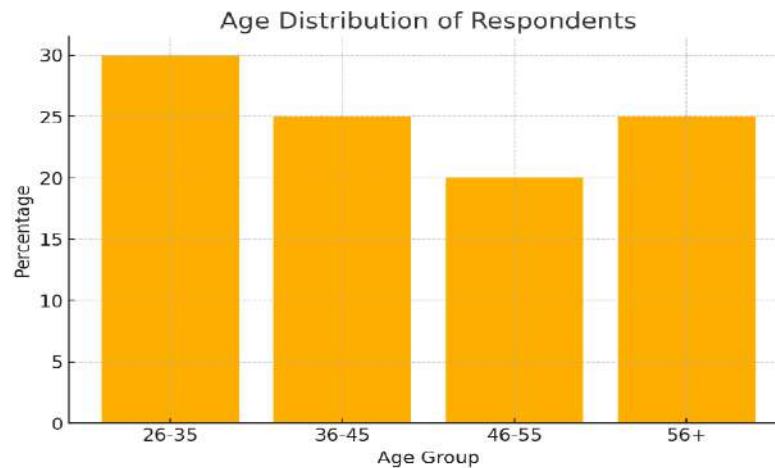
6.1.5 Intersectional Challenges During Environmental Hazards

The study underscores how women with disabilities experience intersectional vulnerabilities during environmental hazards:

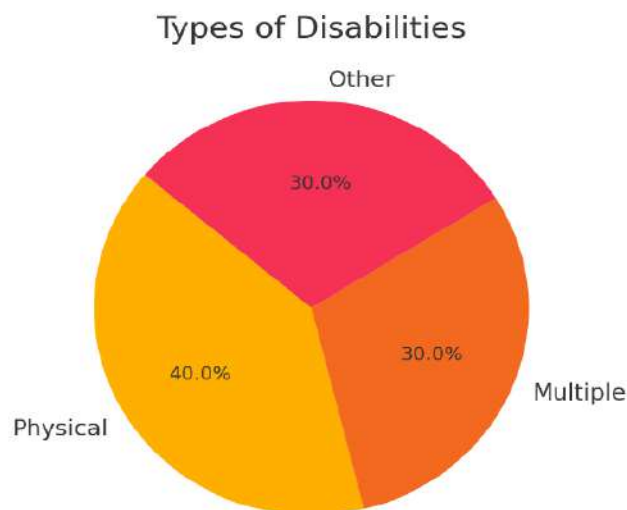
1. **Physical Accessibility:** Inaccessible evacuation centers and transport make rapid evacuation impossible.
2. **Economic Loss:** Livelihoods are frequently destroyed, with limited avenues for recovery post-migration.
3. **Health and Safety:** Temporary shelters lack healthcare facilities, exposing women to illness and gender-based violence.
4. **Social Stigma:** Women with disabilities are often neglected in relief distribution and face exclusion in shelter environments.

These challenges are consistent with UNESCAP (2018) and Kett et al. (2019), who highlight the compounded effects of gender, disability, and poverty during disasters.

6.2 Demographic and Socio-Economic Marginalization



The study revealed that the majority of respondents were aged between 26–35 years (30%), followed closely by those aged 36–45 years (25%). These findings align with Hossain et al. (2021), who found that working-age adults are often the most affected during climate-induced migration, as they are both breadwinners and caregivers. However, in the case of women with disabilities, this demographic vulnerability is exacerbated by their limited employment opportunities and heightened dependence on families or communities.



Regarding types of disabilities, 40% of respondents reported physical disabilities, while 30% experienced multiple disabilities. This highlights a critical challenge, as multiple disabilities present compounding barriers to mobility, access to shelters, and post-migration livelihoods. According to Banks et al. (2017), individuals with physical and multiple disabilities face greater risks during displacement due to inaccessible infrastructure and the absence of assistive devices. These findings reinforce the assertion that climate-induced migration amplifies systemic inequalities already faced by persons with disabilities.

