

**Community Perceptions and Coping Strategies in the Face of Climate-
Induced Disasters: A Case Study in the Barguna District**

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This Thesis Report Presented in Partial Fulfilment of the Requirements
for the Degree of Bachelor of Science (B. Sc) in Environmental Science
and Disaster Management (ESDM)

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DHAKA, BANGLADESH

March 2024

APPROVAL



This thesis report titled “**Community Perceptions and Coping Strategies in the Face of Climate-Induced Disasters: A Case Study in the Barguna District**”, submitted by **Md Mahir Daiyan** to the Department of Environmental Science and Disaster Management (ESDM), Daffodil International University (DIU), has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science (B.Sc.) in Environmental Science and Disaster Management (ESDM) and approved as to its style and contents. The presentation has been held on 6th April of 2024.

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DECLARATION

I hereby declare that this research project has been done by me under the supervision of **Dr. A. B. M. Kamal Pasha, Ph.D., Professor and Head, Department of Environmental Science and Disaster Management (ESDM)**, Daffodil International University (DIU). I also declare that neither this research project nor any part of this research project has been submitted elsewhere for the award of any degree.



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DEDICATION

To,

my loving parents

Md Bengir Ahmed
Mst. Moselema Pervin

My Loving Elder Sister

Lubna Jahan

my respected teachers

Dr. A. B. M. Kamal Pasha, PhD

Dr. Mahfuza Parveen

Md. Azharul Haque Chowdhury

S. M. Mahmudur Rahman

Sagar Mozumder

Syed Nazmus Sakib

Sadia Sikder

and

*to the loving memory of my beloved seniors, juniors, coordination officers and staffs
from the **Department of Environmental Science and Disaster Management**
(**ESDM**), **Daffodil International University (DIU)** with whom I spent a single second
of my undergrad life in last four year (2nd January 2020 to 15 December 2023).*

ACKNOWLEDGEMENT

This thesis is a manifestation of not only my efforts but the support and guidance of several individuals. At the outset, I extend my deepest gratitude to the Divine, whose blessings have been ceaseless, providing me with the strength, wisdom, and determination required to pursue and fulfill this academic endeavor.

My profound appreciation goes to Dr. A. B. M. Kamal Pasha Ph.D., Professor and Head, Department of Environmental Science and Disaster Management (ESDM), Daffodil International University (DIU), whose outstanding mentorship, extensive expertise, and perceptive direction underpinned this research. His encouragement and professional suggestions shaped this thesis's direction and content.

I am also grateful to Dr. Mahfuza Parveen, Associate Professor at the Department of Environmental Science and Disaster Management (ESDM), Daffodil International University (DIU) for her guidance, support, and motivation.

Special appreciation to the Global Law Thinkers Society (GLTS), Barguna District Team, for your unparalleled data collection support. The consistent support at Barguna from my elder brother and GLTS COO, Adv Mahin Meherab Aunik, was invaluable. Additionally, my gratitude extends to the Honorable President of GLTS, Raoman Smita, for her encouragement and motivation.

I am grateful to Syed Nazmus Sakib sir for providing a thorough plan, providing help at any time, and motivating me throughout my thesis journey.

I cannot fail to mention my beloved junior, Abdullah Al Mamun, whose companionship and assistance in data collection have been invaluable. It would be remiss not to acknowledge the faculty members whose knowledge and expertise have greatly enhanced my understanding and perspective on the subject.

Finally, my family and friends deserve my deepest gratitude. Their unwavering support, understanding, and encouragement have sustained me.

For everything I am eternally grateful to almighty Allah.

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ABSTRACT

Barguna is a district in Bangladesh known for its abundant natural resources, yet it is also susceptible to natural calamities. Annual natural disasters result in significant devastation in this region. The increase in disasters is mostly due to the negligence and lack of knowledge among the general population. The government is providing crucial assistance and resources to handle the situation, regardless of the fluctuating severity of the calamity. Assessing individuals' acceptance is challenging. This is a crucial matter. Utilizing indigenous coping mechanisms can be advantageous in this scenario. The study analyzes the viewpoints of the local population toward natural disasters, challenges, and the present crises. An attempt has been made to clarify the current dire position in comparison to the past. The local coping methods are thoroughly analyzed. Our findings will lay the groundwork for future research aimed at developing a sustainable and resilient disaster response system. This device will alert people and protect the area from calamities caused by human actions. The study highlights the importance of education and knowledge about environmental and catastrophe management. Enforcing these steps will ensure that the next generation is properly prepared with the necessary information and procedures to handle disasters. In the end, the occurrence of natural disasters will diminish, and individuals will be better equipped to handle the aftermath of these catastrophes. Reducing the harm will protect the country from financial losses.

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CHAPTER 1: INTRODUCTION

1.1. Background and Context

The Barguna District in Bangladesh is extremely susceptible to climate-related calamities, especially cyclones and tidal surges (Majumder et al., 2017; Rana et al., 2010). The district's vulnerability to these dangers is worsened by factors including inadequate understanding, absence of adaptation technologies, and inadequate response from the local population (Majumder et al., 2017). Remote sensing and GIS technology were utilized to evaluate the susceptibility of people and infrastructure in the district and create a disaster planning and management model (Rana et al., 2010). There is a heightened necessity for efficient evacuation plans in the district, especially in the coastal regions (Tamima, 2012).

Understanding how communities perceive and respond to conditions in disaster-prone locations is crucial for effectively mitigating disaster risks (Bali, 2022). Understanding this subject is influenced by factors such as education, experience, and cultural ideas (Khan et al., 2017; Seyedin et al., 2019). Furthermore, it enhances community resilience by establishing a direct link between risk perception and personal experience (Khan et al., 2017; Tsai et al., 2016). Effective communication and dissemination of information are essential in supporting vulnerable groups (Khan et al., 2017). Implementing techniques to enhance risk perception is best achieved through a family-centered approach (Seyedin et al., 2019).

The relationship between climate change and the frequency and severity of natural disasters is a significant concern (Hagon, 2021). Therefore, there is a growing necessity for government intervention to address the problems concerning disaster prevention and response (Lie, 2007). The significance of sustainable development goals and disaster risk reduction methods is underscored, particularly focusing on traditional knowledge, innovation, and education (Mal et al., 2018).

An examination of previous climate-related disasters in the Barguna District, Bangladesh, reveals a significant increase in catastrophic events due to climate change (Dastagir, 2015). The intensification of cyclones, floods, and storm surges in the region is attributed

to rising sea levels and ground subsidence, making the area more vulnerable (Huang & Cheng, 2013). The importance of interdisciplinary approaches to improve comprehension and assist in crisis management is underscored by the impact of storm-induced marine flooding, particularly in vulnerable coastal areas like Barguna. (Chaumillon et al., 2017). The effect of storm surges from cyclones on saltwater intrusion highlights the complex interactions between meteorological factors and their consequences (Akter et al., 2016).

Prioritizing community-centered strategies is crucial for enhancing climate resilience. These methods are crucial for enhancing local capacities and addressing the underlying reasons for vulnerability (Archer, 2016; Ayers & Huq, 2009). Economically disadvantaged populations often lead these measures to boost general resilience by reducing susceptibility to disasters and addressing shortcomings in development (Archer, 2016). However, it is essential to build a coordinated national policy and a specialized resource center for adaptation to support community planners (Deitchman et al., 2021). The structural and socio-cultural aspects of social capital play a crucial role in determining communities' capacity to adjust and endure the effects of climate change (Carmen et al., 2022).

Researching this subject and thoroughly studying coping mechanisms are crucial for averting future natural disasters and reducing their impact. In-depth research findings suggest that mitigating natural disasters might lead to a decrease in human suffering and promote sustainable development.

1.2. Objectives of the Study

1.2.1. Primary Objectives

Examine the community's views on climate-induced catastrophes in the Barguna District and assess the local coping mechanisms used to reduce and adjust to these disasters.

1.2.2. Secondary Objectives

- a. Assess the efficiency of current coping techniques in the Barguna District, evaluating their sustainability and adaptation to possible climatic pattern changes.
- b. Investigate the socio-economic elements in the Barguna District that impact the perception of climate-induced disasters and the choice and execution of coping methods.

1.3. Significance of the study

The Barguna district in Bangladesh is an environmentally fragile area facing multiple dangers. Annually, natural disasters in this area cause significant financial damages for many people. Therefore, it is essential for them to carefully consider the complexities of managing this circumstance. Implementing government-designed procedures and initiatives can effectively address natural disasters. Although it is not possible to completely eliminate natural disasters, recognizing and dealing with the root causes of human-induced natural disasters may help reduce the severity of damage in some cases. Conducting thorough research on this topic is quite significant.

1.4. Study Question

- a. What do people in the Barguna District think about climate-induced catastrophes and what local strategies do they utilize to deal with and adjust to these disasters?
- b. How effective are the current coping mechanisms in the Barguna District in terms of their durability and adaptability to potential changes in climate patterns?
- c. What socio-economic factors in Barguna District influence people's views on climate-induced disasters and their decisions on coping strategies?

1.5. Structure of the Study Report

There are seven (07) distinct chapters in this report on the study endeavor. The sections are:

Chapter 01: Introduction

This chapter gives a summary of the research project. The components include a succinct analysis of the relevance, goals, and background of the research endeavor. This chapter also provides a brief explanation and illustration of the format for this research project report.

Chapter 02: Literature Review

Using a range of research materials and theses as its main information sources, this chapter provides an overview of the study. This chapter is divided into five separate sections.

Chapter 03: Methodology

This chapter explores the methodical approaches utilized in conducting the investigation and offers a thorough understanding of the subject area. There are four primary sections to this chapter.

Chapter 04: Case Study 1 (Community Perceptions of Climate-Induced Disasters: A Comparative Study Across Age Groups in the Barguna District)

We aimed to determine individuals' perception of our research issue in this part of the investigation. We have focused on elucidating the notions and distinctions among individuals of varying age groups. Summary This section focuses on the frequency and severity of natural catastrophes in Barguna, as well as the perceptions of the local population.

Chapter 05: Case Study 2 (Assessing the Efficacy of Local Coping Strategies Against Climate-Induced Disasters in the Barguna District)

In this chapter, coping strategies that local people in Barguna have developed and the effectiveness of those tactics are discussed. In this part of the research, information was gathered from a variety of locations in Barguna, and then it was processed and presented.

Chapter 06: Synthesis Of Research Findings

In this study, we examine a number of different data sets in addition to two case studies. By the end of this chapter, we have a comprehensive understanding of the natural disaster situation in Barguna as well as the current coping measures that are being utilized.

Chapter 07: Recommendation & Conclusion

In the final chapter of the study, we wanted to summarize the main findings from the literature review, data collection, data analysis, results, and comments. We also tried to justify the study's goals. Guidelines are given to help researchers improve their understanding of upcoming investigations.

1.6. Conclusion

When we take into account all of the facts and the current scenario, we see that the current situation in Barguna, as well as the pre-disaster and post-disaster contexts, are highly essential for the economic state of the country. The failure to do an accurate assessment might result in enormous losses, which the average people of Barguna have already experienced. Because of this, it is of the utmost importance to conduct a situation analysis in order to prepare for coping with the aftermath of a disaster and to also take preparations before the disaster occurs. Therefore, this connected study is highly significant for our country and the issues that our country is facing economically.

CHAPTER 2: LITERATURE REVIEW

2.1 Climate-induced Disasters and their Impact on Communities

Climate change-induced disasters can significantly affect communities in terms of their susceptibility and ability to recover from them. Regarding the consequences of such disasters, (McSweeney & Coomes, 2011) highlights the potential for institutional transformation and enhanced land allocation., whereas (King, 2010) stresses the importance of adaptive measures that are flexible and community-oriented. According to (Shaw et al., 2010), the significant influence of climate change on grassroots communities is emphasized, along with the necessity of creating new policies and procedures to support these individuals. The studies emphasize the intricate and multifaceted effects of climate-induced disasters on communities, underscoring the importance of addressing these impacts in a holistic and community-centered manner.

Climate-induced catastrophes have significant social ramifications on rural communities, affecting their development, livelihoods, and strategies for dealing with the disaster's effects, as stated by (FARADIBA & ZET, 2020). According to (McSweeney & Coomes, 2011), the consequences might be negative, like damaged livelihoods and disrupted communities, or positive, as seen in a Honduran community that turned a tragedy into an opportunity for institutional change.

(Wood, Ms & Frazier, PhD, 2021) and (Ibarrarán et al., 2009) emphasize that climate-induced disasters, exacerbated by climate change, have significant economic impacts on communities, particularly those already vulnerable owing to poverty and other social challenges. (Ruth & Ibarrarán, 2009) highlights the unequal distribution of these effects, particularly impacting groups such as women, youth, elderly individuals, and ethnic minorities to a greater extent. (Botzen et al., 2019) shows that increasing financial losses from natural disasters emphasize the necessity of enacting efficient strategies to mitigate their effects.

There is growing concern about the impact of climate-induced disasters on communities, highlighting the need for effective adaptation and mitigation plans to be put in place urgently. (King, 2010) underscores the need of community-based adaptation, stressing the necessity of flexibility, local engagement, and stakeholder-driven strategies. (Boswell

et al., 2012) stresses the significance of adaptability and doing a comprehensive evaluation of the possible impacts of climate change in a particular region. (Runkle et al., 2018) highlights the necessity of developing quantitative disaster epidemiology tools to aid public health professionals in efficiently preparing for and responding to weather-related disasters. The studies emphasize the significance of utilizing community-driven, adaptive, and tailored techniques to effectively address the problems posed by climate-induced disasters.

(Kisinger & Matsui, 2021) indicates that the management of climate-induced displacement in Bangladesh has mostly utilized a top-down strategy, with minimal participation from local populations and insufficient attention to their requirements. (Parvin & Johnson, 2015) criticize this strategy for prioritizing physical adaption measures while neglecting the root reasons of vulnerability. (Dastagir, 2015) points out that the increasing frequency and intensity of extreme weather occurrences in Bangladesh due to climate change emphasize the urgent need to address these issues.

(Rahman et al., 2023) states that the cyclone has had an impact on Barguna, Bangladesh.

Name of cyclones	Impact	Source
Cyclone Yaas (2021)	Significantly affected	Bangladesh: Cyclone YAAS (2021) IFRC
Cyclone Amphan (2020)	-Caused minor damage to 263 hectares of land. -Severely ravaged 107 hectares of land	TBS Report 2020
Cyclone Roanu (2016)	-Impacted a total of 4960 households.	Ahmed et al. 2016
Cyclone Mahasen (2013)	-7 died -57% of agricultural land affected	Tropical Storm Mahasen: HCTT Phase 1 Joint Needs Assessment in Bhola, Barguna and Patuakhali Districts 2013

	-7000 homes were severely damaged. -60,000 homes were damaged in part.	
Sidr (2007)	-Died 1335 individuals -1,119.89 square kilometres of destruction -Ruined crop 60–70%	Tamima 2009

2.1.1 Barguna City: Geographical and Environmental Context

Barguna City's geographical and environmental conditions are influenced by a range of causes, both local and regional. (Hassan, 2017) stated that urban growth has led to a reduction in arable land and vegetation cover, along with an increase in impermeable surfaces. (Barkat Ali et al., 2014) found that the socio-economic status of the city has an extra impact on its environmental condition, which is now at a moderate level and needs improvements in urban amenities. (Chowdhury, 2004) emphasizes that the city's location in a low-lying, flat terrain heightens its vulnerability to natural calamities. This highlights the need of environmental planning in guaranteeing long-term sustainability.

