

Assessing the Integration of Intersectionality in Adaptation Governance: A Policy-to-Practice Gap Analysis in Shyamnagar, Bangladesh

Md. Mujahidul Islam¹

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Abstract

This paper examines the degree of integration of intersectionality within adaptive governance in Bangladesh, focusing on the policy-to-practice gap. This paper adopted a mixed-methods approach to analyze five significant climate adaptation policy documents of Bangladesh which are NAPA (2009), BCCSAP (2009), NAP (2022), Delta Plan 2100, and the Local Adaptation Plan of Action (LAPA) employing a structured matrix to evaluate their responsiveness to intersecting vulnerabilities, including gender, age, disability, ethnicity, and socio-economic status. In addition, Key Informant Interviews (KIIs) were conducted with local government officials, NGO representatives, community leaders, and members of vulnerable groups in Shyamnagar. The quantitative component comprised a structured survey of 70 respondents which are analyzed by using SPSS for descriptive statistics, chi-square tests, t-tests, and ANOVA. Findings illustrate that although policies acknowledge general vulnerability, they often lack actionable measures addressing intersectionality. Furthermore, community-level insights indicate limited participation of marginalized groups in adaptation planning and unequal access to resources. The study underscores the need for intersectionality-aware policy frameworks and inclusive governance mechanisms to ensure equitable adaptation outcomes.

Key Words: *Intersectionality; Adaptation Governance; Climate Policy; Vulnerable Groups; Inclusive Governance; Bangladesh*

¹ Assistant Professor, Department of Public Administration, Begum Rokeya University, Rangpur, Bangladesh.
Email: mujahidulislam@brur.ac.bd
ORCID: <https://orcid.org/0009-0000-8828-4383>

Introduction

The Earth's climate is undergoing rapid and unprecedented changes which is exacerbating to a range of adverse impacts on ecosystems, economies, and human well-being worldwide (Abbass et al., 2022; Md. M. Islam, Hasan, Mia, et al., 2025). Since these threats intensify, climate change adaptation has become an essential policy and planning strategy for minimizing risks and strengthening the resilience of vulnerable populations (Malik & Ford, 2024). Adaptation incorporates a variety of policies and interventions which are designed to reduce exposure and sensitivity to climate hazards by enhancing the capacity of communities to respond and recover (Burke & Lobell, 2010). However, the impacts of climate change are neither evenly distributed nor equally experienced (Amorim-Maia et al., 2022; Islam, Hasan, Mimpa, et al., 2025a). Furthermore, the adverse impacts of climate change vary across geographical regions, social identities, and power structures that are including distinctions based on gender, disability, age, ethnicity, class, and occupation (Amorim-Maia et al., 2022; Islam, Hasan, Mimpa, et al., 2025a). For instance, during the 1991 cyclone in Bangladesh, approximately 138,000 lives were lost where 31% were women over the age of 40 that is demonstrating the gendered and age-specific dimensions of vulnerability (Bern et al., 1993).

These differentiated experiences underscore the importance of integrating intersectionality into climate adaptation governance (Md. M. Islam, Hasan, Mimpa, et al., 2025a; Md. M. Islam & Islam, 2026). Intersectionality is a conceptual lens that helps unpack how overlapping social identities interact to produce multidimensional inequalities (Runyan, 2018). When issues of intersectionality are ignored in governance processes, these inequalities can marginalize the most at-risk populations and render adaptation measures ineffective or even unjust. Yet, much of the existing literature and governance practice tends to treat vulnerable groups as homogenous categories which is failing to capture the nuanced interaction of identity, power, and exclusion (Lindbergh et al., 2022). In the absence of intentional incorporation of intersectional perspectives, adaptation programs can exacerbate structural inequalities which may further marginalize women, those with disabilities, the elderly, ethnic minorities and the landless (M. M. Islam & Jahan, 2025; Mikulewicz et al., 2023). Although some studies have begun acknowledging these concerns, empirical research on the operationalization of intersectionality within adaptation governance particularly in low-lying, climate-exposed countries like Bangladesh remains scarce (Amorim-Maia et al., 2022; Asadullah et al., 2021).

Bangladesh's vulnerability to floods, cyclones, salinity intrusion, and sea-level rise is widely recognized (Asadullah et al., 2021; Assaduzzaman et al., 2023; M. Islam, 2024). These climate threats compound pre-existing social and economic disparities and disproportionately affect marginalized populations (Ahmed & Eklund, 2021). Notwithstanding commendable policy initiatives such as the National Adaptation Programme of Action (2009), Bangladesh Climate Change Strategy and Action Plan (2009), Climate Change Trust Act (2010), National Adaptation Plan (2022), Bangladesh Delta Plan 2100, and National Adaptation Programme of Action (NAPA),

a pivotal inquiry persists: to what degree are intersectional vulnerabilities genuinely integrated into both policy formulation and execution?

This study aims to address this gap by assessing the integration of intersectionality in adaptation governance in Bangladesh through a policy-to-practice gap analysis centered in Shyamnagar, one of the country's most climate-affected subdistricts. Specifically, the study evaluates: (1) how key national adaptation policies reflect intersectional considerations, and (2) whether these considerations are meaningfully implemented on the ground.

To achieve this, the research employs a mixed-methods approach. First, a qualitative content analysis of five major national policy documents was conducted using a structured evaluation matrix focused on gender, disability, age, ethnicity, and socioeconomic status. Second, Key Informant Interviews (KIIs) with local officials, NGO staff, and marginalized community members in Shyamnagar explored practical experiences and barriers to inclusive adaptation. Finally, a household survey of 70 respondents, selected through snowball sampling, provided quantitative insights. The survey data were analyzed using descriptive statistics, chi-square tests, t-tests, and ANOVA in SPSS. This triangulated approach offers a comprehensive understanding of how intersectionality is—or is not—translated from policy into practice.

Literature Review

The concept of intersectionality which is introduced by legal scholar Kimberlé Crenshaw in the late 1980s that provides a critical lens for understanding how overlapping identities such as race, gender, class, sexuality, disability, and religion interact to shape the experiences of individuals within broader systems of power and inequality (Crenshaw, 2017). At the beginning, Kimberlé Crenshaw developed this concept for highlighting the compounded discrimination encountered by Black women within legal systems. However, over the time, the relevance of intersectionality has expanded across various academic disciplines that encompasses sociology, environmental studies, and climate justice (Phoenix & Pattynama, 2006). Afterwards, scholars have frequently used the concept of intersectionality to climate research, particularly to explore how different communities experience and respond to environmental changes. For instance, Kaijser and Kronsell demonstrate that using intersectionality through a feminist perspective provides valuable insights into how power relations shape people's differential responses to climate change (Kaijser & Kronsell, 2014). Similarly, Garcia and Tschakert emphasize that critical human geographers have long recognized that the burdens of climate change are unevenly distributed which is often falling disproportionately on marginalized groups (Garcia & Tschakert, 2022a). These studies, grounded in feminist and critical theory, argue for more inclusive and socially just adaptation frameworks that consider the ways in which power, identity, and inequality are interwoven into environmental vulnerabilities.