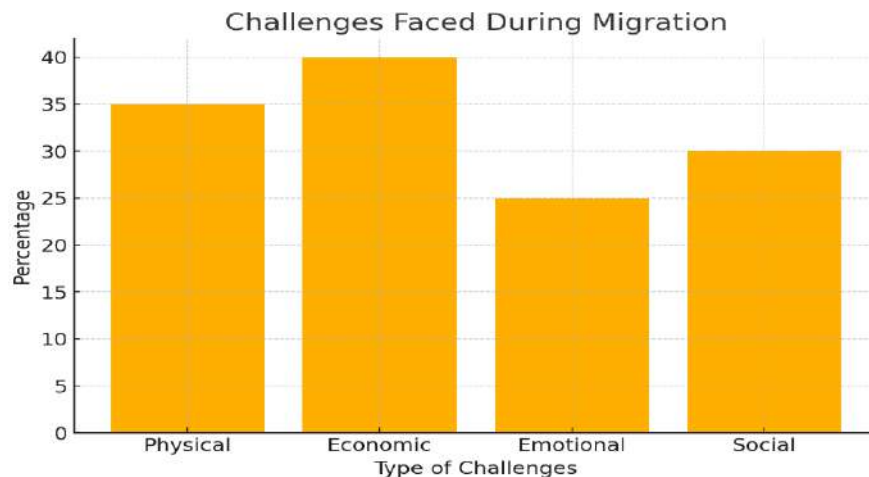


The study also highlighted income disparities, with 55% of respondents earning less than 10,000 BDT monthly. This finding is consistent with Islam et al. (2021), who reported that women with disabilities in Bangladesh are among the poorest, with limited participation in the formal economy. Migration further aggravates economic precarity, as many respondents reported losing livelihoods post-relocation. Additionally, 20% of respondents had no formal education, reflecting structural exclusion and limited access to opportunities. Educational marginalization is a recurring theme in global studies, where Grech (2016) emphasizes the cyclical relationship between disability, poverty, and education.

Together, these demographic findings highlight the profound socio-economic marginalization of women with disabilities, which places them at the nexus of vulnerability during climate-induced displacement.

6.3 Challenges Faced During Climate-Induced Migration

The findings revealed four major categories of challenges—physical, economic, emotional, and social—that women with disabilities face during climate-induced migration. These challenges are deeply interlinked and mutually reinforcing, reflecting the intersectionality of their vulnerabilities.



1. **Physical Challenges**

A significant portion of respondents (35%) reported difficulties accessing shelters, healthcare, and transportation during displacement due to inaccessible infrastructure. This aligns with Kett and Twigg (2007), who emphasized that persons with disabilities are often overlooked in disaster preparedness plans. The lack of ramps, accessible communication systems, and assistive devices creates physical barriers, preventing women with disabilities from evacuating safely. Furthermore, Chowdhury et al. (2017) highlight that physical challenges are compounded by a lack of awareness and training among disaster response personnel.

2. **Economic Challenges**

Economic challenges were the most reported issue, with 40% of respondents experiencing livelihood loss and income insecurity. Women with disabilities often depend on agriculture, informal jobs, or caregiving roles—all of which are disrupted by climate-related events. This finding echoes Dasgupta et al. (2018), who found that marginalized women are the first to lose economic opportunities during displacement. Additionally, post-migration environments offer few avenues for employment or income generation, exacerbating poverty.

3. **Emotional Challenges**

Emotional challenges, including fear, trauma, and anxiety, were reported by 25% of respondents. The findings align with Ariyabandu (2009), who highlighted that women face unique psychological burdens due to caregiving roles and the societal stigma surrounding disabilities. Displacement disrupts support systems, leaving women with disabilities isolated and emotionally distressed.

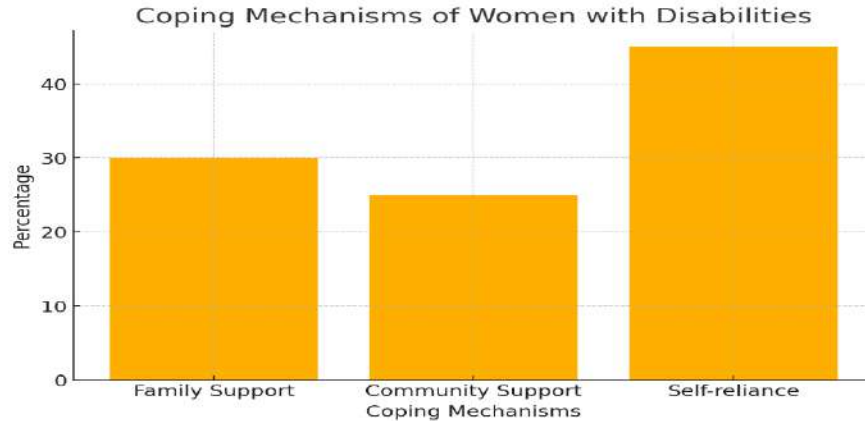
4. **Social Challenges**

The study found that 30% of respondents faced social exclusion, discrimination, and stigma during and after migration. Women with disabilities reported being neglected in shelters and community spaces, where decision-making processes exclude their perspectives. These findings align with Mallick and Vogt (2014), who found that women are often marginalized in relief efforts due to patriarchal norms. For women with disabilities, such exclusion is intensified, as societal perceptions of disability further limit their access to resources and networks.