2.1.2 Types of Climate-induced Disasters in the Region

Barguna city in Bangladesh is very vulnerable to many climate-related disasters including cyclones, tidal surges, floods, saline intrusions, and droughts as documented by (Rana et al., 2010, Dastagir, 2015, Kabir & Khan, 2016, Mojid, 2020). Climate change exacerbates the spread of infectious diseases, resulting in dehydration, malnutrition, and heat-related illnesses, posing a threat to the health of coastal populations (Kabir & Khan, 2016). The problems are worsened by the expected rise in temperature, changes in rainfall patterns, and the increase in sea levels, all of which would significantly impact food security, poverty reduction, and sustainable development in the area (Mojid, 2020).

2.2 Public Perspectives on Climate-Induced Disasters

Community perceptions of climate-induced disasters vary based on characteristics like faith in climate change communication, geographical location, and awareness of climate change (Boon, 2016). Perceptions can influence community resilience by affecting awareness of tourism's implications in disaster-prone areas (Tsai et al., 2016). Despite awareness of climate change and its potential consequences, many communities have not put adaptation methods into practice (Nehren et al., 2011).

2.2.1 Indigenous Wisdom and Cultural Beliefs

Understanding and addressing the hazards of climate-induced disasters in Barguna, Bangladesh necessitates a comprehensive understanding of the ideas and convictions held by the local population (Majumder et al., 2017). The traditional knowledge and traditions of coastal communities have helped them build coping mechanisms and resilience to natural disasters (Haque, 2019). The Barguna community has demonstrated resilience to climate change by adjusting their lifestyle and creating strategies to mitigate its impacts (Anik & Khan, 2012). The community struggles to address the impacts of climate change, mostly because of a lack of knowledge and uncertainty, even if they depend on traditional wisdom (Rakib et al., 2019).

2.2.2 Risk Perception and Communication

The research by (Majumder et al., 2017; Saha, 2015; Sarkar & Padaria, 2010; ur-Rahman et al., 2011) highlights the complex relationship between risk perception and communication on climate-induced disasters in Barguna, Bangladesh. Despite the more frequent and intense occurrences of disasters such as cyclones, tidal surges, floods, and saline intrusion, there is a lack of recognition of the heightened risk due to climate change (ur-Rahman et al., 2011). These calamities are exacerbated by extreme weather conditions, disaster-prone locations, and insufficient public services (Saha, 2015). While there is some understanding of climate change and its consequences, there is a need for increased attention on the dangers posed by specific events like cyclones and their potential impact on agriculture, livestock, and human health (Sarkar & Padaria, 2010).

2.3 Coping Strategies Adopted by Communities

Coastal communities in Barguna, Bangladesh have developed several coping techniques to deal with the impacts of climate-induced disasters. Small-scale fishing communities

have demonstrated their capacity to adapt to the effects of climate change using several strategies, such as survival, economic, physiological, social, institutional, and religiosity-psychological means (Deb & Haque, 2017). Communities impacted by Typhoon Aila have utilized specific adaptation strategies such as growing crops that can withstand high saline levels, employing advanced water management systems, and incorporating technology-based shrimp farming (Sultana & Mallick, 2015).

2.3.1 Community-Based Disaster Management

Implementing community-based disaster management in Barguna, Bangladesh is an essential technique to minimize the effects of natural disasters on the local residents (Mohammad & Huq, 2016). The strategy includes engaging the community in disaster risk reduction by utilizing their traditional knowledge and enhancing their ability to get ready for and handle calamities (Habiba et al., 2013). The government has acknowledged the significance of community involvement and has put in place policies to bolster community-centered risk reduction and improve resilience (Azad et al., 2019).

2.3.2 Infrastructure and Technology

The state of infrastructure and technology in Barguna, Bangladesh for disaster management is a significant problem. (Shuvo et al., 2022) highlights the slow pace of the disaster recovery process in the country and stresses the importance of using ICT-based communication solutions to improve response times and data accessibility. (Rana et al., 2010) & (Mallick et al., 2011) highlight the need of utilizing GIS and remote sensing for hazard identification and susceptibility assessment. Yet, they also emphasize the inadequacy of physical infrastructure, especially in coastal areas. The studies highlight the importance of adopting a holistic approach that integrates technology, infrastructure, and community engagement in disaster management in Barguna, Bangladesh.

2.4 The Role of Age in Perceptions and Coping Strategies

An investigation carried out in Barguna, Bangladesh highlighted the significant impact of age on people's perspectives and strategies for dealing with disasters in the field of disaster management. Factors such as age, gender, financial status, and other variables influence how indigenous people cope with challenges (Paul & Routray, 2011). A study in Bogura area found a significant relationship between vulnerability and age in those impacted by river erosion (Akmam et al., 2020). Disasters disproportionately affect

children and families, especially women, who bear a heavier burden of negative consequences.

2.5 Gaps in the Literature

After conducting a thorough examination, it is clear that there are several deficiencies in the field of disaster management in Barguna. There is a disconnect between the average populace and the various premeditated solutions. Although the government has initiated several measures, there is uncertainty about their effective adoption by the public and proper implementation. Our research aims to examine the current situation, analyze its effectiveness, and evaluate its impact on different segments of society. We aim to assess the possible impact that can result from successful formulation.

CHAPTER 3: METHODOLOGY

3.1. Research design

This research aims to explore the community's viewpoints on climate-related disasters in the Barguna District and examine the local coping strategies that have been utilized to mitigate the impact of these calamities and adjust to them. This study assesses the effectiveness of current coping strategies in the Barguna District. This assessment considers the strategies' sustainability and adaptability to expected changes in climatic patterns.

Initially, we selected two case studies for our research. The primary case study aims to fully understand the perception of individuals in this area. We consider it crucial to examine the challenges experienced by the inhabitants and collect their viewpoints in order to create a thorough solution for the natural disasters in this area. We conducted an extensive survey in Case Study 1 to collect perspectives from a variety of individuals across multiple locations with the aim of emphasizing inclusivity. The case study involved Key Informant Interviews (KII) and Focus Group Discussions (FGD).

We have examined the coping mechanisms of persons in this region and assessed their efficacy in case study 2. What actions do people often take before and after a catastrophe, and what survival tactics do they use during the disaster? We used a set of questions in a poll with the general audience to thoroughly develop this case study. We conducted focus group discussions to gather varied information and generate a comparison perspective. We have selected key informant interviewers for this case study and performed a comparison analysis utilizing the data collected from them.

To complete the study, we needed to gather a diverse range of data. Data were collected from the general public using a mix of open-ended and closed-ended questions, which were then analyzed quantitatively and qualitatively. The research employs a mixed methods approach to conduct the analysis.

3.2. Case study 1 - Community Perceptions of Climate-Induced Disasters: A Comparative Study Across Age Groups in the Barguna District

This case study aims to explore how individuals across different age groups in the

Barguna District perceive and think about climate-induced disasters. We collected data for this comparative analysis from regions with varying levels of susceptibility to natural disasters. Typically, there is a possibility of a gap between the government and the citizens. We labeled the government personnel as KII, gathered data from them, and conducted cross-match analysis to identify issues. The focus group discussions conducted in disaster zones aimed to elicit varied opinions from the residents.

Variations in precautions and pre- and post-disaster management exist among persons of different age groups. People in a particular age bracket often overlook safety measures, leading to damage. Specific age groups demonstrate a level of seriousness regarding this subject, leading to reduced harm experienced. Data has been systematically collected for this perception study from individuals of various age groups.

In this case study, data is collected and analyzed based on quantitative and qualitative factors after considering all conceivable outcomes. The results are compared with those of our second case study using comparative analysis to offer a comprehensive overview.

3.3. Case study 2: Evaluating the Effectiveness of Local Coping Strategies Against Climate-Induced Disasters in the Barguna District

We have analyzed the coping techniques of individuals in this case study. This study primarily aimed to analyze the coping strategies employed by the general public to deal with disasters and assess their efficacy. We conducted a poll in multiple sites throughout the region and held focus group talks in those areas. Information is gathered by selecting community leaders and experts.

The study included quantitative and qualitative analysis to evaluate the efficacy of different coping mechanisms. A comparative study was undertaken by juxtaposing its outcomes with those of Case Study 1.

3.4. Data collection method

3.4.1 Study area

The study was conducted over the whole Barguna district. Information was methodically collected from various sites such as villages and towns to guarantee a thorough and precise compilation of diverse data. The places were individually assessed by comprehending the scenario. Data has been collected from many

situational zones to maintain data consistency.

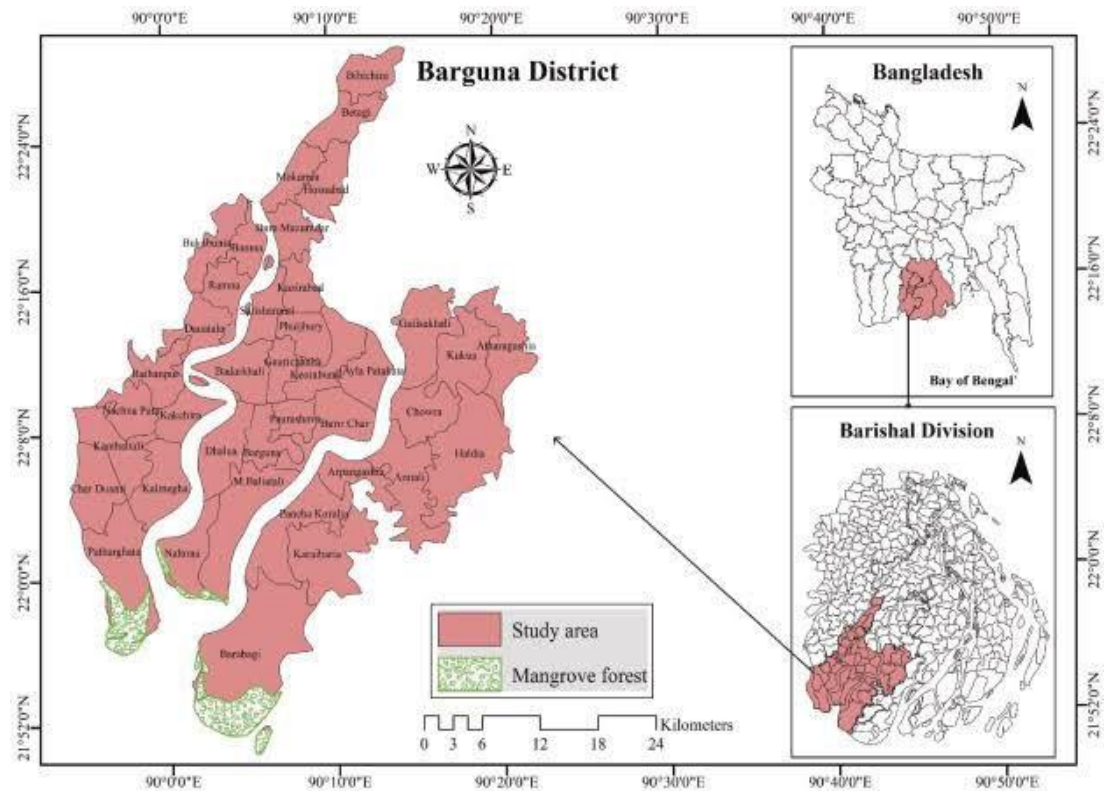


Figure 3-1: Study Area

3.4.2 Sample size

This research presents its findings through two separate case studies. The interconnected perspective of individuals, emphasizing age differences as a significant issue, is highlighted in the first. In case study 1, a survey was conducted on around 200 persons from different age groups. Furthermore, this case study involved conducting 5 focus group discussions and interviews with 10 individuals recognized as experts in the area.

Case study 2 emphasizes the effectiveness of the coping techniques used by ordinary individuals in this region, specifically in the emphasized situation. Approximately 100 participants were surveyed using a detailed questionnaire at this site, in addition to conducting 5 focus group discussions. Ten specialists in the sector, including community leaders and those working for various social groups, were consulted to collect information.

3.5. Period of data collection

The study's data collection approach consisted of a series of subsequent stages. Extensive data collecting was conducted in October and November. The data collection processes included using focus group talks, consulting key informants, and conducting a survey to gather information.

3.5.1 Modality of Data Collection Instruments

Three data gathering approaches were used in this study: a structured questionnaire survey, Key Informant Interviews (KII), and Focus Group Discussions (FGDs) to ensure a comprehensive understanding.

3.5.2 Structured questionnaire



Figure 3-2: Survey

Structured interview timetables are essential in field research to validate the information gathered from primary sources and detailed interviews. 300 structured questionnaire surveys were scheduled to be conducted with individuals who had a comprehensive understanding of this subject, including those classified as A, B, C, D, and others.

3.5.3 Key Informant Interviews (KII)



Figure 3-3: Key Informant Interviewer



Figure 3-4: Key Informant Interviewer

Key informants are usually selected based on their recognized competence in the specific sector. Obtaining the necessary data requires depending on the most reliable

sources of information. A suggestion was suggested to conduct 12 Key Informant Interviews (KII) with people A, B, C, D, and so on. Ten qualitative sample sizes can be sufficient for sampling a population (Sandelowski, 1995).

3.5.4 Focus Group Discussion



Figure 3-5: Focus Group Discussion

Ten Focused Group Discussion (FGD) sessions were conducted in this study. Each focus group discussion (FGD) involved a cohort of 4-6 individuals.

3.6. Sampling strategy

3.6.1 Sampling technique

Three methods of data collection were used in this study: a structured questionnaire survey, Key Informant Interviews (KII), and Focus Group Discussions (FGDs). Stratified random sampling was employed to choose suitable samples for Focus Group Discussions (FGD) and Key Informant Interviews (KII). A stochastic sampling strategy was used to obtain an appropriate sample of survey participants.

3.6.2 Analytical technique

The data was carefully validated and cross-verified after collecting all relevant information. Subsequently, each questionnaire was coded and entered into the SPSS/STATA database. The data from the Focus Group Discussions (FGDs), tape-recorded cassettes, and Key Informant Interviews (KIIs) was carefully edited and transcribed after a detailed analysis. The qualitative analysis involved doing data

calculations using the anthropic sub-program, following a certain category and categorization framework.

3.7. Ethical consideration

Before conducting the interview, we ensured that informed consent was obtained and received ethical approval from the relevant authority. Consent was obtained to record the interview, offer statistics, and share information. The participant is kept anonymous throughout the interview and is regarded as an essential component of the research.

CHAPTER 4: CASE STUDY 1

Community Perceptions of Climate-Induced Disasters: A Comparative Study Across Age Groups in the Barguna District

Table 1: Participant Age and Residency

Category	Subcategory	Frequency	Percent	Valid Percent	Cumulative Percent
Participant Age					
	18-25	28	13.7	14.0	14.0
	26-35	50	24.5	25.0	39.0
	36-45	46	22.5	23.0	62.0
	46-55	34	16.7	17.0	79.0
	56-65	31	15.2	15.5	94.5
	66 and above	11	5.4	5.5	100.0
	Total	200	98.0	100.0	
Missing	4	2.0			
	Total Overall	204	100.0		
Residency in Barguna					
	Less than 5 years	21	10.3	10.9	10.9
	5-10 years	29	14.2	15.0	25.9
	11-20 years	8	3.9	4.1	30.1
	More than 20 years	135	66.2	69.9	100.0
	Total	193	94.6	100.0	
	Missing	11	5.4		
	Total Overall	204	100.0		

Studying the case study on "Community Perceptions of Climate-Induced Disasters" in the Barguna District reveals important data on demographic information distributions and residency duration, crucial for understanding how communities respond to climate issues. The participants' age groups span a wide spectrum of community members, with a notable emphasis on the 26-35 age group (25%) and the 36-45 age group (23%). This suggests that a significant proportion of the population participating in the study is relatively young and likely engaged in local climate adaption initiatives. A lower percentage of adults aged 66 and over (5.5%) may indicate decreased participation of

senior individuals in climate-related community activities or studies, or a smaller elderly population in Barguna.