It is well established in the literature that climate change does not affect all people or places in the same way. Individual and community vulnerability are shaped by a variety of social factors, including gender, age, economic status, disability, and ethnicity. In the case of Bangladesh, a

growing body of evidence suggests that climate change has intensified over recent decades which is manifesting through rising temperatures, fluctuating rainfall, sea-level rise, and an increase in extreme weather events. These hazards include floods, droughts, river erosion, cyclones, salinity intrusion, landslides, heatwaves, and cold spells, among others, and are projected to increase in both frequency and intensity (Dasgupta et al., 2014; Dastagir, 2015; Karim & Mimura, 2008; Tareq et al., 2018)

However, these environmental threats do not affect all regions of Bangladesh equally. Studies show that geographic variations play a critical role in shaping exposure and risk. For example, coastal regions are more susceptible to cyclones and storm surges (Mallick et al., 2017), while the northwestern districts experience more frequent and prolonged drought conditions (Anik et al., 2021). Even within the same region, people's vulnerability can differ based on social and economic characteristics. Research shows that factors such as gender, income, age, disability, and ethnicity influence the degree to which individuals and groups can prepare for, respond to, and recover from climate hazards (Pearse, 2017; Reggers, 2019).

Gender, in particular, has emerged as a central factor in shaping climate vulnerability. Women often face disproportionate risks during climate-related disasters due to structural inequalities such as limited access to education, economic resources, healthcare, and decision-making opportunities (Kakota et al., 2011). Cultural norms and restricted mobility further compound these challenges. When women also belong to other disadvantaged categories (such as being elderly, disabled, or economically impoverished), their susceptibility increases significantly (Caridade et al., 2022; Kakota et al., 2011). Nonetheless, it is paramount to note that men also face specific vulnerabilities. Men with limited income, low educational attainment, physical or mental health issues, or psychological distress are similarly at risk, particularly in contexts where social safety nets are weak (Kosanic et al., 2022; Leichenko & Silva, 2014). These insights highlight that vulnerability is not a static or uniform experience, but a dynamic and multifaceted condition shaped by intersecting identities and contexts.

Among the many dimensions of intersectionality, disability is one that significantly amplifies vulnerability to climate hazards. Research indicates that people with disabilities often encounter greater obstacles during and after disasters due to a combination of physical, social, and systemic barriers. These include limited mobility, challenges in accessing critical information, specific medical and health needs, communication difficulties, inadequate shelter or evacuation facilities, economic hardship, and dependence on caregivers (King & Gregg, 2022). These overlapping challenges create compounded vulnerabilities that are often overlooked in mainstream climate adaptation efforts. Despite growing awareness, people with disabilities remain largely marginalized in climate policy and practice. The Paris Agreement (2015) acknowledge the need to include persons with disabilities in climate governance remains limited (Bell et al., 2020). A review of Nationally Determined Contributions (NDCs) submitted under the Paris Agreement

revealed that only 35 out of 192 countries specifically mentioned people with disabilities, and only 45 had included them in national adaptation policies or strategies (Harvey & correspondent, 2022). Age is another crucial factor in climate vulnerability. Children, for example, are particularly vulnerable due to their dependence on adults, physiological sensitivity, and limited coping capacity. Their risk is heightened by factors such as poor parental education, household poverty, and regional exposure to hazards (Stanberry et al., 2018). In Bangladesh, Save the Children (2022) reports that 11.1 million of the country's 53.4 million children, roughly 21%, are especially vulnerable to climate hazards due to poverty. Additionally, a UNICEF study identified 20 districts where children face heightened climate risk (Rees, 2021). For girls, these challenges are compounded by risks of early marriage, trafficking, and gender-based violence. Research shows that climate-induced stress in coastal regions has led to a rise in child marriages which undermines educational and health outcomes for girls (Asadullah et al., 2021)

Ethnic identity also plays a critical role in shaping climate vulnerability. Ethnic minority communities often face systemic disadvantages that limit their ability to adapt to environmental changes. These include geographic marginalization, limited political representation, poor infrastructure, dependence on natural resources, and a long history of exclusion (Phuong et al., 2023; Vinyeta et al., 2016). Bangladesh, the official census records approximately 1.65 million people belonging to ethnic minority groups, though rights-based organizations estimate the number is closer to 3 million (Md. M. Islam, Hasan, Mimpa, et al., 2025b). These populations often reside in climate-vulnerable areas and face higher levels of poverty, unemployment, and food insecurity.

The preceding literature review has demonstrated how multiple intersecting social factors significantly heighten vulnerability to climate-related hazards. However, in Bangladesh, there remains limited exploration of how these compounded vulnerabilities are recognized and addressed within climate adaptation governance. While considerable research exists on climate impacts and general vulnerability, few studies focus on how the principles of intersectionality are meaningfully incorporated into adaptation policy and practice. This gap underscores the need for further investigation. To address this, the present study poses the central research question: *To what extent is intersectionality integrated into adaptation governance in Bangladesh?* By examining this, the study seeks to advance existing knowledge on how multidimensional vulnerabilities are addressed in adaptation policies, frameworks, and institutional practices.

Conceptual Framework

Adaptation, Governance, and Adaptation Governance

Adaptation refers to the process through which human and natural systems adjust in response to actual or expected climate change, aiming to minimize harm or capitalize on potential benefits. The Intergovernmental Panel on Climate Change (IPCC) defines it as adjustments that reduce damage or enhance positive outcomes (Bäckstrand & Kuyper, 2017). United Nations Framework

Convention on Climate Change (UNFCCC) highlights changes within ecological, social, or economic systems prompted by climate impacts (Schipper, 2006). Governance, meanwhile, has been defined from various perspectives. The OECD describes it as the exercise of political, economic, and administrative authority to manage a nation's affairs (González et al., 2017). Similarly, institutions like the UNDP and World Bank emphasize governance as managing public resources and decision-making across key sectors (Katsamunskas, 2016). The IPCC further expands this view about governance by emphasizing the role of both public and private actors, as well as formal and informal institutions, operating at multiple scales (Pörtner & Roberts, 2022).

Bringing these two concepts together, *adaptation governance* refers to the systems, policies, institutions, and processes through which climate adaptation is structured and implemented. It involves how decisions are made, resources distributed, and actions coordinated to enhance resilience and reduce vulnerability at local, national, and global levels (Lindbergh et al., 2022). It also captures the dynamic interactions among political, administrative, and social actors that shape adaptation outcomes (Huiteima et al., 2016).