Collectively, these challenges underscore how the intersectionality of gender, disability, and climate migration compounds vulnerabilities. Physical barriers intersect with economic precarity, while emotional distress is amplified by social exclusion. This multidimensional marginalization requires targeted, inclusive interventions to ensure equitable disaster responses.

6.4 Coping Mechanisms and Resilience Strategies

Despite the challenges, women with disabilities demonstrated significant resilience, employing both individual and community-level coping mechanisms.



1. **Family Support:**

30% of respondents relied heavily on family members for mobility, access to resources, and emotional support during displacement. Family networks played a crucial role in mitigating the impacts of migration, consistent with findings from Haque et al. (2021), who emphasized the importance of kinship ties in rural Bangladesh.

2. **Community Support:**

25% of respondents benefited from informal community networks and local NGOs. Women reported receiving food, cash support, and healthcare services from community-based organizations, highlighting the role of social capital in building resilience.

3. **NGO Aid:**

Humanitarian aid provided by NGOs was a vital coping mechanism for 20% of respondents. Organizations such as BRAC and local disability advocacy groups provided targeted support, including assistive devices and livelihood training. However, these efforts were often fragmented and unsustainable, reinforcing findings from UNESCAP (2018).

4. **Self-Reliance:**

25% of respondents demonstrated self-reliance by leveraging individual skills to generate income or navigate displacement challenges. Some women engaged in small-scale businesses, such as tailoring or food vending, despite resource constraints. This resilience reflects the agency of women with disabilities, aligning with Grech (2016), who highlights the resourcefulness of marginalized individuals in overcoming structural barriers.

While these coping mechanisms demonstrate resilience, they also underscore the gaps in institutional support systems. Reliance on family and NGOs indicates the absence of coordinated national strategies to address the needs of women with disabilities during displacement.

6.5 Policy Effectiveness and Gaps

The findings revealed critical gaps in the implementation of policies and programs addressing climate-induced displacement and disability inclusion.

1. **Inaccessible Infrastructure:**

Despite Bangladesh's Persons with Disabilities Rights and Protection Act (2013),

evacuation shelters and disaster response facilities remain largely inaccessible. This aligns with Kett et al. (2019), who argue that policy frameworks often fail at the implementation stage due to inadequate resources and capacity.

2. **Limited Disability Inclusion in Climate Policies:**

National strategies, such as the Bangladesh Climate Change Strategy and Action Plan (BCCSAP), lack specific provisions for women with disabilities. Existing frameworks prioritize gender to some extent but overlook the intersection of disability, reflecting findings from Islam et al. (2021).

3. **Fragmented Humanitarian Response:**

Respondents reported relying primarily on NGOs for aid, highlighting the absence of a coordinated government strategy. While NGOs play a crucial role, their efforts are often unsustainable and fail to address systemic exclusion.

These findings emphasize the need for inclusive policies that integrate gender and disability considerations into climate adaptation and disaster management frameworks.

7. Conclusions and Recommendations

This study provides critical insights into the multidimensional challenges faced by women with disabilities during climate-induced migration in Cox's Bazar, Bangladesh. The findings highlight that women with disabilities, particularly those in the prime working age (26–45 years), face amplified socio-economic and physical vulnerabilities. Specifically:

- **Demographic and Socio-Economic Marginalization:** A significant proportion of respondents reported income levels below 10,000 BDT, reflecting acute economic precarity, compounded by a lack of formal education and systemic barriers to employment. Women with physical and multiple disabilities (40% and 30%, respectively) reported unique challenges exacerbated by infrastructural and social exclusion.
- **Major Challenges:** Women with disabilities face interconnected physical, economic, emotional, and social challenges during migration. The most reported issues included inaccessible shelters, loss of livelihoods, emotional distress, and entrenched social stigma.
- **Coping Mechanisms:** Despite overwhelming challenges, respondents demonstrated resilience through reliance on family, community, and self-driven strategies, underscoring their strength and adaptability amid crises.