The residency data indicates a strong community connection, with 69.9% of residents living in Barguna for more than 20 years. This prolonged stay is essential for acquiring knowledge on local climate-related disasters, based on the people's direct experiences and observations of the progressive impacts of climate change over a lengthy period. Their viewpoints will significantly improve the study by providing crucial contextual information.

A modest number of new residents (less than 5 years, 10.9%) may suggest a period of adaptation where newcomers are familiarizing themselves with the local climate difficulties. Their distinct perspectives and varied origins may offer useful insights into adaptive techniques that have not been considered by long-term residents of the area.

The data shows a wide variety of ages among individuals who have significant residence experience, which is crucial for understanding community views regarding climate-induced disasters in Barguna. The study's large population of long-term residents provides a strong foundation for assessing historical changes and the effectiveness of existing adaption methods, essential for tailoring future climate resilience initiatives.

Table 2: Gender and Residency

Category	Subcategory	Frequency	Percent	Valid Percent	Cumulative Percent
Participant Gender					
	Male	136	66.7	68.0	68.0
	Female	64	31.4	32.0	100.0
	Total	200	98.0	100.0	
	Missing	4	2.0		
	Total Overall	204	100.0		
Area of Residency					
	Urban	40	19.6	20.3	20.3
	Suburban	32	15.7	16.2	36.5
	Rural	125	61.3	63.5	100.0
	Total	197	96.6	100.0	
	Missing	7	3.4		
	Total Overall	204	100.0		

The table summarizes the gender and residency details of participants in the study "Community Perceptions of Climate-Induced Disasters" in the Barguna District. Male participation in the distribution of genders is larger at 68% compared to female engagement at 32%, which could influence the perceptions and reactions collected on climate-induced disasters. The residency data indicates a significant rural presence of 63.5% in this area, emphasizing the importance of rural viewpoints in understanding community attitudes and reactions to climate change. Urban and suburban areas, however less frequently examined, provide a distinct perspective that can improve study outcomes. This distribution provides a comprehensive overview of the community's demographic data and geographic representation, essential for an in-depth examination of climate change attitudes and reactions in the Barguna District.

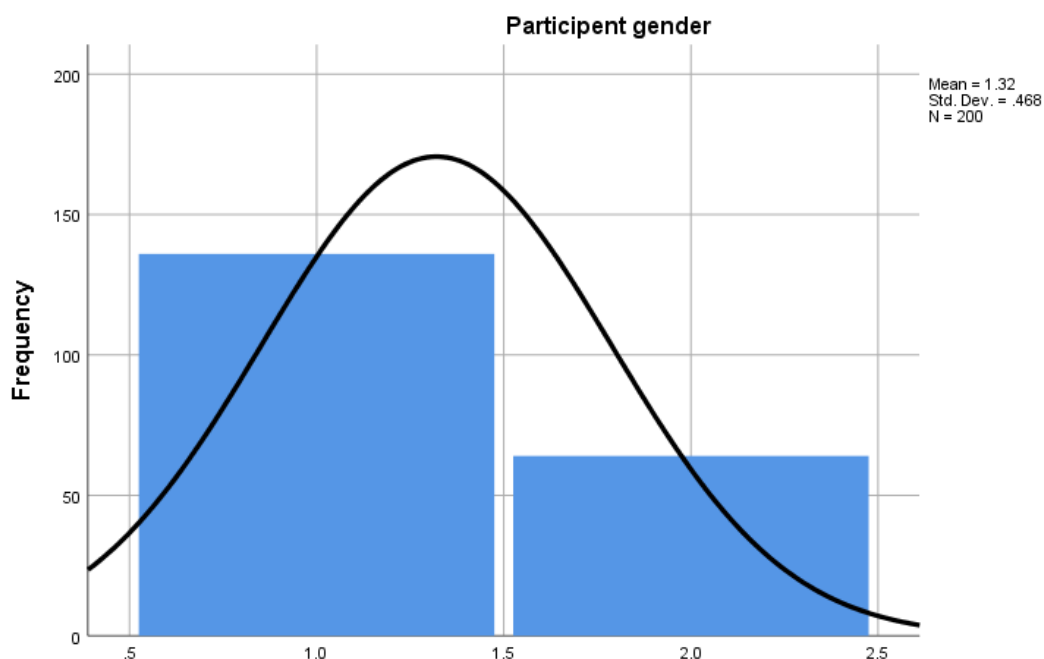


Figure 4-1: Participant gender

The histogram displays the distribution of participant gender in a study, with males coded as 1 and females as 2. The majority of participants are male, with a frequency over 130, while the number of female participants is significantly smaller, at approximately 60. The normal distribution curve does not fit the data well since the distribution of

respondent gender is bimodal and not continuous. This indicates that the data is categorical rather than continuous.

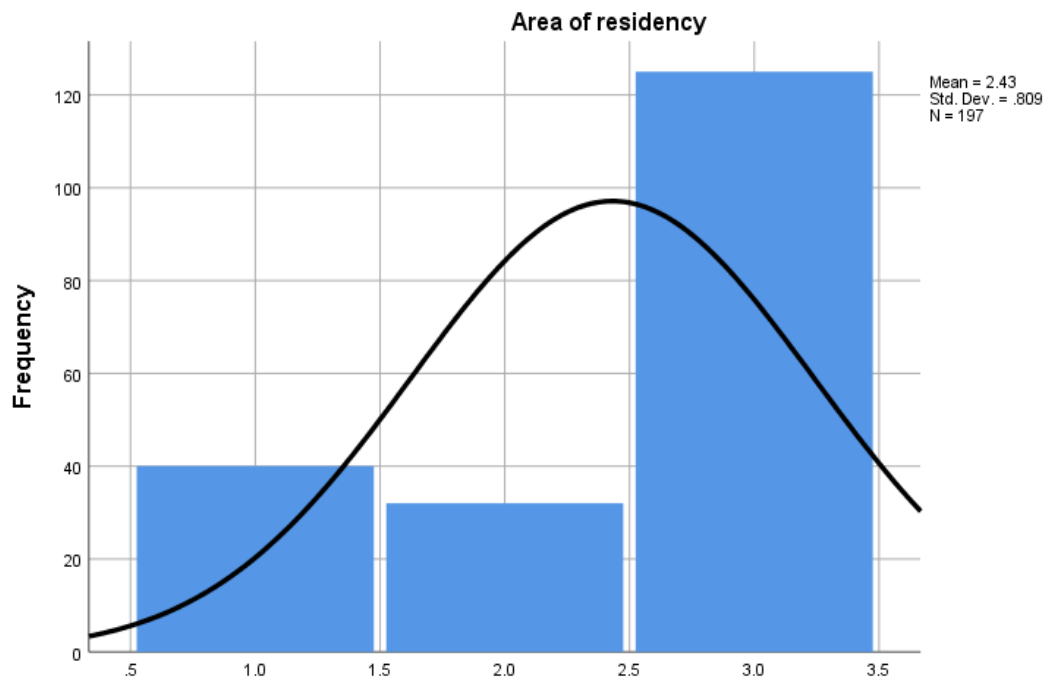


Figure 4-2: Area of residency

The histogram shows the distribution of participants' residential areas in a study, likely categorized as urban (1), suburban (2), and rural (3) regions. The majority of participants come from rural areas, as evidenced by the tall bar on the right side, while fewer urban and suburban inhabitants are represented by the shorter bars on the left. The average residential area is approximately 2.43, with a preference for rural living. The data points are near to the mean, as indicated by the standard deviation of approximately 0.809. The histogram does not appropriately represent the data since the residency area is a categorical variable, not normally distributed, and hence the normal distribution curve overlaid on it is not appropriate. The study's distribution heavily favors rural perspectives, which could affect the relevance of the findings to various sorts of residential regions.

Involvement in any community organizations or groups that focus on climate change or disaster preparedness.

Table 3: Involvement with climate change group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	48	23.5	24.4	24.4
	No	149	73.0	75.6	100.0
	Total	197	96.6	100.0	
Missing	System	7	3.4		
Total		204	100.0		

Out of 204 responders, only 48 participants (24.4% valid percent) are involved in community organizations or groups focusing on climate change or disaster preparedness, as per the statistics. Out of 197 respondents, 149 (75.6% valid percent) are not engaged in these groups, suggesting a potential absence of involvement in community organizations. Participants in the valid percent have been categorized as either 'Yes' or 'No' based on cumulative percentage, with no other categories. 7 replies were missing out of the total, accounting for 3.4%, suggesting that the majority of the intended population provided relevant data. This distribution highlights an opportunity to improve community outreach and engagement in order to enhance local involvement in climate change and disaster preparedness efforts.

Involvement in any community organizations or groups that focus on climate change or disaster preparedness.

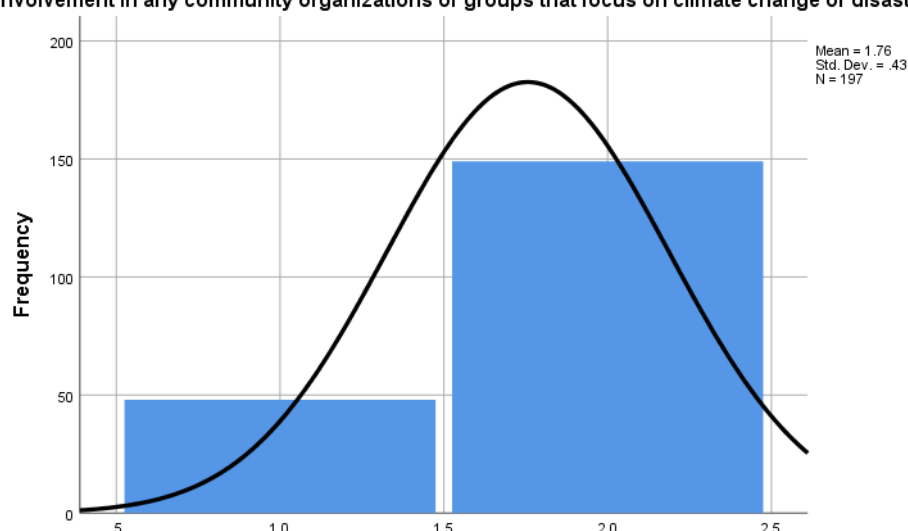


Figure 4-3: Community that focus on climate change

The histogram shows the level of involvement of individuals in community

organizations or groups dedicated to climate change or disaster preparedness. The x-axis represents the degree of participation, likely represented by 1 for 'Yes' and 2 for 'No', and the y-axis displays the frequency of answers. Majority of participants exhibit disengagement, indicated by the prominent bar at the 'No' value. The mean level of participation is 1.76 with a low standard deviation of 0.43, suggesting that most replies are focused on the 'No' involvement end of the range. Superimposing a normal distribution curve is not appropriate for the data as it is a categorical variable with just two possible outcomes.

Level of involvement in community activities related to climate change and disaster preparedness

Table 4: Level of involvement in community activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	109	53.4	54.8	54.8
	Moderate	76	37.3	38.2	93.0
	High	14	6.9	7.0	100.0
	Total	199	97.5	100.0	
Missing	System	5	2.5		
Total		204	100.0		

Based on the table, the majority of respondents, representing 54.8% valid percent, demonstrate limited involvement in community efforts related to climate change and disaster preparedness. The valid percentage for those with a moderate degree of involvement has decreased significantly to 38.2%, suggesting an opportunity to increase engagement towards a higher level of commitment. Merely 7% of the participants demonstrate strong involvement, indicating a tiny core group of very active individuals in these critical areas. There were 199 valid responses and 5 missing responses (2.5%) based on the data. This suggests that there is a basis for involvement in the community, but there is room for further participation and more profound engagement in climate change and disaster response initiatives.

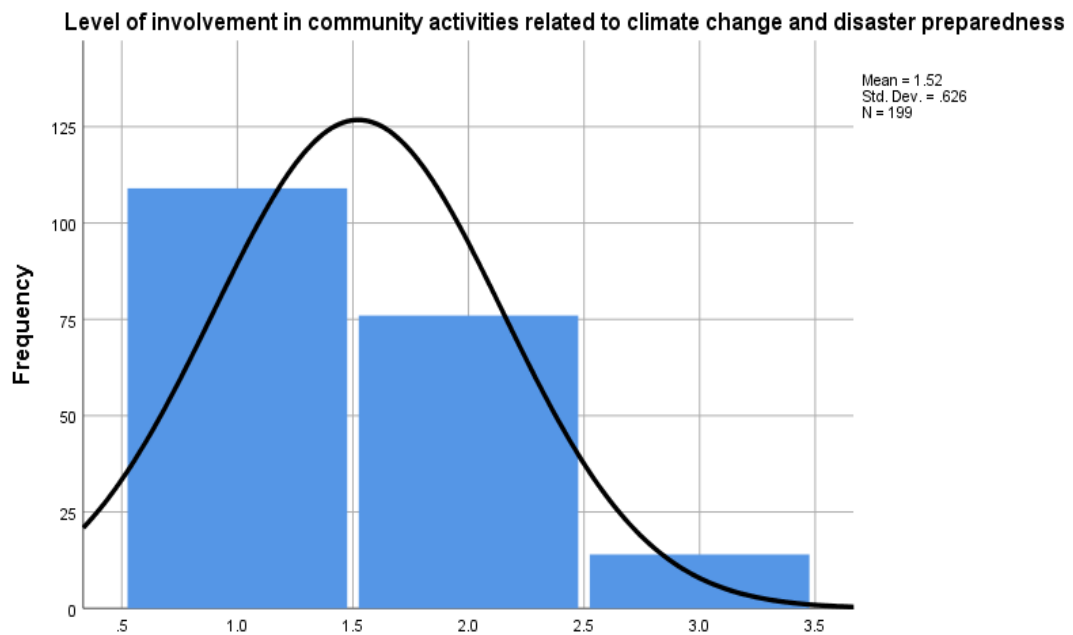


Figure 4-4: Level of involvement in community activities related to climate change

The histogram illustrates the level of involvement in community activities related to climate change and disaster preparedness among participants. The levels of involvement are likely classified as 1 for 'Low', 2 for 'Moderate', and 3 for 'High'. The majority of participants exhibit a 'Low' degree of engagement, with the highest bar corresponding to level 1. The number of people showing 'Moderate' and 'High' degrees of involvement is declining, as evidenced by the gradually shrinking bars. The mean engagement level is 1.52, with a standard deviation of 0.626, indicating that most responses are concentrated towards lower levels of engagement. Superimposing the normal curve on the histogram may not accurately depict the distribution due to the data being in ordinal categories rather than a continuous variable.

Table 5: Frequency of disaster and concern level

Category	Subcategory	Frequency	Percent	Valid Percent	Cumulative Percent
Concern Level about Climate-Induced Disasters					
	Not concerned at all	7	3.4	3.5	3.5
	Slightly concerned	14	6.9	7.1	10.6
	Moderately concerned	8	3.9	4.0	14.6
	Very concerned	66	32.4	33.3	48.0
	Extremely concerned	103	50.5	52.0	100.0
	Total	198	97.1	100.0	
Missing	6	2.9			
Total Overall	204	100.0			
Perception of Increased Frequency of Climate-Induced Disasters					
	Yes	152	74.5	78.4	78.4
	No	42	20.6	21.6	100.0
	Total	194	95.1	100.0	
	Missing	10	4.9		
Total Overall	204	100.0			

Participants' Concerns and Perceptions of Climate-Induced Disasters in Barguna District

Based on the findings, the majority of participants showed significant worry about climate-induced disasters, with 85.3% of valid responses falling into the 'Very concerned' and 'Extremely concerned' categories. The majority of respondents (78.4%) believe that the frequency of climate-induced disasters has increased, reflecting a high level of concern. Participants demonstrate a heightened level of worry and awareness regarding the effects of climate change, either affected by personal experiences or exposure to media and local discussions. The low lack of data (2.9% for concern levels and 4.9% for sense of increased frequency) indicates a high degree of involvement from the participants. This fear and impression could significantly influence community-led initiatives and policy decisions related to climate change and disaster preparedness.