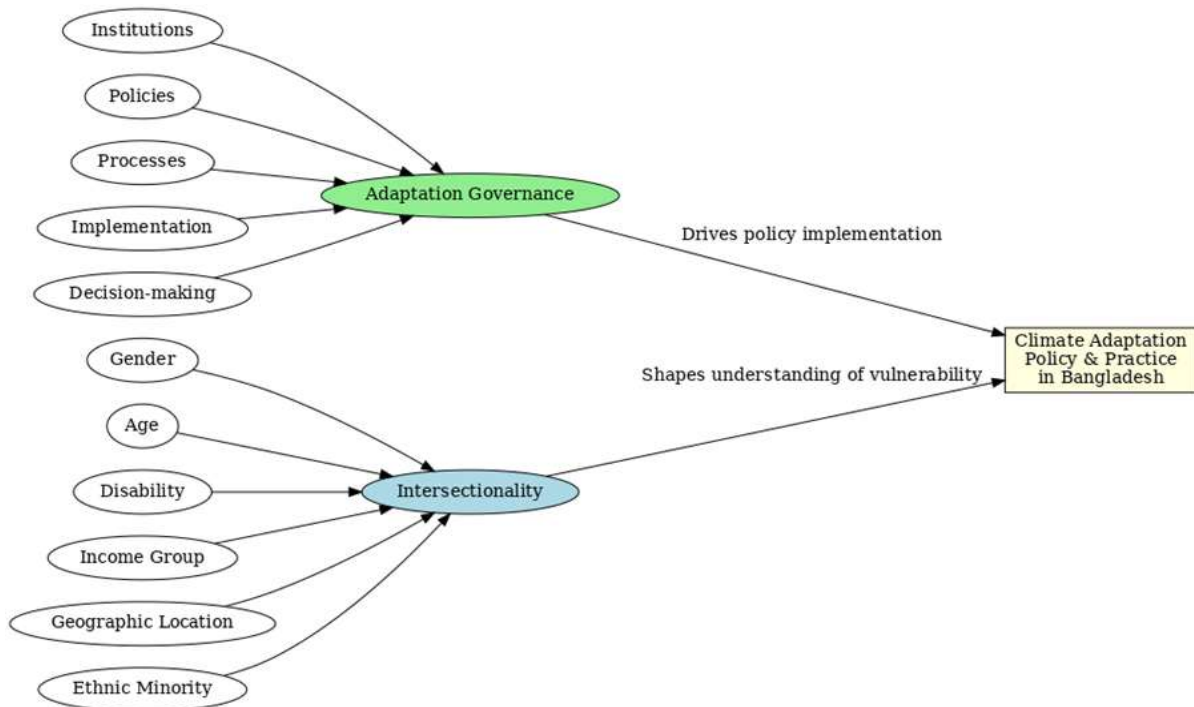


Figure 1. *Conceptual framework linking intersectionality and adaptation governance in climate adaptation policy and practice in Bangladesh.*

Understanding Intersectionality and Linking Intersectionality to Adaptation Governance

Intersectionality, initially articulated by Kimberlé Crenshaw in 1989, elucidates the interplay of overlapping identities (including race, gender, class, age, and ability) in shaping individuals'

experiences of privilege and disadvantage, especially for those encountering multiple forms of marginalization (Crenshaw, 2017; Handford & Gee, 2023). Moving beyond single-axis analysis, it provides a framework to understand how power and inequality operate through complex social hierarchies (Hancock, 2007). In the context of climate change, intersectionality has become a valuable tool for examining how environmental risks disproportionately affect already marginalized groups (Kaijser & Kronsell, 2014). Recent studies have shown its relevance in climate adaptation governance, where it helps identify unequal impacts and inform more inclusive and just adaptation strategies (Garcia & Tschakert, 2022b).

Intersectionality is based on the understanding that overlapping social identities influence individuals' experiences with power, marginalization, and resilience (Amorim-Maia et al., 2022). Governance, by contrast, refers to the systems and structures through which collective decisions are made and implemented. When combined, these concepts offer a foundation for more inclusive, transparent, and accountable governance systems. Intersectionality promotes participatory decision-making by ensuring that diverse voices especially from marginalized communities who are meaningfully included in governance processes. This leads to more responsive and equitable policies (Smooth, 2013). It also helps expose and address power imbalances, encouraging fairer representation and resource allocation, while fostering transparency and public accountability (Budowski & Hadjar, 2023). Moreover, inclusive governance grounded in intersectionality can help reduce corruption and build institutional trust.

Methodology

This study employed a **convergent mixed-methods design** to assess the integration of intersectionality within climate adaptation governance in Shyamnagar, a climate-vulnerable subdistrict in Bangladesh. Both qualitative and quantitative methods were applied concurrently to ensure triangulation and deepen analytical insights.

Rationale for Selecting Shyamnagar as the Study Area

Shyamnagar Upazila, located in the Satkhira district of coastal Bangladesh, was purposively selected as the study site due to its acute vulnerability to climate-induced hazards and its complex socio-ecological landscape. Shyamnagar regularly experiences cyclones, tidal surges, salinity intrusion, and flooding (Rahaman et al., 2024). Shyamnagar Upazila stands out as one of the most severely affected regions in Bangladesh, having borne the brunt of Cyclone Sidr in 2007 and Cyclone Aila in 2009 (Saha & Ballard, 2021). The region is inhabited by vulnerable populations, including the landless, female-headed families, ethnic minorities, the elderly, and those with impairments, many of whom live in underserved and inaccessible neighborhoods. These intersecting vulnerabilities make adaptation especially difficult for the most marginalized (Haque et al., 2020). This study explores how adaptation governance in Shyamnagar responds to these diverse needs and assesses the extent to which intersectionality is integrated into local adaptation practices. Insights from this case study aim to inform the development of more inclusive and effective adaptation strategies across similarly vulnerable regions in Bangladesh.

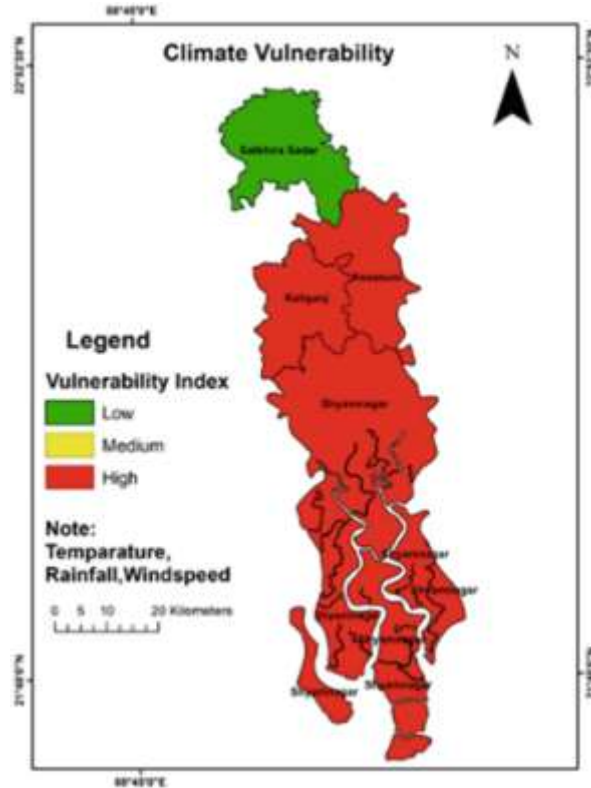


Figure 2. Climate vulnerability across Satkhira District based on temperature, rainfall, and windspeed. This map displays the spatial distribution of climate vulnerability in Satkhira District, Bangladesh. Areas are categorized into low (green), medium (yellow), and high (red) vulnerability zones. Shyamnagar and surrounding upazilas show a high vulnerability index, while Satkhira Sadar is marked as low-risk. Data is interpreted using climatic indicators including temperature, rainfall, and windspeed (Rahaman et al., 2024).

Qualitative Component

The qualitative strand comprised two key approaches: document analysis and key informant interviews (KIIs).