Collectively, these findings illustrate that climate-induced migration exacerbates the vulnerabilities of women with disabilities, necessitating urgent, intersectional approaches that address gender, disability, and socio-economic dimensions.

7.1 Policy Recommendations

To address the challenges and gaps identified in this research, targeted policy interventions must be undertaken by the government, NGOs, and other key stakeholders. The following recommendations are proposed:

1. **Gender-Sensitive and Disability-Inclusive Interventions:**

- **Inclusive Disaster Management Policies:** Develop and implement disaster response and relocation frameworks that explicitly incorporate the needs of women with disabilities. This includes accessible shelters, assistive devices, ramps, sign-language interpretation, and inclusive communication strategies during evacuations.
- **Economic Empowerment Programs:** Implement livelihood and income generation initiatives tailored for women with disabilities. Special focus should be placed on providing skill development, vocational training, and microfinance opportunities.
- **Health and Psychosocial Support:** Integrate accessible healthcare and mental health services into disaster recovery programs to address both physical and emotional needs. These should include counseling, trauma care, and rehabilitation services.
- **Awareness and Training for Stakeholders:** Train disaster response personnel, including government agencies and NGOs, on gender and disability sensitivity to ensure equitable treatment and inclusion during emergencies.

2. **Enhanced Legal Frameworks and Policies:**

- Strengthen legal protections to safeguard the rights of women with disabilities in climate-vulnerable regions, ensuring they are prioritized in national disaster preparedness plans and resource allocation.
- Mandate gender- and disability-inclusive consultations during policymaking and disaster response planning to reflect the lived experiences of these marginalized groups.

3. **Collaborative Efforts Between Stakeholders:**

- Facilitate partnerships between government bodies, NGOs, and community-based organizations to pool resources and expertise, ensuring sustainable support systems for women with disabilities before, during, and after displacement.

7.2 Practical Recommendations

In addition to policy interventions, practical and actionable steps must be taken at the community level to enhance resilience and inclusivity.

1. **Community-Level Support Systems:**

- **Community Resilience Networks:** Establish local support groups and networks that empower women with disabilities through mutual assistance, skill-sharing, and advocacy. These networks can serve as platforms to amplify their voices and ensure participation in decision-making.
- **Accessible Local Infrastructure:** Ensure community shelters, healthcare centers, and resource distribution points are made accessible to persons with disabilities. This includes constructing ramps, ensuring availability of assistive devices, and improving transportation facilities.
- **Engaging Families and Communities:** Promote awareness campaigns that address stigma and discrimination while fostering inclusive attitudes within families and

communities. Education initiatives should highlight the rights and contributions of women with disabilities.

2. **Strengthening Local Economies:**

- Facilitate livelihood restoration programs post-migration by supporting women with disabilities in starting small businesses or engaging in sustainable economic activities, including home-based work and farming.
- Provide cash-based assistance and vocational training tailored to their abilities, ensuring long-term financial security and independence.

3. **Improving Emergency Preparedness:**

- Implement community-led disaster preparedness plans that include input from women with disabilities, ensuring their needs are prioritized. Practice drills and training sessions should involve persons with disabilities and focus on accessible evacuation strategies.

7.3 Future Research Directions

While this study provides an in-depth analysis of the challenges and resilience of women with disabilities during climate-induced migration, further research is essential to expand the understanding of this intersectional issue. The following areas are proposed for future exploration:

1. **Broader Geographical Coverage:**

Expand the study to other climate-vulnerable regions in Bangladesh and beyond to compare the experiences of women with disabilities across different contexts.

2. **Longitudinal Studies:**

Conduct long-term studies to track the socio-economic recovery, health outcomes, and resilience-building of women with disabilities post-displacement. This will provide insights into the long-term impacts of climate migration.

3. **Inclusion of Men with Disabilities:**

While this study focuses on women, future research can explore the challenges faced by men and children with disabilities during displacement, enabling a more comprehensive understanding of disability-inclusive vulnerabilities.

4. **Role of Technology and Innovation:**

Investigate the role of assistive technologies, mobile apps, and innovative tools in enhancing accessibility and support for women with disabilities in disaster preparedness and migration contexts.