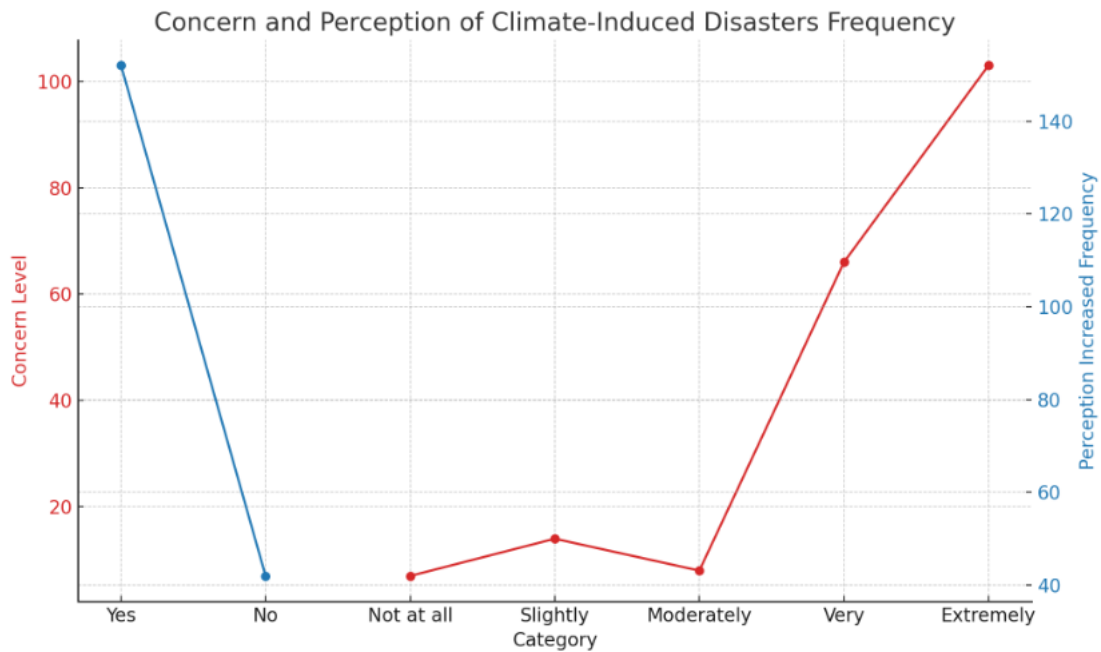


Figure 4-5: Concern and perception of climate-induced Disasters frequency

The graph illustrates two separate datasets: one representing levels of concern about climate-induced disasters (in red) and the other displaying perceptions of the frequency increase of these disasters (in blue). The x-axis displays categories of concern and the binary assessment of increased disaster frequency, while the y-axis shows the frequency of participants' responses.

The graph shows a clear trend of increasing concern among participants, with the highest number of respondents expressing 'Extremely concerned' emotions regarding climate-induced calamities. However, the majority of individuals believe that the occurrence of these catastrophes has increased, as indicated by the blue data points representing 'Yes'.

Plotting these two data points on a graph emphasizes the community's heightened apprehension regarding the impacts of climate change, potentially leading to a call for more robust disaster planning and mitigation strategies.

Effectiveness of government or community initiatives in mitigating the impact of climate-induced disasters

Table 6: Effectiveness of government or community initiatives

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	127	62.3	64.8	64.8
	Fair	55	27.0	28.1	92.9
	Good	11	5.4	5.6	98.5
	Very Good	2	1.0	1.0	99.5
	Excellent	1	.5	.5	100.0
	Total	196	96.1	100.0	
Missing	System	8	3.9		
Total		204	100.0		

The table illustrates participants' perceptions of the efficacy of government or community initiatives in mitigating the effects of climate-induced disasters. 64.8% of valid replies rated the efficacy as 'Poor', indicating significant unhappiness with existing efforts. Only a minority of participants have a good view of the efforts, suggesting a need for major improvement in these programs. The proportion significantly climbs until reaching the 'Fair' category (92.9%), and then shows a little increase, suggesting that only a few people see the initiatives very positively. The data from 196 valid replies and 8 missing (3.9%) indicates a significant community concern on present climate disaster mitigation measures, emphasizing the need for enhanced plans and activities.

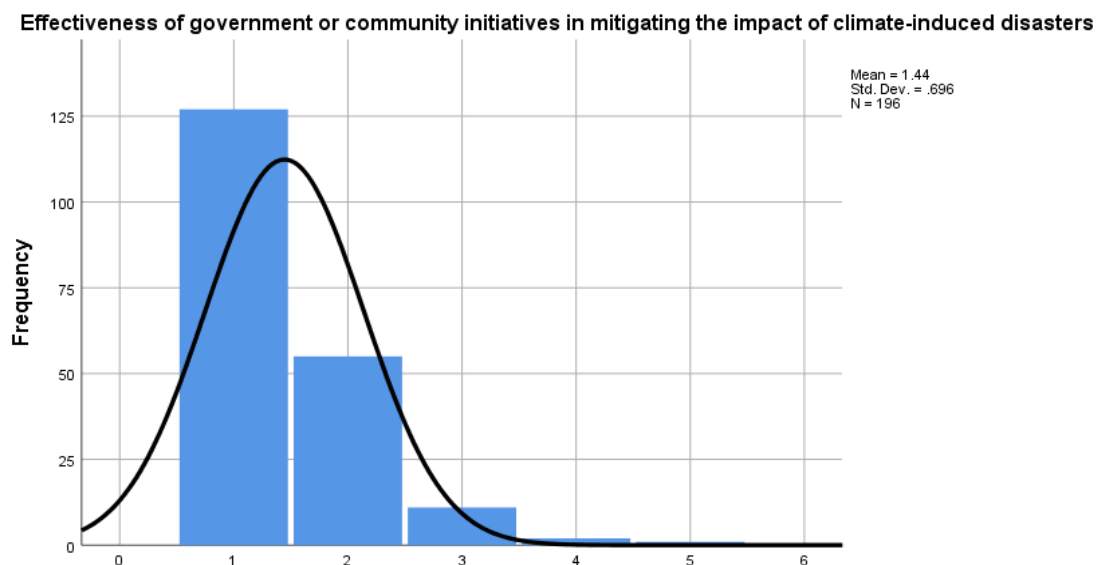


Figure 4-6: Effectiveness of government of the impact of climate-induced disasters

The histogram displays participants' ratings of the effectiveness of government or community efforts in mitigating the effects of climate-related disasters. The x-axis appears to represent a scale indicating effectiveness, ranging from 'Poor' to 'Excellent' (perhaps coded from 1 to 5), while the y-axis shows the frequency of participants' ratings.

Most participants perceived the effectiveness to be inadequate, shown by the highest bar at the lower end of the scale. The mean rating is 1.44 with a standard deviation of 0.696, suggesting that most responses are concentrated towards the lower end of the scale. The replies are not distributed in a way that matches a normal distribution curve. Instead, they are strongly skewed towards the lower end of the effectiveness scale, suggesting widespread unhappiness with present mitigation measures.

Table 7: Engagement in Climate Change Activities

Category	Subcategory	Frequency	Percent	Valid Percent	Cumulative Percent
Measures Implemented for Climate-Induced Disasters					
	Yes	147	72.1	75.4	75.4
	No	48	23.5	24.6	100.0
	Total	195	95.6	100.0	
	Missing	9	4.4		
	Total Overall	204	100.0		
Engagement in Climate Change Discussions/Activities					
	Rarely	104	51.0	52.3	52.3
	Occasionally	90	44.1	45.2	97.5
	Frequently	5	2.5	2.5	100.0
	Total	199	97.5	100.0	
	Missing	5	2.5		
	Total Overall	204	100.0		

Community initiatives and participation in tackling climate change in Barguna District

Based on the table, the majority of participants (75.4% valid percent) acknowledge the implementation of specific measures in their community to tackle climate-related

disasters. However, more than half of the participants (52.3% valid percent) only infrequently participate in debates or actions connected to climate change. Approximately 45.2% of the community participates occasionally, while only 2.5% do so frequently. According to the data, there is knowledge and some initiative at the community level, but personal involvement in ongoing climate-related activities is not common. The extent of involvement indicates a possible need for more captivating and user-friendly methods for community members to regularly engage with climate change subjects.

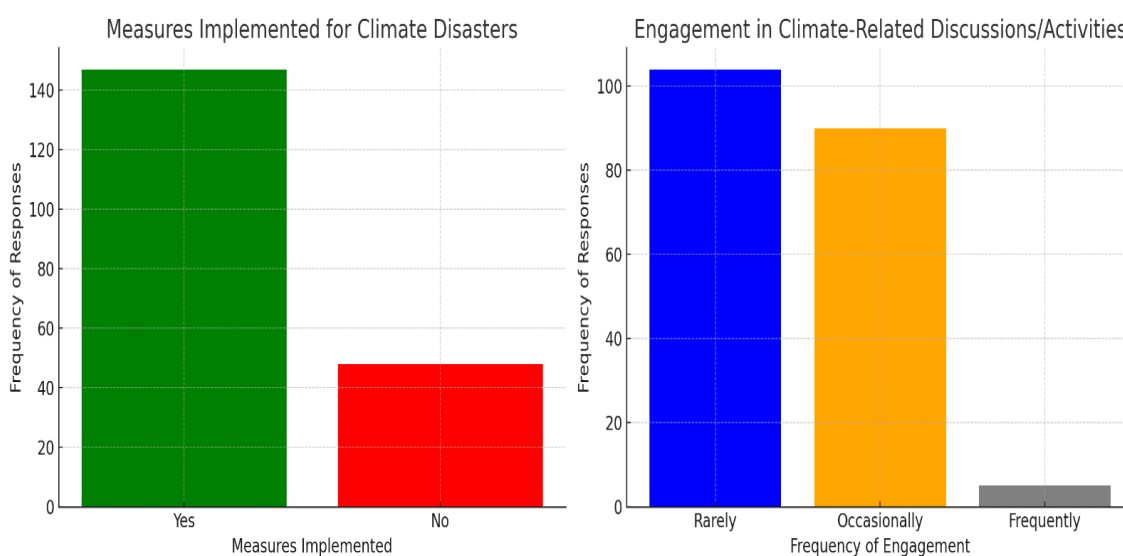


Figure 4-7: Measure implemented and Engagement in climate disasters

The graphic displays two bar graphs. The left graph shows input regarding the implementation of strategies for climate-related disasters. Most participants verified the existence of such measures in their town, as evidenced by the green bar representing 'Yes'. The graph on the right depicts the frequency of individuals engaging in climate-related talks or actions. The most common response is 'Rarely' (blue bar), followed by 'Occasionally' (orange bar), and 'Frequently' with a limited response (grey bar). Although there are established indicators, there is a noticeable absence of consistent community engagement in climate change conversations or actions. The disparity in how metrics are visually presented and the absence of active participation emphasize the need to improve community mobilization and engagement techniques.

Perception about increasing educational programs on climate change and disaster preparedness on their community.

Table 8: Perception about increasing educational programs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	170	83.3	89.9	89.9
	No	19	9.3	10.1	100.0
	Total	189	92.6	100.0	
Missing	System	15	7.4		
Total		204	100.0		

The table shows participants' opinions on increasing educational programs about climate change and disaster preparedness in their town. 89.9% of replies show a significant increase in these educational programs. Only 10.1% of individuals fail to observe an increase. A large portion of 'Yes' responses suggests a strong community awareness or visibility of these educational programs. From the feedback of 189 participants and 15 missing responses, it is clear that there is substantial community backing for educational activities. This assistance could be vital in improving disaster readiness and tackling climate change in the future.

Perception about increasing educational programs on climate change and disaster preparedness on their community.

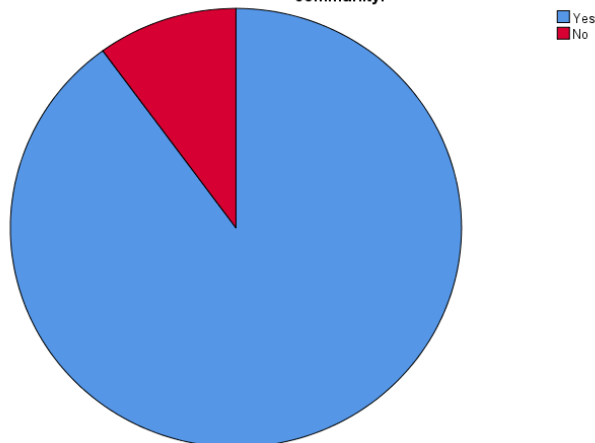


Figure 4-8: Increasing educational programs on climate change

The pie chart illustrates participants' perspectives on the influence of educational programs on climate change and disaster preparedness in their neighborhood. 89.9% of the participants selected 'Yes', as seen by the predominant blue segment. The narrow red section reflects 10.1% of participants who do not observe an increase in such programs.

The table shows that most participants are familiar with or have come across an increase in educational programs related to climate change and disaster preparedness. This suggests a community that is becoming more conscious and potentially more equipped to tackle environmental challenges.

Participant perception about collaboration and coordination among different age groups in their community when it comes to addressing climate-induced disasters.

Table 9: Collaboration and coordination among different age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	53	26.0	27.2	27.2
	Moderate	103	50.5	52.8	80.0
	High	39	19.1	20.0	100.0
	Total	195	95.6	100.0	
Missing	System	9	4.4		
Total		204	100.0		

The table displays participants' opinions on collaborating across different generations in their community to address climate-related calamities. Most individuals perceive the degree of collaboration as 'Moderate', with 52.8% of valid responses suggesting interaction among various age groups, albeit not entirely integrated or efficient. There is a significant absence of collaboration at 27.2%, indicating that many individuals in the community see a deficiency in intergenerational cooperation. Only 20% of participants rated the collaboration and coordination as 'High', suggesting a minority with a positive view on inter-age group participation. 100% of all participants who responded to the question are accounted for, with 195 valid responses and 9 missing, indicating that nearly all respondents have an opinion on the topic. The different perspectives highlight the significance of enhancing communication and collaboration among different age groups in community initiatives addressing climate change.

Participant perception about collaboration and coordination among different age groups in their community when it comes to addressing climate-induced disasters.

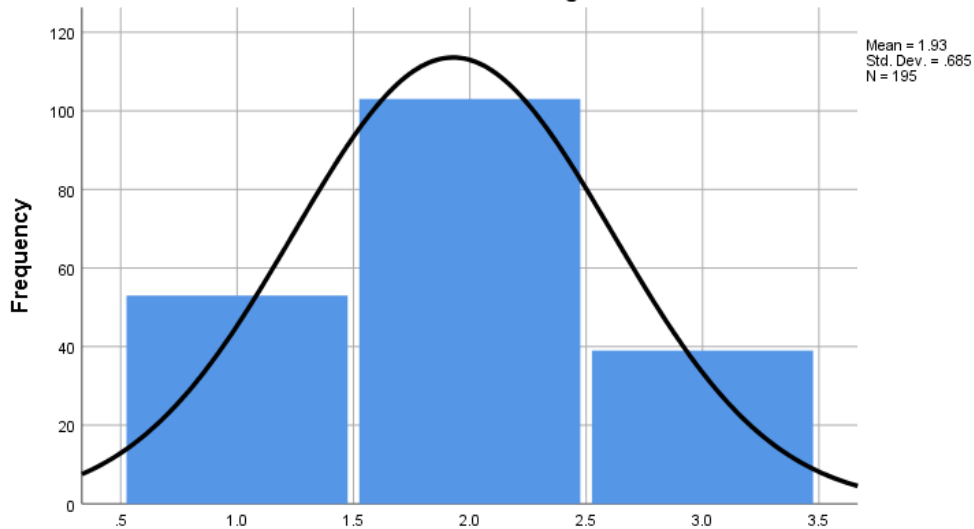


Figure 4-9: collaboration and coordination among different age groups

The participants' perspectives on the degree to which different age groups in their community work together and coordinate their efforts to deal with climate-related calamities are graphically represented in the histogram. In this graph, the x-axis represents the perceived level of collaboration, which is coded from 1 (Low) to 3 (High). On the other hand, the y-axis depicts the frequency of replies for each category.