Document Analysis

Five major climate adaptation policy documents were purposively selected for in-depth review to evaluate how intersectionality is addressed within Bangladesh's adaptation governance framework. These included the *National Adaptation Programme of Action (NAPA, 2009)*, *Bangladesh Climate Change Strategy and Action Plan (BCCSAP, 2009)*, *National Adaptation Plan (NAP, 2022)*, *Bangladesh Delta Plan 2100*, and the *Local Adaptation Plan of Action (LAPA)*. A matrix-based content analysis framework was employed to systematically assess the extent to which these documents incorporate key intersectional dimensions. These dimensions included gender, age, disability, ethnic minorities, livelihoods, poverty, and socio-economic class, as well as the broader principles of intersectionality. The analysis further examined the degree of emphasis

placed on explicit participation, community voice, inclusive monitoring, and accountability mechanisms to determine how well these policies respond to the differentiated vulnerabilities experienced by marginalized groups.

Key Informant Interviews (KIIs)

Semi-structured KIIs were conducted with a range of stakeholders, including local government officials (n=5), NGO representatives (n=5), community leaders (n=4), academics (n=3), and members of vulnerable communities (n=8). Participants were selected based on their experience with or exposure to climate adaptation interventions. Data were thematically analyzed using inductive coding techniques to identify key narratives, challenges, and recommendations related to the operationalization of intersectionality.

Quantitative Component

The quantitative phase involved a structured survey administered to 70 respondents that include both males and females, as well as individuals with and without disabilities. The rationale for selecting this sample size stems from both **practical considerations and methodological alignment**. Given the study's focus on intersectionality within a **vulnerable and hard-to-reach population** in Shyamnagar which is a geographically remote and disaster-prone area. It was hardly feasible for this research to recruit a large and random sample due to time and financial constraints. Instead, the sample size was determined based on **purposive criteria** that prioritized **depth and inclusivity over statistical generalizability**.

Sampling Technique and Data Analysis

To ensure the meaningful inclusion of marginalized populations, this study employed a **snowball sampling technique**, particularly targeting individuals who are often underrepresented in research, such as persons with disabilities, women, and elderly community members. This method enabled the researcher to access participants who are typically difficult to reach by utilizing established networks of trust within the community. This approach is particularly advantageous in situations where random sampling may overlook individuals with restricted mobility, social visibility, or communication access. The **quantitative data** collected through structured surveys were analyzed using **IBM SPSS Statistics (Version 26)**, incorporating a suite of statistical tools to uncover patterns and relationships. Descriptive statistics were used to summarize participants' demographic profiles and perceptions of adaptation programs. Cross-tabulations enabled the exploration of bivariate relationships between key variables, while chi-square tests assessed the strength of statistical associations among categorical data. Additionally, independent samples t-tests were conducted to determine whether significant differences existed in satisfaction scores based on gender and disability status. One-way ANOVA was further applied to compare satisfaction levels across different occupational groups that enrich the analysis with multi-group comparisons.

Result

The following table shows the extent to which five key climate adaptation policy documents in Bangladesh which include NAPA (2009), BCCSAP (2009), NAP (2022), Delta Plan 2100, and the Local Adaptation Plan of Action (LAPA) have incorporated various dimensions of intersectional vulnerability. These include gender, age, disability, ethnic minorities, livelihoods, and poverty/class. The table also evaluates whether the policies explicitly acknowledge intersectionality, ensure the participation and voice of marginalized populations, and contain provisions for monitoring social inclusion. The analysis is based on a qualitative review of policy texts and relevant academic and institutional sources.

Table 1: Inclusion of Vulnerability and Intersectionality in Bangladesh's Climate Adaptation Policies.

Policy Document	Gender	Age	Disability	Ethnic Minorities	Livelihoods	Poverty / Class	Intersectionality Explicit	Participation & Voice	Monitoring Inclusion
NAPA (2009)	✓	⚠	✗	✗	✓	⚠	✗	⚠	✗
BCCSAP (2009)	✓	⚠	⚠	✗	✓	✓	✗	⚠	✗
NAP (2022)	✓	✓	✓	⚠	✓	✓	⚠	✓	⚠
Delta Plan 2100	⚠	✗	✗	✗	✓	⚠	✗	⚠	✗
Local Adaptation Plan of Action (LAPA)	✓	⚠	⚠	⚠	✓	✓	⚠	✓	⚠

✓ = Explicitly Addressed; ⚠ = Partially Addressed or Implicitly Mentioned; ✗ = Not Addressed.

Interpretation of Intersectional Inclusion in Bangladesh's Climate Adaptation Policies

The above table shows the extent to which five key climate adaptation policy documents in Bangladesh which include NAPA (2009), BCCSAP (2009), NAP (2022), Delta Plan 2100, and the Local Adaptation Plan of Action (LAPA) have incorporated various dimensions of intersectional vulnerability. These include gender, age, disability, ethnic minorities, livelihoods, and poverty/class. The table also evaluates whether the policies explicitly acknowledge intersectionality, ensure the participation and voice of marginalized populations, and contain provisions for monitoring social inclusion. The analysis is based on a qualitative review of policy texts and relevant academic and institutional sources.

Gender

All five documents, except the Delta Plan 2100, recognize gender as a critical dimension of vulnerability. NAP (2022) and LAPA stand out for their explicit inclusion of women’s issues, particularly in relation to health, livelihood, early warning systems, and participation. NAPA (2009) and BCCSAP (2009) identify women as a vulnerable group but fall short in offering concrete, actionable pathways tailored to their needs. The Delta Plan only makes marginal references to gender, lacking depth or actionable strategies.

Age

Only NAP (2022) explicitly includes age-specific vulnerabilities, especially for children and the elderly, highlighting issues such as heat stress, loss of education, and displacement. The other documents, including LAPA and BCCSAP, offer only minimal or symbolic references and the Delta Plan 2100 completely overlooks age-based vulnerabilities, despite children and elderly being among the most at-risk groups during climate disasters.

Disability

A critical gap is visible in earlier policies: both NAPA (2009) and Delta Plan 2100 exclude persons with disabilities altogether. BCCSAP (2009) makes a vague mention of “vulnerable groups,” without disaggregating by ability status, and thus receives a partial score. Only NAP (2022) meaningfully engages with disability, acknowledging specific challenges in mobility, healthcare access, education, and proposing some inclusive adaptation practices. LAPA, implemented locally, addresses disability more as a practical concern, yet still lacks comprehensive planning, hence rated.

Ethnic Minorities

Ethnic minorities remain significantly underrepresented across all documents. Only NAP (2022) partially includes ethnic minorities, primarily focusing on the Chittagong Hill Tracts (CHT) region. It discusses land degradation, water scarcity, and livelihood vulnerabilities specific to ethnic groups but fails to consider plainland minorities or offer detailed policies to address systematic discrimination. NAPA, BCCSAP, Delta Plan, and LAPA show very limited or no inclusion, despite evidence of high climate vulnerability in these communities.

Livelihoods and Employment

This is one of the more consistently addressed dimensions. All five documents recognize the importance of protecting livelihoods in climate-vulnerable regions, with a particular focus on agriculture, fisheries, and rural employment. For instance, BCCSAP and NAP recommend climate-resilient crops and diversification of livelihoods, while LAPA translates such strategies into local action. Delta Plan 2100 also emphasizes economic adaptation but lacks intersectional framing.