5. **Policy Effectiveness Analysis:**

Evaluate the implementation and impact of existing gender-sensitive and disability-inclusive policies in mitigating the challenges of climate-induced migration.

This research emphasizes the urgent need to recognize and address the compounded vulnerabilities faced by women with disabilities in the face of climate-induced migration. Through inclusive policies, practical interventions, and collaborative efforts, stakeholders can transform these challenges into opportunities for empowerment and resilience. By prioritizing their voices and experiences, we can foster a more equitable, inclusive, and sustainable response to the global challenges of climate change and migration.

8. References:

1. Ahmed, S., & Eklund, E. (2021). *Climate change impacts in coastal Bangladesh: Migration, gender and environmental injustice*. *Asian Affairs*, 52(1), 155–174.
2. Alston, M. (2015). *Women and climate change in Bangladesh*. Routledge.
3. Ariyabandu, M. M. (2009). *Sex, gender and gender relations in disasters*. UNISDR.
4. Banks, L. M., Kuper, H., & Polack, S. (2017). Poverty and disability in low- and middle-income countries: A systematic review. *PLOS ONE*, 12(12), e0189996.
5. Campbell, J., & Warrick, O. (2014). *Climate change and migration issues in the Pacific*. UNESCAP.
6. Chowdhury, M. S., Rahman, M. S., & Ahmed, S. (2017). Gender, disability, and post-disaster reconstruction in Bangladesh. *International Journal of Disaster Risk Reduction*, 22, 241–249. <https://doi.org/10.1016/j.ijdr.2017.02.003>
7. Dasgupta, S., Huq, M., & Wheeler, D. (2018). *The impacts of sea-level rise on Bangladesh*. World Bank Policy Report.
8. Grech, S. (2016). Disability and poverty in the Global South: Renegotiating development in Guatemala. *Development and Change*, 47(3), 471–493.
9. Haque, U., Hashizume, M., Kolivras, K. N., Overgaard, H. J., Das, B., & Yamamoto, T. (2022). Reduced impact of cyclones in Bangladesh: A case study of community resilience. *Climate Risk Management*, 35, 100313.
10. Hossain, M. S., Mallick, B., & Vogt, J. (2020). Climate-induced migration in Bangladesh: Adaptation strategies and policy gaps. *Environmental Science & Policy*, 105, 123–135.
11. Hossain, M. S., Mallick, B., & Vogt, J. (2021). Addressing disability inclusion in disaster risk reduction policies in Bangladesh. *Environmental Science & Policy*, 110, 78–87. <https://doi.org/10.1016/j.envsci.2020.09.002>
12. Huq, S., Ahmed, T., & Rahman, M. (2015). *Climate change and Bangladesh*. *Climate Policy Journal*, 12(3), 10–25.
13. IPCC. (2021). *Climate change 2021: The physical science basis*. Intergovernmental Panel on Climate Change.
14. Islam, M. S., Alam, M. S., & Islam, M. T. (2021). Addressing disability and climate change in Bangladesh: Policy implications. *Disability & Society*, 36(5), 727–745.
15. Kett, M., & Twigg, J. (2007). Disability and disasters: Towards an inclusive approach. *World Development*, 35(8), 1409–1421.
16. Kett, M., Cole, E., Turner, J., & Hughes, S. (2019). Disability, climate and migration: Evidence from South Asia. *IDS Bulletin*, 50(4), 25–42.
17. Mallick, B., & Vogt, J. (2014). Population displacement after cyclone and its consequences: Empirical evidence from coastal Bangladesh. *Natural Hazards*, 73(2), 191–212. <https://doi.org/10.1007/s11069-014-1088-z>
18. Neumayer, E., & Plümper, T. (2007). The gendered nature of natural disasters: The impact of catastrophic events on the gender gap in life expectancy, 1981–2002. *Annals of the Association of American Geographers*, 97(3), 551–566.
19. UNDRR. (2015). *Sendai framework for disaster risk reduction 2015–2030*. United Nations Office for Disaster Risk Reduction.
20. UNESCAP. (2018). *Disability and climate change in the Asia-Pacific region: Risks, resilience, and inclusion*. UNESCAP Reports.
21. UNFPA. (2022). *Climate resilience and gender equity in Bangladesh*. United Nations Population Fund.
22. World Bank. (2021). *Groundswell: Preparing for climate migration*. World Bank Group.