It is clear that the 'Moderate' level of perception is the most prevalent among the participants, as indicated by the highest bar, which indicates this level of perception. When compared to the 'High' perception level, the 'Low' perception level has the second-highest frequency, while the 'High' perception level has the lowest frequency. This indicates that the overall perception tends towards a 'Moderate' level of collaboration, since the average score is slightly below 2, which indicates that this is the case. Despite the fact that the bulk of replies are still focused around the 'Moderate' grade, the standard deviation of 0.885 indicates that there is considerable variety in the responses. On the basis of the responses, it is abundantly evident that there is a clear possibility to strengthen collaboration among different age groups in the community's efforts to confront crisis situations caused by climate change.

Do they think that the government appropriately considers age groups' perspectives and needs in climate change and disaster management policies?

Table 10: Government initiatives on age groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	139	68.1	71.3	71.3
	No	56	27.5	28.7	100.0
	Total	195	95.6	100.0	
Missing	System	9	4.4		
Total		204	100.0		

The table displays participants' opinions on the government's consideration of different age groups' perspectives and needs in its climate change and disaster management strategies. 71.3% of respondents believe that the government sufficiently considers these perspectives and needs. Conversely, 28.7% of participants have a contrasting view, suggesting a substantial percentage of the community feels that age group issues are not sufficiently taken into account in present policy actions. The data from 195 participants, with only 9 missing responses, indicates a strong preference for the notion that the government's plan is adaptable to various age groups. However, the fact that nearly one-third disagree indicates that there is still potential for enhancing the satisfaction of all age groups in the community.

Do they think that the government appropriately considers age groups' perspectives and needs in climate change and disaster management policies?

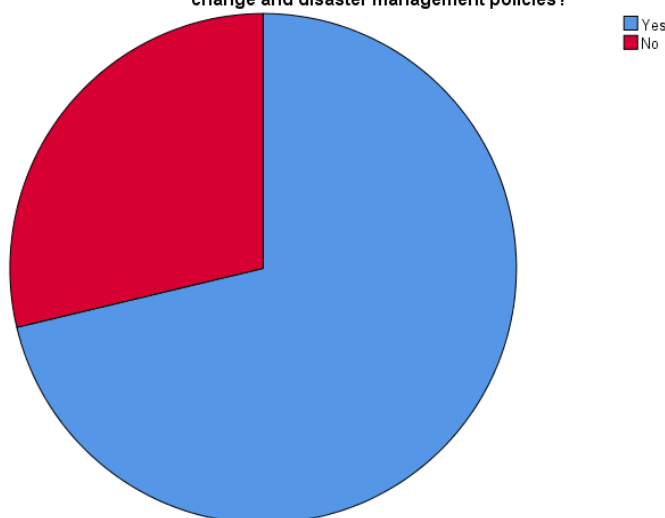


Figure 4-10: Government appropriately considers age group

The pie chart depicts participants' perspectives on the government's inclusion of various age groups in climate change and disaster management plans. The larger blue part represents respondents who replied 'Yes', indicating they believe there is sufficient deliberation, accounting for 71.3% of the responses. The red section represents 28.7% of respondents who answered 'No', suggesting a belief that the government's programs do not adequately address different age groups. The chart indicates a widespread trust in the government's inclusion in policy-making, with a significant minority advocating for better representation of age-specific needs and viewpoints.

Participant perception about the future resilience of their community in the face of climate-induced disasters.

Table 11: Perception about future resilience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not optimistic at all	107	52.5	54.6	54.6
	Slightly optimistic	37	18.1	18.9	73.5
	Moderately optimistic	20	9.8	10.2	83.7
	Very optimistic	22	10.8	11.2	94.9
	Extremely optimistic	10	4.9	5.1	100.0
	Total	196	96.1	100.0	
Missing	System	8	3.9		
Total		204	100.0		

The table shows participants' views on their community's future resilience to climate-related calamities. Over 50% of the participants (54.6% valid percent) show a lack of optimism about their community's resilience, revealing significant concerns about the current catastrophe preparedness and adaptation capabilities. 18.9% and 10.2% of valid responses demonstrate a mild to moderate level of optimism, suggesting a combination of hope and caution. 16.3% of participants are 'Very' or 'Extremely' enthusiastic about the community's ability to adequately solve climate concerns. The data, consisting of 196 valid replies and 8 missing, indicates a community worried about its ability to manage future climate-related crises. This highlights the need for enhancing more robust techniques to increase resilience and optimism in disaster management.

Participant perception about the future resilience of their community in the face of climate-induced disasters.

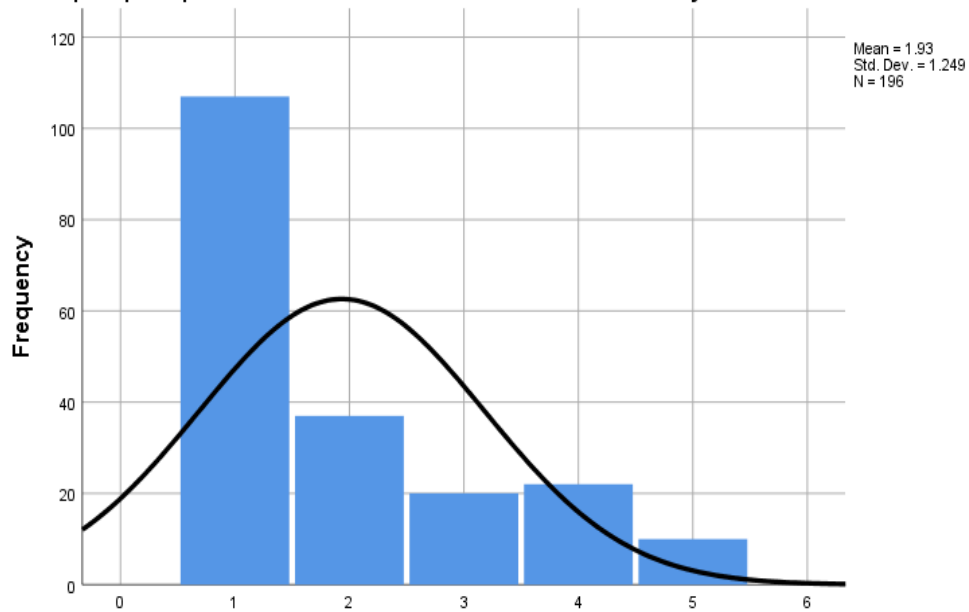


Figure 4-11: Participant perception about the future resilience of their community

The histogram illustrates participants' perceptions on their community's future resilience in the face of climate-induced calamities. The x-axis likely displays several degrees of optimism, ranging from 'Not optimistic at all' to 'Extremely optimistic'. The tallest bar symbolizes the perception 'Not optimistic at all', which is the predominant choice among participants, garnering almost 100 replies in this category.

The average perception is approximately 2, suggesting a slight level of optimism on the scale. The distribution is left-skewed, indicating a predominant feeling of pessimism about future resilience. There is a notable variety in the replies, as shown by the comparatively large standard deviation. The overall distribution indicates a community mostly concerned about its ability to withstand future climatic problems.

Table 12: Case study 1 overview

Finding Category	Detail	Frequency (Valid Percent)	Notes
Participant Age Group Involvement	Majority in the 26-35 and 36-45 age brackets	25.0% and 23.0%	Younger, potentially more active participants
Residency Duration	Predominantly more than 20 years	69.9%	Long-term residents with deep local insights
Gender Distribution	Higher male participation	68.0% (male)	Gender may influence community response perceptions
Area of Residency	Majority are rural residents	63.5%	Rural insights dominant in the study
Involvement in Climate Organizations	Minority involved in relevant groups	24.4%	Potential gap in community organization participation
Level of Community Activity Involvement	Most have a low level of involvement	54.8%	Room for increased participation
Concern about Climate-Induced Disasters	High level of concern, with many very or extremely concerned	85.3%	Reflects awareness and potential for action
Perception of Disaster Frequency Increase	Majority believe frequency has increased	78.4%	Indicates awareness of climate change impact
Effectiveness of Initiatives	Most rate effectiveness as poor	64.8%	Indicates dissatisfaction with current efforts
Measures Implemented	Majority acknowledge implementation of measures	75.4%	Awareness of measures, yet personal engagement is less
Engagement in Discussions/Activities	More than half engage only rarely	52.3%	Suggests need for more compelling community engagement

Educational Programs Increase	Majority perceive an increase in educational programs	89.9%	Indicates rising community awareness and educational efforts
Intergenerational Collaboration Perception	Moderate collaboration most common, but low perception significant	52.8% (moderate)	Room for improved intergenerational cooperation
Government Consideration of Age Perspectives	Majority believe government considers age groups in policies	71.3%	Positive indication of inclusive policy-making
Future Community Resilience	Predominant lack of optimism about resilience	54.6% (not optimistic)	Signals concerns about disaster preparedness capacities

The case study on community attitudes regarding climate-related disasters in Barguna District reveals a complex network of participation, concern, and readiness for future resilience. The younger group, usually between 26 and 45 years old, is emphasized for their potential to advance local climate action programs due to their large numbers and eagerness to participate. Residents in the area have resided there for more than twenty years, providing a valuable reservoir of firsthand knowledge essential for comprehending climate change patterns.

Despite the substantial local expertise, there is a significant gender disparity in participation, with males showing much higher involvement than females. This prejudice could influence the community's discourse and actions regarding climate change, thereby overlooking gender-specific concerns and remedies. Most respondents from rural areas in Barguna emphasize the significance of prioritizing climate adaptation and disaster preparedness programs specifically designed for rural people.

Only a minority of the community is engaged in climate change-focused organizations, and less than 25% are actively participating. This suggests a shortage of available venues for community involvement or a requirement for increased awareness regarding current groups. Many individuals do not actively engage in tackling climate change and disaster preparedness in their daily lives, maybe due to a lack of importance or obstacles to engagement.

Participants are displaying notable worry about climate-triggered calamities, with many expressing elevated degrees of fear. Despite the significant worry, there is a prevailing assumption that the frequency of such disasters is increasing, highlighting the urgent need for effective local climate action.

It is essential to take into account participants' perspectives on the efficacy of government or community efforts in addressing climate impacts, given the majority of them perceive the effectiveness to be low. This discovery indicates a possible lack of alignment between the initiatives and their outcomes, or a requirement for improved communication regarding accomplishments and ongoing efforts.

Despite the implementation of measures, there is a lack of personal involvement in relevant debates or activities, maybe due to constraints such as limited time, finances, or the perceived significance of these activities. The increase in educational programs dedicated to climate change is a positive sign, suggesting either a growth in the number of programs available or an increased community understanding of these crucial issues.

There is a worrying absence of intergenerational cooperation and coordination, which are crucial for inclusive and comprehensive community-based climate action. While many individuals assume that the government considers the viewpoints of different age groups when creating policies, around one-third of respondents disagree, indicating a necessity for more comprehensive policy formulation procedures.

The majority of people in the community had a pessimistic attitude on their future resilience, with more than half expressing a lack of optimism. The absence of hope may stem from a thorough evaluation of the efficacy of current initiatives, which could hinder engagement in activities that foster resilience.

The case study demonstrates a community that is aware of and concerned about climate change, while also assessing the efficacy and inclusiveness of existing remedies. The findings suggest a requirement for increased community engagement, enhanced project communication, and policies that more effectively address the diverse requirements of all inhabitants.

CHAPTER 5: CASE STUDY 2

Assessing the Efficacy of Local Coping Strategies Against Climate-Induced Disasters in the Barguna District

Table 13: Participant age for case study 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	26	25.5	26.0	26.0
	26-35	35	34.3	35.0	61.0
	36-45	12	11.8	12.0	73.0
	46-55	12	11.8	12.0	85.0
	56-65	12	11.8	12.0	97.0
	66 and above	3	2.9	3.0	100.0
	Total	100	98.0	100.0	
Missing	System	2	2.0		
Total		102	100.0		

Analyzing the effectiveness of local coping strategies in response to climate-related disasters in the Barguna District, with an emphasis on the community's resilience and capacity to adjust. This study analyzes a dataset of 102 respondents to explore demographic factors, degrees of concern about climate change, awareness and effectiveness of coping techniques, engagement in community activities, and attitudes on governmental actions. The Barguna District, susceptible to climate-related adversities, offers a vital context for examining how local communities respond to environmental problems. The study aims to uncover the intricacies of community-based adaption mechanisms using statistical analysis, providing insights into the strengths and limitations of local disaster management frameworks. The results provide recommendations supported by evidence to enhance the adaptive capacity of Barguna District in addressing escalating climate challenges, aiming to contribute significantly to the broader conversation on sustainable climate resilience methods.

Analyzing visual data

The age range of 26-35 years had the highest proportion of responders at 35.0%, indicating a predominantly young adult demographic involvement. Participants aged 66 and above make up only 3.0% of the total. Youth in the Barguna District seem to be more engaged

in conversations and activities related to coping mechanisms for climate-induced disasters.

The poll results indicate that 73.0% of participants are male, and 27.0% are female. Gender disparity in survey participation may reflect differing degrees of engagement or accessibility among genders, suggesting broader social or cultural factors at play in the community's attitudes towards climate change and catastrophe response.

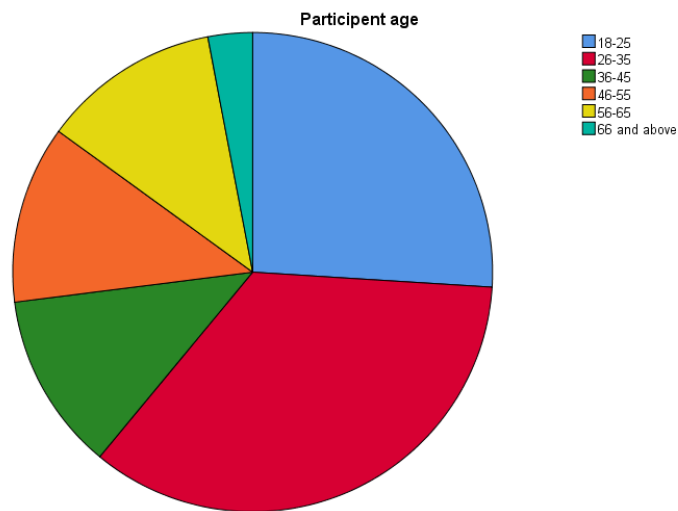


Figure 5-1: Participant age

Analyzing the age distribution is essential for gaining insight into the active participants in climate resilience initiatives within the community. The significant presence of individuals aged 26-35 in the poll suggests that this cohort is notably impacted by, or interested in, climate-related events. This age group has the capacity to become influential agents of change in their communities through their active participation.

The survey results highlighting the gender discrepancy raise important questions regarding the inclusivity of disaster response activities. Existing disparities in effectively reaching or interacting with all community members may be evident if females are underrepresented. It is crucial to include gender-sensitive measures in climate adaptation and catastrophe resilience planning to ensure equitable involvement and representation.