Poverty / Class

NAP, **BCCSAP**, and **LAPA** adequately acknowledge poverty and socio-economic class as key determinants of vulnerability. For example, **NAP** incorporates this through targeted subsidies and a proposed Climate Resilience Fund (CRF) while **LAPA** links poverty to localized vulnerability mapping. **NAPA** and **Delta Plan**, however, only make brief, non-operational mentions of poverty as a generic risk factor.

Intersectionality Explicit

Most documents do not explicitly use the term "**intersectionality**". **NAP (2022)** comes closest by acknowledging how gender, disability, and geographic location interact to deepen vulnerability, although without using the term directly. Thus, it receives a partial mark. Other documents including **NAPA**, **BCCSAP** and the **Delta Plan** fail to explicitly or implicitly address intersectional frameworks. **LAPA** shows growing awareness by linking geographic, economic, and gender vulnerabilities at the local level.

Participation and Voice

NAP and **LAPA** include structured strategies for participatory governance, such as involving women, disabled persons, and local actors in decision-making. In contrast, **BCCSAP** and **NAPA** make only symbolic references to inclusion, with no clear mechanisms or guidelines. The **Delta Plan** also lacks participation strategies for marginalized populations.

Monitoring Inclusion

Monitoring and evaluation (M&E) systems regarding social inclusion remain notably absent in almost all documents. Only **NAP** suggests limited frameworks to assess the inclusion of vulnerable groups. Other policies, especially **NAPA**, **BCCSAP**, and the **Delta Plan**, do not offer indicators, targets, or feedback mechanisms to track progress in social or intersectional inclusion. **LAPA** presents more promise, as local actors often adapt strategies based on field realities yet systemic M&E remains insufficient.

Integrating Perspectives: Bridging Qualitative and Quantitative Insights

While the preceding document analysis revealed the extent to which national and local adaptation policies address—or overlook—intersectional dimensions, it is equally critical to examine how these policies manifest in lived experiences and community perceptions. To enrich and contextualize the policy findings, this section integrates empirical insights gathered through Key Informant Interviews (KIIs) and structured household surveys conducted in Shyamnagar Upazila.

Respondents' Profile

A total of 70 respondents participated in the structured survey conducted in Shyamnagar Upazila, all of whom provided complete demographic data. The average age of participants was approximately 61.5 years, with ages ranging from 38 to 82, reflecting the inclusion of older and potentially more climate-experienced individuals. The sample demonstrated a relatively balanced gender distribution, with 57.1% identifying as male (n=40) and 42.9% as female (n=30). In terms of disability status, 38.6% (n=27) of respondents self-identified as persons with disabilities, highlighting a significant representation of marginalized voices in the study.

Occupationally, the participants represented a cross-section of livelihood groups common in climate-vulnerable coastal regions. Day laborers comprised the largest category (32.9%), followed by fishers (28.6%), and individuals engaged in small businesses and farming (each 8.6%). An

additional 21.4% reported engagement in other occupations, which included informal work and household labor. The demographic and occupational diversity in this sample provides an inclusive foundation for analyzing how different social identities intersect to shape vulnerabilities and adaptation experiences in the face of climate change.

Table 2: *Demographic and occupational characteristics of survey respondents (N = 70).*

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	40	57.1
	Female	30	42.9
Disability Status	Without disabilities	43	61.4
	With disabilities	27	38.6
Occupation	Day laborer	23	32.9
	Fisher	20	28.6
	Other	15	21.4
	Farmer	6	8.6
	Small business	6	8.6
Age (Years)	Mean	61.53	—
	Range (Min–Max)	38–82	—

Limited Consultation and Perceived Exclusion in Adaptation Planning

The data reveal a significant disparity in consultation practices preceding the implementation of climate adaptation programs. Only 30% of surveyed respondents (n = 21) reported being consulted prior to program commencement, while the vast majority (70%) indicated that they had not been consulted. Disaggregated by gender, 35% of male respondents and just 23.3% of female respondents acknowledged prior consultation. The disparity is even more stark among respondents with disabilities—only 18.5% reported being consulted, compared to 37.2% among those without disabilities. These findings point to systemic barriers in participatory processes, particularly for women and persons with disabilities, who are not only disproportionately affected by climate risks but also structurally excluded from decision-making processes.

Insights from Key Informant Interviews (KIIs) reinforce the survey results, illustrating that consultation often exists in form but not in substance. Local government officials admitted that consultations are largely symbolic, with decisions typically finalized before any engagement occurs. NGO representatives emphasized that without civil society advocacy, marginalized voices are often overlooked. Members of vulnerable groups expressed frustration at their consistent exclusion. For instance, one female respondent with a disability stated, *“They build embankments and shelters, but never ask us where it is most needed. We are treated as recipients, not as partners.”* Such narratives illustrate a policy-to-practice gap wherein national frameworks like the NAP and LAPA endorse inclusive governance, yet community experiences expose limited accountability and participation. Overall, the convergence of qualitative and quantitative evidence underscores the need for more robust and intersectional consultation mechanisms that go beyond tokenism and actively empower marginalized populations in climate adaptation governance.

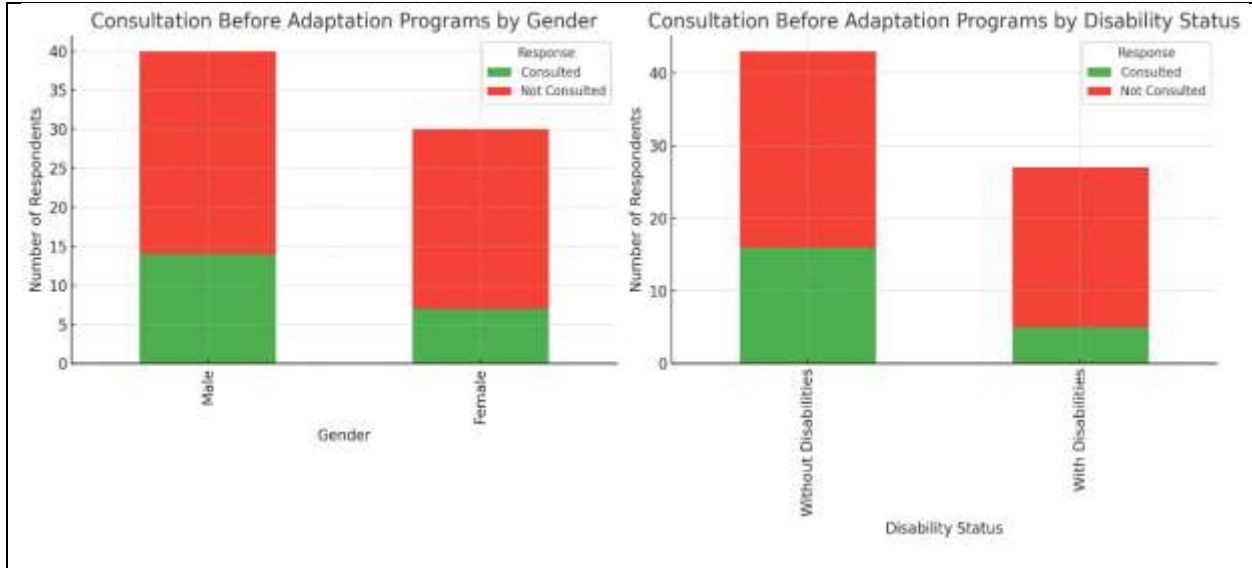


Figure 3. Consultation before adaptation program implementation by gender and disability status. The figure illustrates disparities in participatory inclusion, with male and non-disabled respondents more likely to report being consulted than female and disabled participants.