Gender

Table 14: Participant gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	73	71.6	73.0	73.0
	Female	27	26.5	27.0	100.0
	Total	100	98.0	100.0	
Missing	System	2	2.0		
Total		102	100.0		

Table 15: Participant living and educational information

Category	Frequency	Percent
Living Years in Community < 5 years	13	12.7
Living Years in Community 5-10 years	16	15.7
Living Years in Community 11-20 years	10	9.8
Living Years in Community > 20 years	61	59.8
Community Type Urban	26	25.5
Community Type Suburban	17	16.7
Community Type Rural	57	55.9
Education Level Primary School	49	48.0
Education Level Secondary School	21	20.6
Education Level College	21	20.6
Education Level University	8	7.8

The table offers a comprehensive overview of the demographic and educational characteristics of the population in the Barguna District, emphasizing their duration of stay, community kinds, and educational backgrounds. According to the data, 59.8% of the population has resided in the neighborhood for more than 20 years, indicating strong connections and important local knowledge for handling climate-related calamities. The chart shows that a large rural community (55.9%) exists, emphasizing the necessity of developing solutions tailored to the unique requirements and capacities of rural regions to tackle climate-related issues. Additionally, the data on educational attainment shows that 48.0% of the population has completed only primary school, underscoring the importance of ensuring that climate resilience and adaptation options are readily available and feasible. This detailed demographic analysis is crucial for understanding the community's capacity to create and improve local coping mechanisms in response to climate-related calamities.

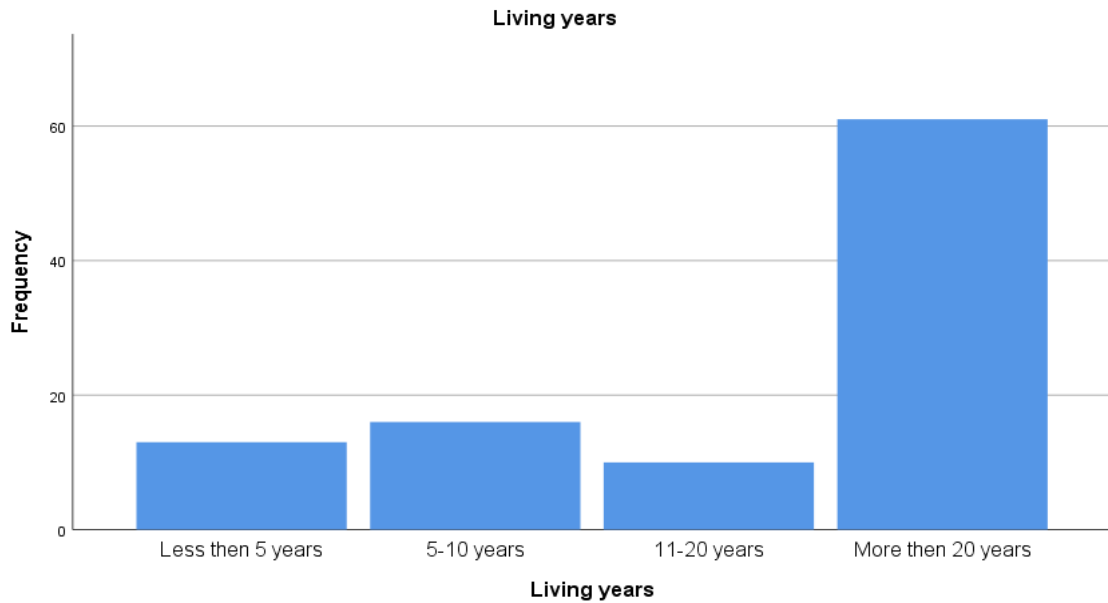


Figure 5-2: Living Years

Approximately 59.8% of the participants had lived in the town for more than 20 years, indicating a stable and long-standing population. 15.7% of the population has lived in the area for 5-10 years, followed by 12.7% who have lived there for less than 5 years and 9.8% for 11-20 years. The distribution shows a notable number of long-term inhabitants as well as a consistent influx of new people. This suggests a requirement for continuous modifications in local coping mechanisms to address climate-related calamities.

Rural areas account for 55.9% of the population, urban regions for 25.5%, and suburban areas for 16.7%. Rural communities are predominantly focused on agriculture, which can impact the climate-related disasters they face and the methods they employ to address them, sometimes relying on local knowledge and customs.

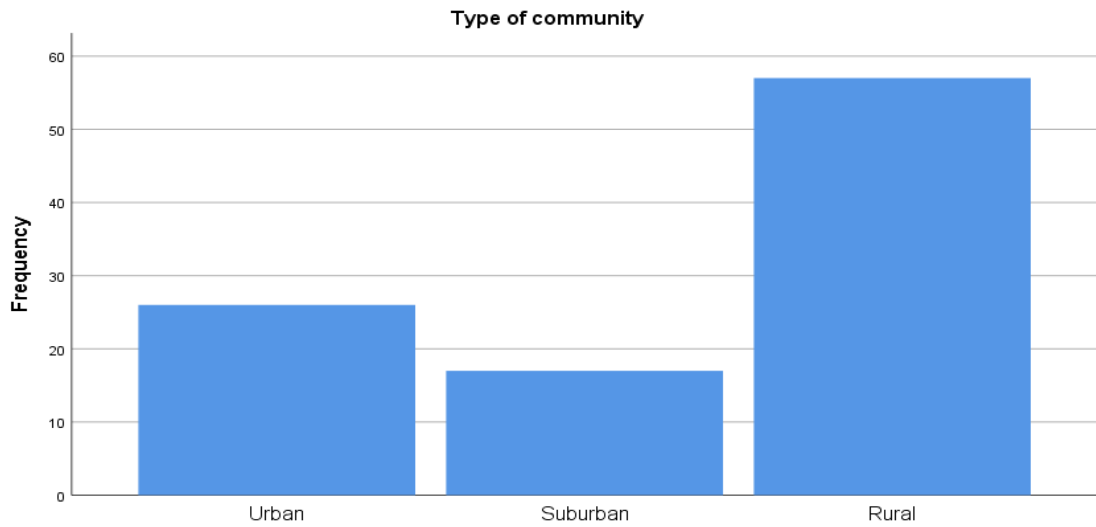


Figure 5-3: Type of community

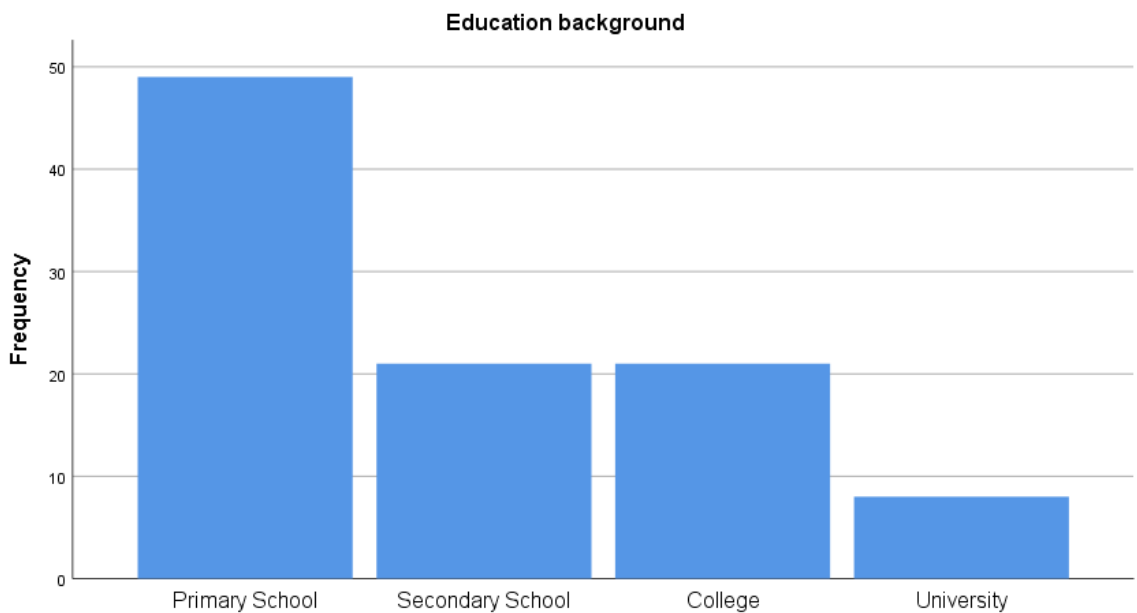


Figure 5-4: Education background

Approximately 48.0% of the population has finished primary education, indicating a basic level of literacy but may encounter difficulties in pursuing higher education. 20.6% of the population have completed high school and college levels, while just 7.8% have attained university-level education. Different degrees of education can affect how well a community understands, utilizes, and creates strategies to deal with climate-related calamities. Increased education levels may correlate with more effective adaptation and mitigation techniques.

The community is characterized by long durations of habitation, predominantly rural environments, and a wide range of educational levels, as indicated by the data. These characteristics have a substantial impact on the community's ability to withstand and respond to climate-induced calamities. Rural communities with many long-term residents demonstrate a deep understanding of local environmental conditions. The range of education levels emphasizes the significance of both traditional knowledge and formal education in developing coping mechanisms.

The table offers a comprehensive assessment of the community's perceptions and concerns regarding climate-induced catastrophes, as well as their observations on changes in disaster frequency. A significant portion of the participants, with 41.2% moderately concerned, 26.5% very concerned, and 19.6% extremely concerned, show a prevalent apprehension regarding climate-induced disasters. This highlights a population that is knowledgeable and impacted by such events. There is a common belief that these disasters are happening more often, showing a collective awareness that climate change is affecting the local ecosystem and highlighting the urgency to take quick action to mitigate its consequences.

Table 16: Concern level of participant

Category	Frequency	Percent	Valid Percent	Cumulative Percent
Not concerned at all	5	4.9	5.1	5.1
Slightly concerned	4	3.9	4.1	9.2
Moderately concerned	42	41.2	42.9	52.0
Very concerned	27	26.5	27.6	79.6
Extremely concerned	20	19.6	20.4	100.0
Believe frequency has increased	75	73.5	75.0	N/A
Do not believe frequency has increased	25	24.5	25.0	N/A

The research indicates varying levels of concern throughout the community, with a small minority expressing no concern (4.9%) or slight concern (3.9%). These various perspectives could influence collective action and policy support. Varying levels of concern may stem from disparities in personal experiences, comprehension of climate change, or the actual effects experienced by individuals. Observing the transition from mild concern to intense anxiety shows a clear pattern of increasing discomfort as individuals acknowledge the gravity of climate-related disasters.

The large disparity between persons who endorse the concept of more frequent disasters (75%) and those who do not (25%) could indicate a division in the community's recognition of climate change as an urgent and escalating concern. This division could affect community cohesiveness in dealing with climatic concerns, necessitating targeted educational and communication efforts to create a cohesive strategy for disaster readiness and response.

Examining these discoveries can assist professionals, policymakers, and community leaders in developing and implementing climate adaptation strategies that are effective and sensitive to the community's perspectives and concerns. Strengthen resilience and secure ongoing support and acceptance for adaptation strategies by including the community in inclusive and participatory ways.

Participant Concern and Perception on Climate-Induced Disasters

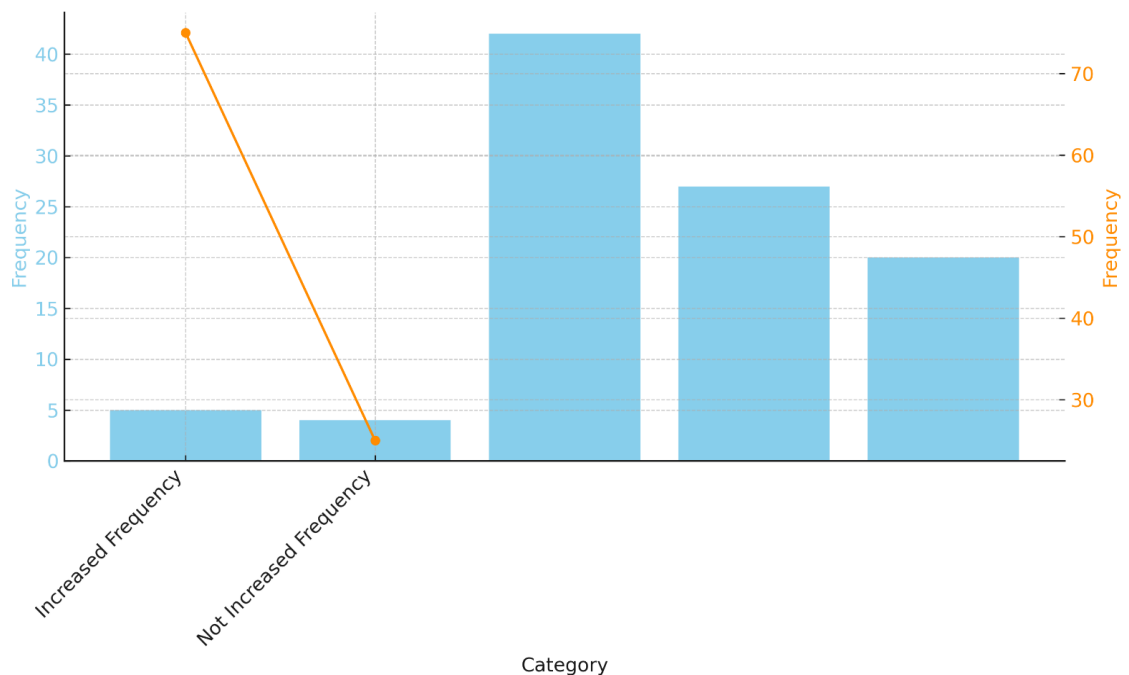


Figure 5-5: Participant Concern and Perception on Climate-Induced Disasters

The graph shows the community's varying levels of worry regarding climate-induced disasters and their opinions on the increasing occurrence of such events, offering useful information for academic research and practical applications.

The graph shows a large number of participants expressing different levels of concern

about climate-related disasters, suggesting a high level of community awareness and readiness to engage in adaptation initiatives. These findings suggest that approaches aimed at enhancing resilience and reducing vulnerability to climate impacts could be well accepted in these areas.

Moreover, many participants who recognize the increasing frequency of climate-related disasters emphasize the critical and immediate impact of climate change on human health. This perspective can be used to inspire community-based initiatives and support the implementation of stricter climate legislation at local and national scales.

The variety of concern levels, from "Not concerned at all" to "Extremely concerned," demonstrates the many opinions within the community. Developing tailored communication methods is crucial for addressing different issues and misconceptions related to climate change to enhance a unified catastrophe risk reduction approach.

The data from the graph could be utilized to develop targeted teaching programs aimed at improving climate awareness by emphasizing the connection between personal experiences of climate-related disasters and broader climate trends. These programs are crucial for equipping individuals with the required knowledge and tools to actively engage in mitigation and adaptation activities, transforming concern into action.

The participants' strong worry and perception of increased disaster frequency highlight the necessity of developing comprehensive climate adaptation frameworks from a policy standpoint. Frameworks must focus the development of social and economic resilience in addition to physical infrastructure advancements.

Exploring Awareness and Perceptions of Coping Strategies for Climate-Induced Disasters

Table 17: Awareness and perception

Category	Frequency	Percent	Valid Percent	Cumulative Percent
Aware of Coping Strategies - Yes	46	45.1	48.4	48.4
Aware of Coping Strategies - No	49	48.0	51.6	100.0
Perceived Effectiveness - Not effective at all	52	51.0	54.2	54.2
Perceived Effectiveness - Slightly effective	2	2.0	2.1	56.3
Perceived Effectiveness - Moderately effective	33	32.4	34.4	90.6
Perceived Effectiveness - Very effective	6	5.9	6.3	96.9
Perceived Effectiveness - Extremely effective	3	2.9	3.1	100.0

The table contains a dataset that helps in comprehending how communities respond to problems posed by climate change. Approximately 45.1% of the participants are familiar with coping mechanisms, suggesting a moderate level of involvement in disaster preparedness efforts. Nevertheless, nearly half (48%) indicate a lack of understanding, underscoring a substantial deficiency in spreading knowledge and engaging with the community.

The data about perceived effectiveness presents a more troubling image. More than half of the participants (51%) think that the current coping tactics are completely ineffective, indicating a deep cynicism about the existing methods for catastrophe preparedness and adjustment. Merely 2% view these tactics as somewhat effective, underscoring the community's critical position.

Approximately 32.4% of the participants consider the coping mechanisms to be moderately useful, showing a certain level of confidence in the current measurements. However, only a tiny percentage of people find them very effective (5.9%) or extremely effective (2.9%), indicating that although some recognize their usefulness, overall confidence in these tactics is low.

The gap between awareness and perceived efficacy highlights the necessity for stronger, more efficient, and better communicative disaster management policies. Merely raising awareness of coping strategies is not enough without also improving their effectiveness and the community's confidence in them. The table is an important tool for policymakers and disaster management practitioners, indicating the need to review and enhance coping mechanisms to better meet community expectations and requirements.

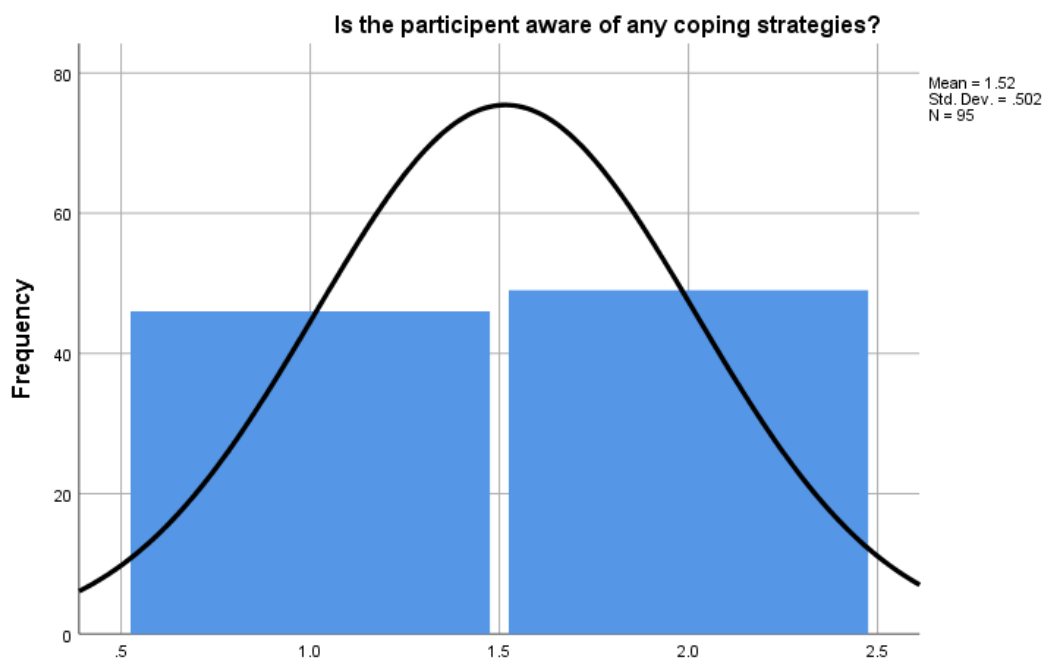


Figure 5-6: Participant aware of any coping strategies

The histogram shows a distribution with two notable peaks, indicating the possible presence of two distinct groups in the population with different levels of awareness of coping methods. The high at the value "1" on the x-axis likely signifies participants lacking familiarity with coping mechanisms, whereas the second peak near "2" implies awareness among participants.

The average result is 1.52, suggesting a trend towards increased awareness, but also revealing that a significant section of the population lacks awareness of coping mechanisms. The responses exhibit a limited range around the mean due to a standard deviation of 0.502, suggesting that they are not highly variable and tend to cluster around the two peaks.

Superimposing the normal curve on the histogram is a frequent technique used to compare

the observed distribution with the theoretical normal distribution. The data's deviation from the bell shape of the normal curve indicates that the distribution of awareness is not normally distributed. This could be due to several reasons, such as the sample population not being consistent in their exposure to information on coping methods or their own encounters with climate-related calamities.

The histogram data indicates a clear discrepancy in the population's comprehension of coping techniques. As a curious individual, I am eager to explore the fundamental reasons behind this division. Specific interventions may be needed to raise understanding of coping techniques, especially for persons with limited information. Further analysis could involve comparing awareness levels with demographic information, access to information, and previous experiences with climate-related disasters to better understand the factors influencing awareness levels.



Figure 5-7: Effectiveness

The histogram displays participants' perceptions of coping strategies' effectiveness, exhibiting a left-skewed distribution. Most replies cluster towards the lower end, suggesting a widespread belief that the coping mechanisms are not very successful. Most individuals concur that the tactics are not highly effective, as indicated by an average rating of 2.02. The standard deviation of 1.196 points reflects a variance in opinions among

participants, highlighting discrepancies in how individuals evaluate performance.

It is evident from the distribution's form that a minority of participants perceive the coping strategies as highly effective, indicated by the fewer bars on the right side of the histogram. The discrepancy between the distribution and the normal curve suggests that the perception of efficacy differs among the sample.

Interventions may be necessary to improve coping techniques or change the perception of their success because of the skewness. The sample size of 96 is adequate for preliminary analysis, but further validation is required to ensure its generalizability to the broader community.

How often do they engage in discussions or activities related to climate change and its impacts on their community?

Table 18: Involvement of discussion related to climate change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely	63	61.8	64.3	64.3
	Occasionally	21	20.6	21.4	85.7
	Frequently	14	13.7	14.3	100.0
	Total	98	96.1	100.0	
Missing	System	4	3.9		
Total		102	100.0		

This table presents data on the frequency with which individuals in a community discuss or engage in activities linked to climate change and its impacts. 61.8% of participants seldom engage in climate-related debates or activities, suggesting a potential lack of understanding, urgency, or resources for involvement. Only 13.7% are actively engaged, suggesting a subset of persons who are enthusiastic about climate issues in the community. The cumulative percentage column illustrates that as engagement frequency increases, the number of participants falls, highlighting a discrepancy between awareness and action. This data is crucial for understanding the level of community engagement in climate action and highlights the need for initiatives to improve participation and discussions on climate change and its impact at a local level.

How often do they engage in discussions or activities related to climate change and its impacts on their community?

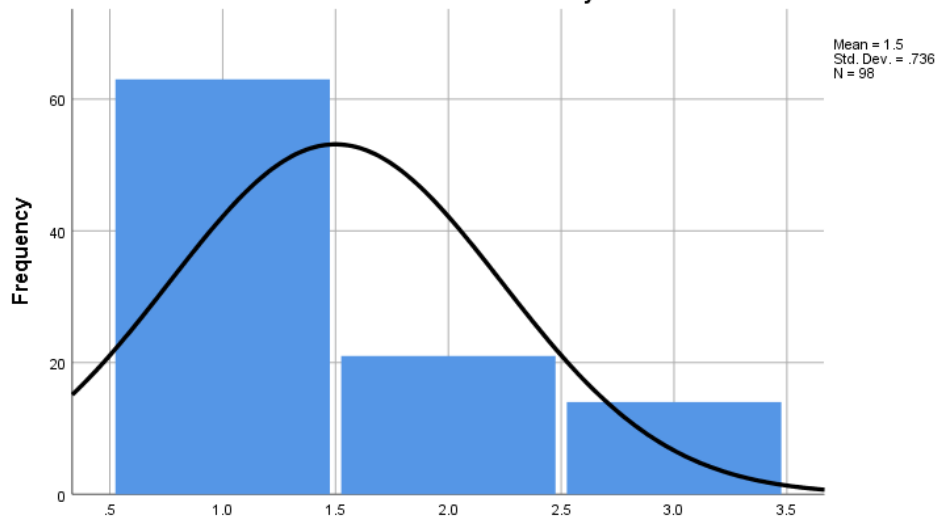


Figure 5-8: Activities related to climate change

The histogram shows that involvement in conversations or activities related to climate change is mostly rare, with an average of 1.5 indicating low overall participation. A standard deviation of 0.736 suggests a modest level of variability in responses. Most respondents tend to participate rarely, as shown by the bigger bar on the left side. The histogram shows a lack of frequent interaction at higher levels, suggesting a need for efforts to improve community engagement connected to climate issues. This distribution suggests an opportunity to improve community outreach and education in order to promote more participation in climate action.

How effective do they think about traditional coping strategies?

Table 19: Effectiveness of traditional strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not effective at all	40	39.2	41.2	41.2
	Slightly effective	40	39.2	41.2	82.5
	Moderately effective	12	11.8	12.4	94.8
	Very effective	5	4.9	5.2	100.0
	Total	97	95.1	100.0	
Missing	System	5	4.9		
Total		102	100.0		

Participants perceive the effectiveness of traditional strategies for dealing with climate change, as shown in the table. 82.4% of participants believe traditional coping techniques

are ineffective or slightly useful in the current context, indicating a prevailing pessimistic view on their usefulness. Only 17.6% of respondents view these approaches as slightly to very effective, indicating that some individuals still value customs and traditional knowledge. The distribution of responses indicates that traditional methods may need to be combined with modern strategies to enhance their effectiveness. The information underscores the importance of reevaluating and maybe broadening existing coping mechanisms to enhance support for communities facing challenges arising from climate change.



Figure 5-9: Traditional coping strategies

Displayed above is a histogram illustrating participants' perceptions of the efficacy of conventional coping mechanisms for addressing the consequences of climate change. Most individuals perceive these strategies as ineffective, since they are predominantly rated low on the effectiveness scale, with an average score of 1.81. The standard deviation of 0.846 indicates that responses are closely grouped around the mean, showing little heterogeneity in participant viewpoints.

Most comments are focused on the lowest efficacy rating of 1, indicating a general consensus that traditional coping mechanisms are inadequate for dealing with present

climatic concerns. A minority of participants assessed the efficacy as high (4 or 5 on the scale), as shown by the shorter bars on the right side of the histogram.

The skewed distribution curve indicates that the group of participants does not consider traditional tactics to be highly effective. The lack of input in the more efficient categories indicates a potential necessity to revise or adjust conventional methods to more effectively tackle present climate concerns.

Policymakers and practitioners in climate change adaptation may need to reassess the efficacy of traditional techniques in their communities, as most responses indicate a

Are they involving with any community organizations or groups that focus on climate change or disaster preparedness?

Table 20: Involvement with community organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	23.5	24.5	24.5
	No	74	72.5	75.5	100.0
	Total	98	96.1	100.0	
Missing	System	4	3.9		
Total		102	100.0		

tendency towards lower ratings. This histogram could help further explore the specific weaknesses of these tactics as perceived by the community.

The table displays the level of community involvement in groups that focus on climate change or disaster preparedness. Approximately 24.5% of participants are affiliated with community organizations, suggesting a robust group of engaged individuals. However, 75.5% of persons are not affiliated with these organizations, indicating a requirement for further community outreach and participation. Highlighting the significance of promoting more community engagement in climate and disaster-related organizations, since active involvement in these groups is crucial for efficient local reaction and preparedness. Examining the valid percentage reveals that organizations have an opportunity to expand their influence in the community and efficiently address the impacts of climate change.



Figure 5-10: Organization or groups that focus on climate change

The histogram displays the level of involvement in community organizations or groups focused on climate change or disaster preparedness among survey participants. The peak of the histogram indicates that the majority of responses are concentrated on lower levels of engagement, with an average involvement score of 1.76 on the scale. The data indicates a low standard deviation of 0.432, suggesting that responses are closely grouped around the mean, revealing a distinct pattern in the data. The distribution skews left, suggesting that fewer members are highly involved with these organizations or groups. The visual distribution and data suggest that there is potential for increased community participation in climate change initiatives and disaster preparedness programs.

Participant involvement in community activities related to climate change and disaster preparedness

Table 21: Participant involvement in community activities related to climate change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	72	70.6	73.5	73.5
	Moderate	19	18.6	19.4	92.9
	High	7	6.9	7.1	100.0
	Total	98	96.1	100.0	
Missing	System	4	3.9		
Total		102	100.0		

The figure indicates that 70.6% of participants engage in community activities related to disaster preparedness and climate change at a low level. Only 6.9% of respondents describe their level of involvement as high, while 18.6% indicate a moderate level. This pattern is confirmed by the accurate percentages, excluding any missing responses. 73.5% of respondents had modest interest, 92.9% had moderate interest, and 100% had high interest. Improving community engagement and participation in climate-related actions requires implementing effective tactics based on the distribution data. Based on the results, there is a significant opportunity for community leaders and groups to increase participation in disaster preparedness and climate change mitigation.

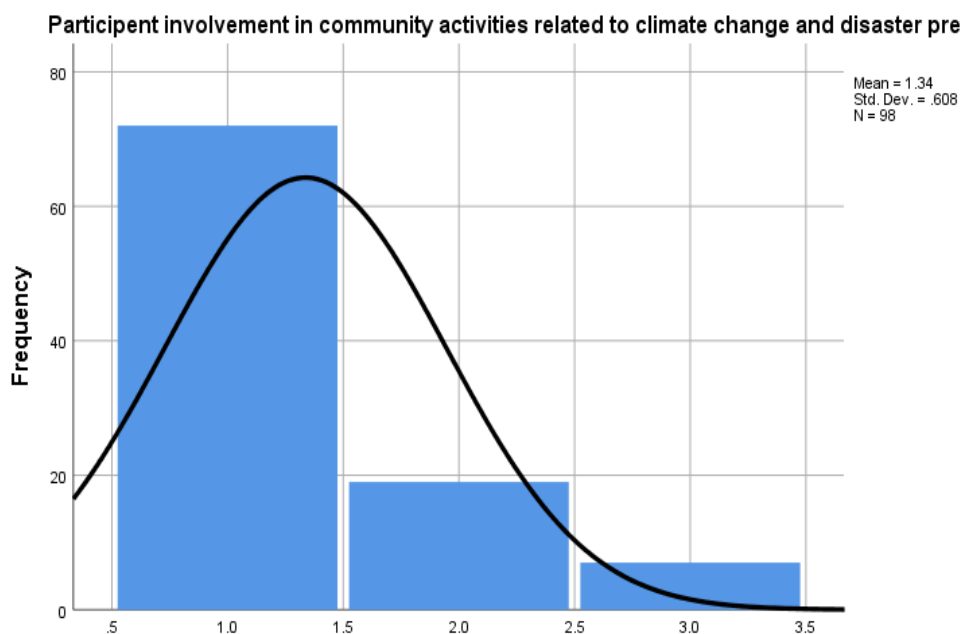


Figure 5-11: Participant involvement in community activities related to climate change

Based on the histogram, participation in community activities related to climate change and disaster preparedness is generally low, with an average engagement score of 1.34. The small standard deviation of 0.608 suggests that responses are tightly clustered around the mean, indicating minimal active participation from the majority. The high occurrence of low engagement levels highlights a significant opportunity to improve community involvement in climate-related initiatives.

The effectiveness of government or community initiatives in mitigating the impact of climate-induced disasters

Table 22: Effectiveness of government in mitigating disaster

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	52	51.0	53.1	53.1
	Fair	30	29.4	30.6	83.7
	Good	9	8.8	9.2	92.9
	Very Good	3	2.9	3.1	95.9
	Excellent	4	3.9	4.1	100.0
	Total	98	96.1	100.0	
Missing	System	4	3.9		
Total		102	100.0		

The success of local or governmental actions in reducing the impact of climate-related disasters is shown in this table, where responses range from "Poor" to "Excellent." 53.1% of valid replies, or most respondents, rated these projects as "Poor," demonstrating a high degree of doubt over their efficacy. On the other hand, just 4.1% of valid responses indicated that participants thought the initiatives were "Excellent," indicating a need for improvement. A little percentage (3.9%) of replies were missing or not recorded, making up 96.1% of the survey respondents who provided valid responses overall. Overall, the evidence points to the existence of a critical viewpoint on the overall impact of certain projects, even though some are acknowledged favorably.