Disability-Based Differences in Perceived Program Inclusivity

To assess whether disability status influences perceptions of inclusivity in climate adaptation programs, a chi-square test of independence was conducted. The test examined respondents’ views on whether these programs consider individuals facing multiple, intersecting vulnerabilities, such as being poor, elderly, and female. Among respondents without disabilities, 51.2% believed these intersectional challenges were acknowledged by adaptation efforts. In contrast, only 29.6% of respondents with disabilities shared that view. Although the statistical association did not reach conventional significance ($\chi^2(2, N = 70) = 4.40, p = .111$), the effect size (Cramér’s $V = .251$) indicated a small-to-moderate relationship between disability status and perceptions of inclusivity.

While the quantitative test alone does not confirm a significant association, the qualitative data offer critical insight into the experiential gap faced by individuals with disabilities. Interviews revealed deep-rooted feelings of exclusion, often stemming from systemic barriers that hinder meaningful participation. Several respondents pointed to the absence of consultation or invitation in program planning: *“I don’t think they, the program organizers, even know we exist. They invite the village leaders, but never ask us how we cope. How will they know what we need if they never ask?”*— Key Informant Interview, Woman with physical disability, Shyamnagar

This comment illustrates a broader problem of invisibility. Accessibility challenges were also recurrent themes: *“Meetings are held in places we cannot go. There’s no ramp, and we’re not given any transport. So, we just hear about it later.”*— KII, Male respondent with mobility impairment, Koira. Even in cases where individuals with disabilities managed to attend community meetings, many felt marginalized or ignored in discussions: *“Even when I attend, no*

one listens. They let me sit, they nod, but then they do whatever they already planned.”— KII, female respondent with visual impairment.

Demographic Variations in Satisfaction with Adaptation Support

This theme synthesizes insights from multiple analyses to explore how satisfaction with climate adaptation programs varies across gender, disability status, and occupational categories. Although the statistical significance levels were not always strong, descriptive patterns and lived experiences provide valuable interpretive depth.

Gender-Based Differences in Satisfaction with Adaptation Support

Quantitative analysis revealed no statistically significant difference in satisfaction levels between male and female respondents. Males reported a slightly higher mean satisfaction score ($M = 2.65$, $SD = 0.77$) than females ($M = 2.57$, $SD = 1.17$), though the mean difference was marginal (0.08). Levene’s test for equality of variances was significant ($p = .005$), leading to the use of results from the "equal variances not assumed" row. The wide confidence interval (-0.410 to 0.576) further supports the interpretation that gender does not strongly influence satisfaction levels in a statistically robust way.

However, while the numeric results suggest a neutral effect, the qualitative narratives paint a more complex and emotionally textured picture, especially regarding women's lived experiences. *“Most programs don't ask what we need. They assume water or food, but many of us want safer shelter, or access to loans to recover our livelihoods.”— KII, middle-aged woman, Shyamnagar.* This quote underscores a disconnect between perceived needs and delivered support which likely influences varying satisfaction levels among female respondents. In interviews, women frequently emphasized lack of consultation, neglect of intersectional challenges, and gender-blind program design as core sources of discontent. One female key informant, a local women's rights advocate, noted: *“Programs come with promises, but rarely involve us in decisions. Men attend the meetings, and the programs are designed around their feedback. We are told after everything is finalized.”* — KII, female NGO worker, Shyamnagar. In contrast, some females respondents did express appreciation for specific support mechanisms, particularly when NGOs ensured gender-sensitive delivery: *“During the last flood, we received sanitary kits and food from an NGO. That time, I felt they thought about women’s needs.”* — KII, female NGO worker, Shyamnagar.

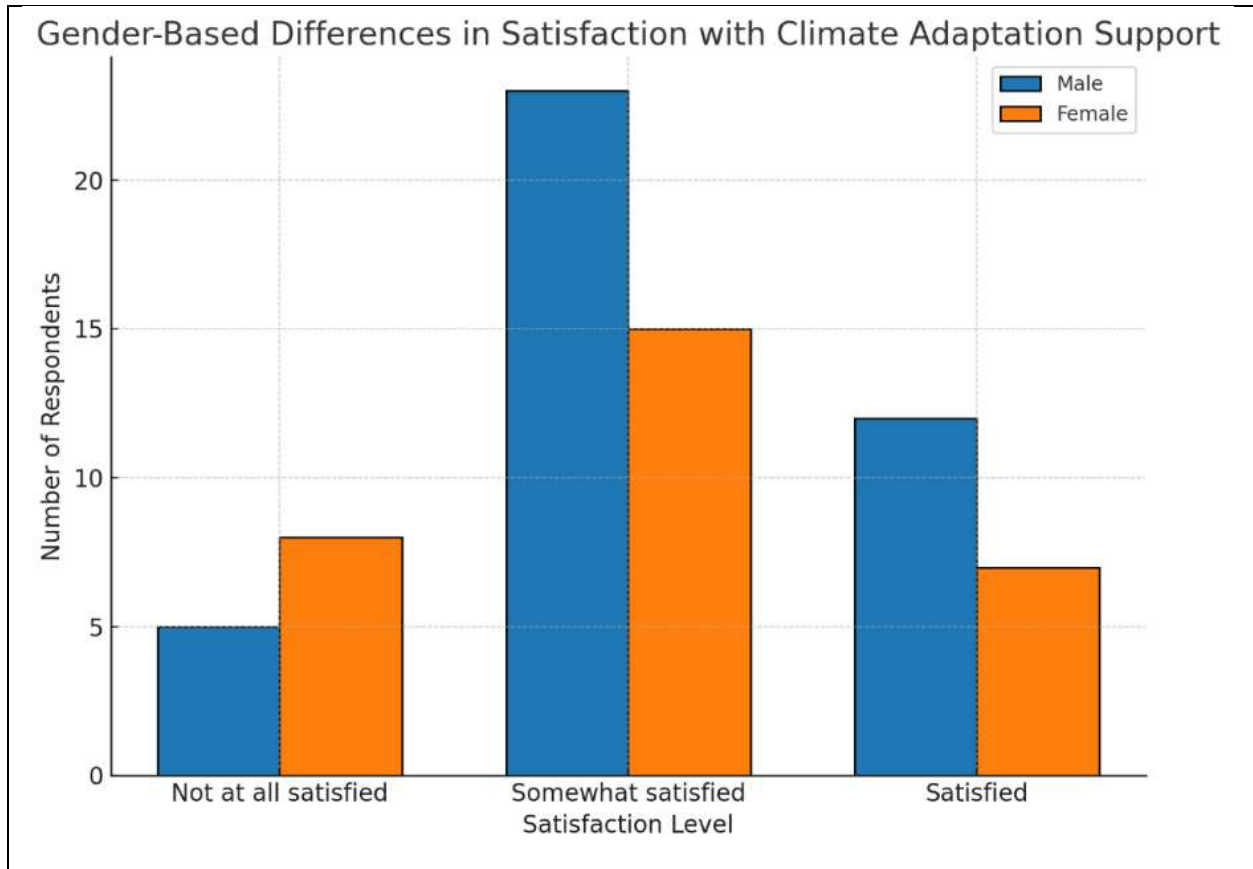


Figure 4: Bar chart showing gender-based differences in satisfaction with climate adaptation support. While mean satisfaction levels were slightly higher among male respondents, the independent samples *t*-test revealed no statistically significant difference between genders ($t(47.32) = 0.340, p = .735$).

Disability Status and Satisfaction Distribution Patterns

Descriptive statistics reveal a notable disparity in satisfaction levels between respondents with and without disabilities regarding local climate adaptation programs. Among individuals with disabilities, 22.2% reported being "not at all satisfied," compared to only 4.7% among those without disabilities. Additionally, the proportion of respondents expressing any level of satisfaction ("satisfied" or "very satisfied") was lower among people with disabilities (11.1%) than their counterparts without disabilities (13.9%).

Although a formal chi-square test was not applied to this distribution, the contrast in satisfaction patterns is meaningful when interpreted through a procedural justice lens. These findings suggest that people with disabilities may perceive adaptation initiatives as insufficiently inclusive or responsive to their specific needs.

While the quantitative disparities are evident, the qualitative data offer deeper insight into the lived realities and persistent barriers experienced by persons with disabilities. Key themes that emerged from interviews) include: *"When they call for meetings, I never get the message. It's like people like us don't exist for them."* — Key Informant Interview, middle-aged woman with physical

disability, Shyamnagar. Respondents frequently described being excluded from the planning phases of adaptation efforts. The lack of intentional outreach or communication reinforces their invisibility and limits their ability to shape interventions that directly affect their lives. *"Even if I want to go, the school where they hold meetings has stairs. I use crutches. So, I just don't go."* — KII, male respondent with post-polio paralysis, Shyamnagar. Besides, structural and environmental limitations such as inaccessible venues and a lack of transport consistently hinder participation, reinforcing the perception that programs are not designed with their inclusion in mind. *"They say they want to hear from everyone, but when I speak, they just smile and move on to the next person."* — KII, Female respondent with visual impairment, Shyamnagar. Even when present, respondents with disabilities often reported feeling dismissed or unheard. Such experiences of symbolic participation undermine trust and satisfaction with program outcomes. *"They gave out food packages during floods, but I needed medicine and a walking stick. What's the use?"* — KII, elderly male with disability, Shyamnagar.

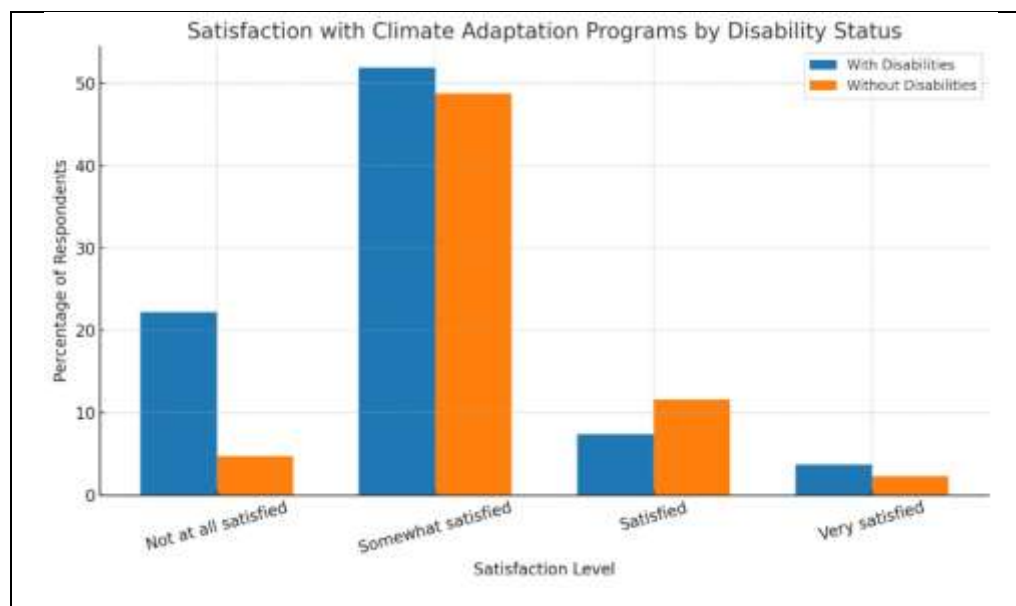


Figure 5. Satisfaction with climate adaptation programs among respondents with and without disabilities. Percentages reflect the distribution of satisfaction levels across the two groups, indicating notably higher dissatisfaction among individuals with disabilities.

Occupational Influence on Satisfaction with Adaptation Support

The statistical results suggest that occupational background does not significantly influence satisfaction levels with adaptation programs. Respondents from all occupational groups such as farmers, fishers, day laborers, small business owners, and others expressed similarly moderate to low satisfaction, with no group standing out as significantly more or less satisfied. Despite this statistical uniformity, qualitative data from Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) in Shyamnagar revealed subtle occupational nuances that the survey could not fully capture.

Many respondents expressed frustration that adaptation interventions are not tailored to their unique occupational vulnerabilities. “The flood-damaged fields were never restored. They gave us

water tablets and leaflets instead of helping us plant again.”— *KII, Male Farmer, Gabura Union, Shyamnagar*. For farmers, the biggest concern was the loss of fertile land due to saline intrusion, and they were dissatisfied that adaptation efforts focused more on short-term relief than long-term agricultural recovery. Fishers, particularly those who rely on open-water fishing or shrimp cultivation, often felt their knowledge and experience were ignored during project planning. “They built embankments that blocked the canals we use to release shrimp water. Now our ponds overflow and we lose the crops.” — *KII, Shrimp Farmer and Fisher, gabura Union, Shyamnagar*. Day laborers reported being last in line for aid distribution, and felt that their lack of political or social connection left them voiceless. “The same few families get help every time. We wait the whole day, and then they say come back tomorrow. But tomorrow never comes.” — *KII, Female Day Laborer, Padmapukur Union, Shyamnagar*. Similarly, small business owners expressed concern about reduced consumer activity during floods or cyclones. “When the roads go underwater, no one comes to the bazaar. My shop stays open but there’s no business. Government and NGOs don’t think about that.” — *KII, Shop Owner, Shyamnagar Sadar*.

Table 3: Tukey HSD Post Hoc Comparison of Satisfaction with Adaptation Programs Across Occupational Groups.

Multiple Comparisons						
Dependent Variable: Overall, how satisfied are you with the support you receive from these programs?						
Tukey HSD						
(I) What is your main occupation?	(J) What is your main occupation?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Farmer	Fisher	-.150	.454	.997	-1.42	1.12
	Day labor	-.152	.447	.997	-1.41	1.10
	Small Business	.167	.564	.998	-1.41	1.75
	Other	-.167	.472	.997	-1.49	1.16
Fisher	Farmer	.150	.454	.997	-1.12	1.42
	Day labor	-.002	.298	1.000	-.84	.84
	Small Business	.317	.454	.956	-.96	1.59
	Other	-.017	.333	1.000	-.95	.92
Day labor	Farmer	.152	.447	.997	-1.10	1.41
	Fisher	.002	.298	1.000	-.84	.84
	Small Business	.319	.447	.953	-.94	1.57
	Other	-.014	.324	1.000	-.92	.89
Small Business	Farmer	-.167	.564	.998	-1.75	1.41
	Fisher	-.317	.454	.956	-1.59	.96
	Day labor	-.319	.447	.953	-1.57	.94
	Other	-.333	.472	.954	-1.66	.99
Other	Farmer	.167	.472	.997	-1.16	1.49
	Fisher	.017	.333	1.000	-.92	.95
	Day labor	.014	.324	1.000	-.89	.92
	Small Business	.333	.472	.954	-.99	1.66

Discussion

This study critically examined the perceived inclusivity and effectiveness of climate adaptation programs in one of Bangladesh's most climate-vulnerable region, Shyamnagar. Drawing on a mixed-methods approach, the research explored variations in satisfaction levels among different social groups, including by gender, disability status, and occupation. The findings highlight both convergence and divergence across demographic lines, revealing underlying equity challenges within adaptation governance.

Gendered Perceptions of Satisfaction

The statistical results revealed no significant gender-based difference in satisfaction with adaptation support $t(47.32) = 0.340, p = .735$. However, qualitative narratives introduced nuance. While mean satisfaction levels were similar between men and women, the emotional intensity of women's responses was notably higher. Several female participants described feelings of both strong disillusionment and appreciation, depending on the alignment of support with their household roles and caregiving burdens. This duality aligns with existing literature emphasizing the differentiated experiences of climate impacts and adaptive responses among women in the Global South (Arora-Jonsson, 2011). The finding supports the argument that gender analyses must go beyond binaries and averages, considering qualitative depth to understand subjective well-being in climate resilience programming.

Disability and Structural Exclusion

The most profound disparities emerged in relation to disability status. Individuals with disabilities reported significantly higher dissatisfaction (22.2%) compared to those without disabilities (4.7%), with a markedly lower proportion expressing satisfaction (11.1%). Although the chi-square test for inclusivity perceptions did not reach statistical significance ($\chi^2(2) = 4.40, p = .111$), the effect size (Cramér's $V = .251$) suggested a small-to-moderate association. These quantitative results were substantiated by qualitative narratives, which pointed to systematic procedural exclusion, including physical inaccessibility, lack of inclusive communication, and tokenistic consultation (Garcia & Tschakert, 2022b; Gaskin et al., 2017). Quotes from participants illustrated a broader climate injustice experienced by disabled individuals where adaptation programs were not only physically inaccessible but also socially unresponsive to their lived needs. These findings resonate with the literature on intersectional climate vulnerability, which argues that disability often intersects with other forms of marginality, such as poverty and age, to compound exclusion from governance (Kaijser & Kronsell, 2014).

Occupational Uniformity and Policy Design Gaps

Contrary to expectations, occupational background did not significantly influence satisfaction with adaptation support ($F(4, 65) = 0.171, p = .952$). Post hoc analyses confirmed the absence of meaningful differences across livelihood groups. While occupations like fishing and farming are typically viewed as highly climate-sensitive the uniformity in satisfaction levels across groups suggests either a homogenization of experiences or a programmatic failure to tailor interventions based on livelihood-specific vulnerabilities (Hoque et al., 2018). Qualitative insights from fishers and day laborers in Shyamnagar further revealed a sense of resignation rather than satisfaction, with adaptation support often perceived as symbolic rather than transformative. This echoes critiques of "one-size-fits-all" approaches in climate policy, where lack of contextualization may produce shallow impacts despite wide program reach (Md. M. Islam, Hasan, Mimpa, et al., 2025b). Without greater alignment between livelihood strategies and program benefits, perceived satisfaction may remain limited, even in the absence of explicit discontent.

Toward Inclusive Adaptation Governance

Together, these findings reinforce the necessity of embedding equity within the procedural and distributive dimensions of adaptation governance. While climate resilience programming in Bangladesh has expanded over the past decade via instruments like the Bangladesh Climate Change Strategy and Action Plan (MoEF, 2009) and the National Adaptation Plan (MoEFCC, 2022) (Md. M. Islam, Hasan, Mimpa, et al., 2025b). This study reveals gaps in practice, particularly around stakeholder consultation and differentiated need recognition. Programs must move beyond the rhetoric of vulnerability to institutionalize mechanisms that ensure marginalized voices especially those of women and persons with disabilities are meaningfully included in all stages of adaptation design and implementation. This requires not only physical infrastructure upgrades but also the transformation of institutional culture and capacity, as emphasized by scholars of inclusive development (Amorim-Maia et al., 2022; Hoque et al., 2018).

Limitations and Future Research Directions

Although this study is offering critical insights into intersectional inclusion in climate adaptation governance, it has some limitations. Geographically, it was only confined to Shyamnagar sub-district, though severely climate-affected, which may limit the generalizability of findings across other socio-ecological zones of Bangladesh. The relatively small sample size ($N = 70$) and cross-sectional research design restrict the statistical power to detect subtle associations and hinder the observation of temporal changes. The study predominantly focused on gender and disability as axes of analysis, thereby overlooking other vital dimensions of marginalization such as ethnicity, age, caste, and sexual orientation. Additionally, data collected were based on self-reports, which, although rich in subjective insight, are susceptible to recall inaccuracies and social desirability bias. Moreover, a lack of triangulation with government or institutional records further constrains the empirical validation of reported exclusionary practices.

To address these limitations and expand the current understanding of intersectionality in adaptation governance, future research should adopt broader and more comparative geographical scopes.

Longitudinal or panel studies would be beneficial for tracking changes in participation and satisfaction over time. In addition, expanding the intersectional lens to include groups such as religious minorities, indigenous populations, landless people could reveal new dimensions of exclusion and opportunity. Methodologically, mixed-methods research that integrates ethnographic fieldwork, institutional policy audits, and participatory approaches would provide a more holistic perspective on governance practices. Future work should also consider political economy factors including power relations, donor influence, and bureaucratic inertia that affect the translation of policy into practice.

Conclusion

This study critically examined the extent to which intersectionality is integrated into climate adaptation governance in Shyamnagar which is one of the most climate-vulnerable regions in Bangladesh. By employing a mixed-methods approach which is comprising document analysis, key informant interviews and a structured survey, the research revealed a significant policy-to-practice gap in addressing the needs of multiply marginalized groups. While national and local adaptation policies frequently articulate commitments to inclusion and equity, their practical implementation often fails to reflect such commitments. Particularly concerning is the systemic exclusion of persons with disabilities, women, and other vulnerable populations from consultation processes, benefit distribution, and program design.

Quantitative analyses demonstrated that respondents with intersecting vulnerabilities such as gender and disability were more likely to express dissatisfaction with adaptation programs and perceive them as insufficiently inclusive. Although some statistical tests did not reach conventional significance, the effect sizes and consistent qualitative narratives reinforce the conclusion that procedural equity remains a serious governance shortfall. The voices of marginalized individuals often rendered invisible in adaptation discourse that underscored the urgency of adopting inclusive, participatory, and context-responsive strategies.

In sum, this research highlights that integrating intersectionality into adaptation governance is not merely a normative goal but a functional imperative to enhance resilience outcomes. Bridging the policy-to-practice divide requires more than policy rhetoric which necessitates institutional reform, inclusive program design, and the dismantling of structural. Without such efforts, adaptation initiatives risk perpetuating, rather than alleviating, existing social inequalities in the face of climate change.

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