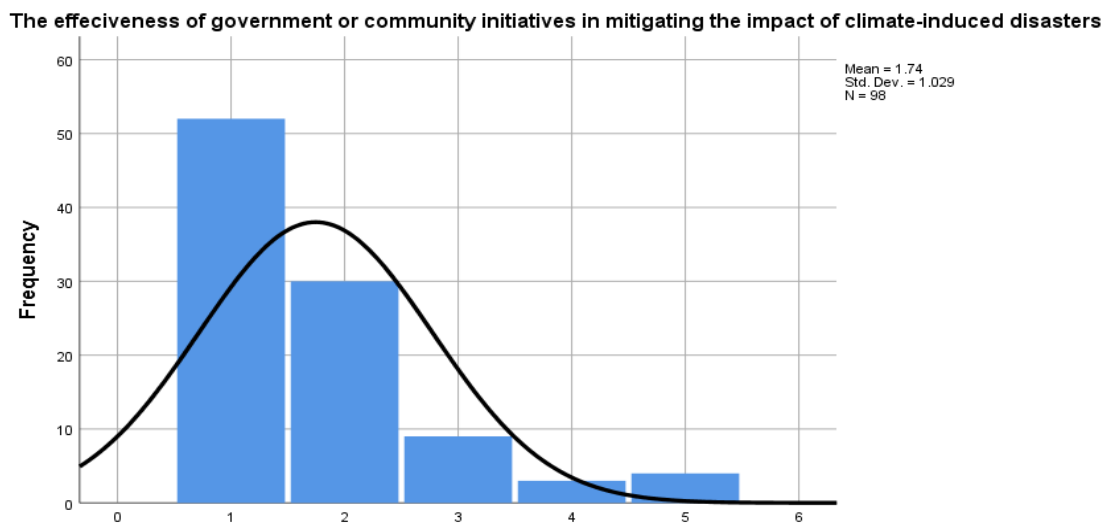


Figure 5-12: Effectiveness of government or community initiative in mitigating the impact of climate-induced disasters

The histogram suggests that the effectiveness of government or community activities in dealing with climate-induced disasters is generally perceived as low, with a mean value of 1.74 positioned near the bottom end of the scale. The distribution is right-skewed, indicating that the majority of participants rank the effectiveness as moderate, with only a small number rating it as very good or exceptional. A standard deviation of 1.029 suggests a notable diversity in opinions, representing a broad range of experiences and perspectives on these efforts. There is potential to improve the effectiveness of the efforts, as some persons value them but there is still room for enhancement.

Participant involvement in community activities related to climate change and disaster preparedness

Table 23: Participant involvement activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	72	70.6	73.5	73.5
	Moderate	19	18.6	19.4	92.9
	High	7	6.9	7.1	100.0
	Total	98	96.1	100.0	
Missing	System	4	3.9		
Total		102	100.0		

Based on the data provided in the table, the majority of participants, 73.5%, demonstrate limited involvement in community activities related to climate change and disaster preparedness. Only 19.4% of participants are moderately involved, while merely 7.1% perceive their involvement as high. This distribution implies a significant opportunity for increased engagement and suggests that present initiatives may not be properly reaching or motivating the broader community. Based on the cumulative percentage, there is a decline in the number of participants as the level of engagement rises, suggesting a potential discrepancy between community requirements and the activities offered. According to the research, local leaders should develop more interactive, user-friendly, and relevant programs to boost participation in climate and disaster preparedness initiatives.

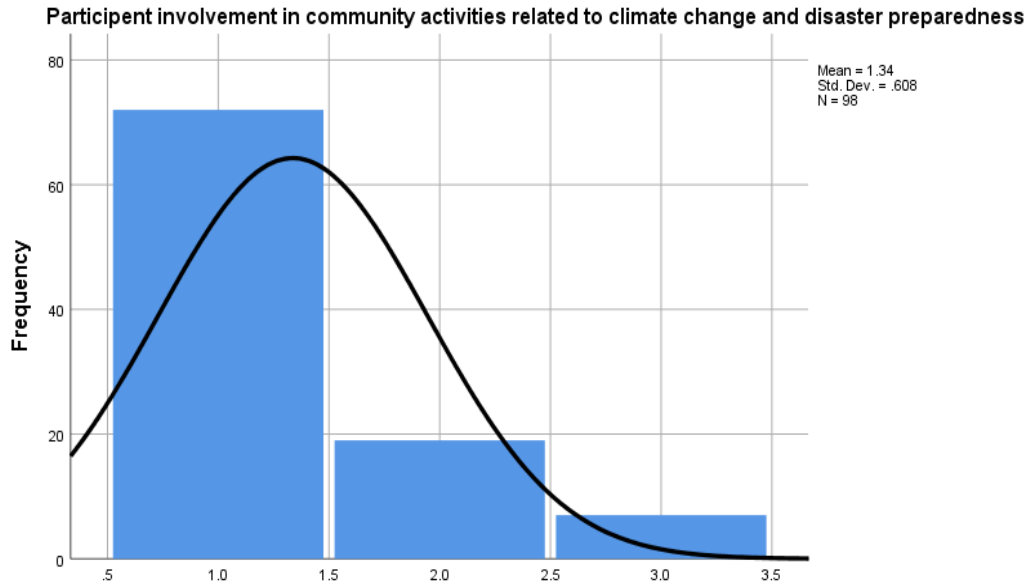


Figure 5-12: Participant involvement in community activities related to climate change

The histogram shows that participants' engagement in community activities concerning climate change and disaster preparedness is typically low, with an average value of 1.34 on the engagement scale. The standard deviation of 0.608 indicates that responses are closely grouped around the mean, suggesting a lack of active involvement among the majority. The bias towards lower levels of involvement indicates a notable chance to enhance community participation in climate-related projects.

Do they think that the government appropriately considers age groups' perspectives and needs in climate change and disaster management policies?

Table 24: Government consideration about age groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	35	34.3	35.7	35.7
	No	63	61.8	64.3	100.0
	Total	98	96.1	100.0	
Missing	System	4	3.9		
Total		102	100.0		

Do they think that the government appropriately considers age groups' perspectives and needs in climate change and disaster management policies?

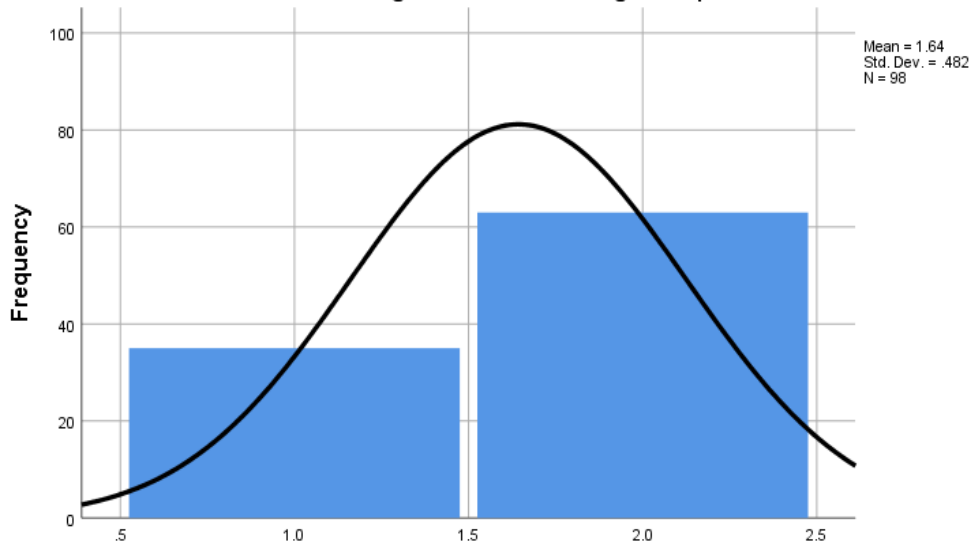


Figure 5-13: Government appropriately considers age groups perspective

Analyzing the histogram and table data offers useful insights into the government's role in climate change and catastrophe management. 64.3% of poll participants believe that the governing body is not adequately considering the viewpoints and requirements of different age demographics in its policies. The average score of 1.64, likely on a scale from 1 to a higher value representing comprehensive deliberation, strengthens the prevailing sense of inadequacy. The standard deviation of 0.482 indicates that opinions vary but tend to cluster closely around the mean, suggesting a consensus. The concentration of responses at the lower end of the scale suggests a need for more comprehensive policy development. The positively skewed distribution of the histogram reinforces the table's indication that a significant section of the population feels that their wants are not sufficiently met by current policy initiatives. This study highlights the significance of integrating age-inclusive methods into governmental plans to tackle issues related to climate change.

Sources of information do they rely to stay informed about climate induced disasters

Table 25: Sources of information

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Local news	33	32.4	33.3	33.3
	Social media	42	41.2	42.4	75.8
	Community meetings	12	11.8	12.1	87.9
	Government announcements	2	2.0	2.0	89.9
	Other	10	9.8	10.1	100.0
	Total	99	97.1	100.0	
Missing	System	3	2.9		
Total		102	100.0		

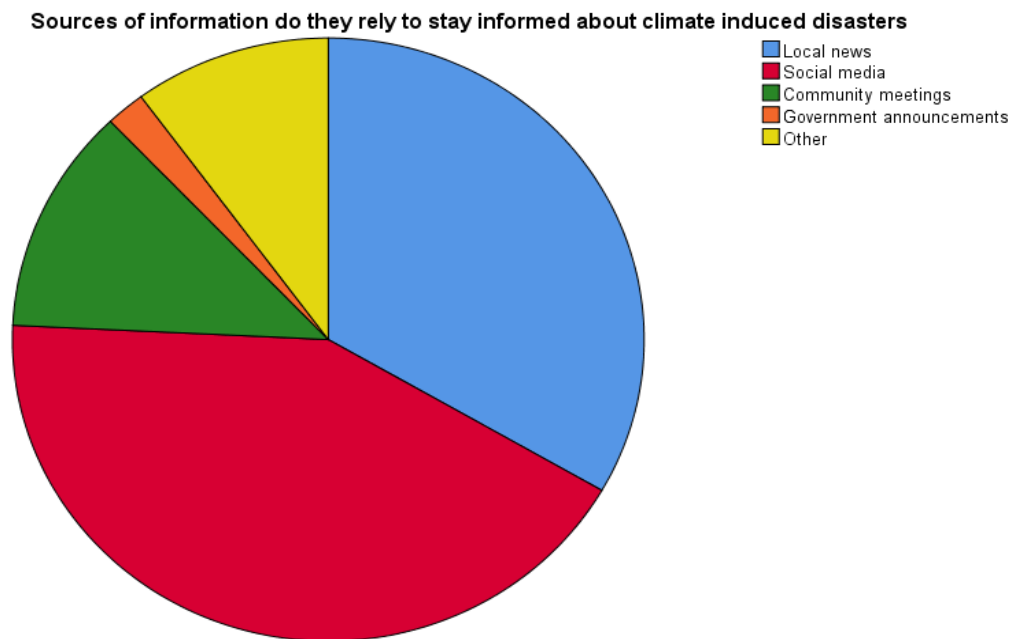


Figure 5-14: Source of information about climate induced disasters

The pie chart and the table data offer valuable insights into the sources people use to stay informed about climate-induced disasters. 42.4% of respondents rely on social media as their main source, highlighting its increasing importance for sharing news and facilitating public conversations. Local news plays a crucial role as a significant source, with one-third of the participants (33.3%) depending on it. This indicates that traditional media

continues to be a vital channel for climate-related information. On the other hand, community meetings and government announcements are less commonly used, with only 12.1% and 2.0% of respondents utilizing them, suggesting that these sources might be underused or less available. The "Other" category implies that 10.1% of participants utilize additional, unspecified sources, indicating the various methods people use to gather information on this important subject.

How frequently do they receive updates or information from local authorities about climate-induced disaster preparedness?

Table 26: Update/information from local authorities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rarely	35	34.3	35.7	35.7
	Occasionally	27	26.5	27.6	63.3
	Sometimes	9	8.8	9.2	72.4
	Frequently	17	16.7	17.3	89.8
	Always	10	9.8	10.2	100.0
	Total	98	96.1	100.0	
Missing	System	4	3.9		
Total		102	100.0		

Based on the table, the majority of participants (35.7%) infrequently receive updates from local authorities about climate-induced catastrophe preparedness. 27.6% of people receive updates occasionally, while 17.3% receive updates regularly, indicating a level of communication from authorities. There is a need to enhance the consistency and extent of communication from local authorities about disaster preparedness, as only 10.2% consistently receive updates.

How frequently do they receive updates or information from local authorities about climate-induced disaster preparedness?

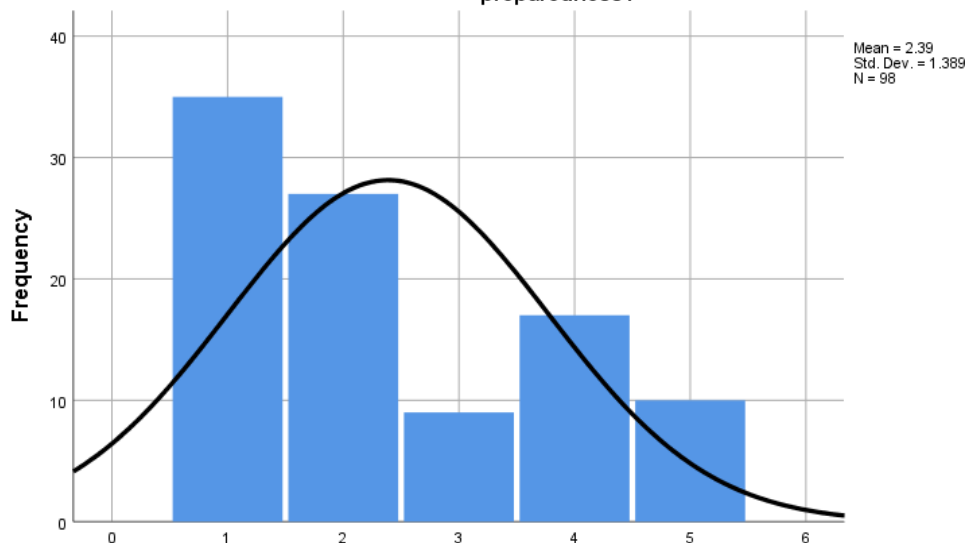


Figure 5-15: Information from local authorities about climate induced disaster

The histogram illustrates the frequency of participants being notified by local authorities about climate-related catastrophe preparedness. The distribution is skewed towards lower frequencies, with the average frequency rating being 2.39, suggesting that most persons receive updates sometimes. A standard deviation of 1.389 indicates a wide range of replies, demonstrating significant variety in the frequency with which individuals receive information from local authorities. A minority of participants receive regular updates, as shown by the shorter bars on the right side of the histogram. The graph highlights a potential lack of consistent communication from the local authority to the community regarding preparation for climate-related calamities.

How satisfied they are with the current state of infrastructure in their community to mitigate the impact of climate-induced disasters?

Table 27: Satisfaction level with the current state

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied at all	60	58.8	61.2	61.2
	Slightly satisfied	32	31.4	32.7	93.9
	Moderately satisfied	4	3.9	4.1	98.0
	Very satisfied	2	2.0	2.0	100.0
	Total	98	96.1	100.0	
Missing	System	4	3.9		
Total		102	100.0		

The research shows that 61.2% of participants are highly unsatisfied with their community's infrastructure in dealing with climate-induced disasters. Only a small fraction (6.1%) exhibit satisfaction levels beyond minor, indicating a need for enhancement in infrastructure readiness. An analysis of the data indicates a pressing need for improving community infrastructure to increase resilience against the impacts of climate change.

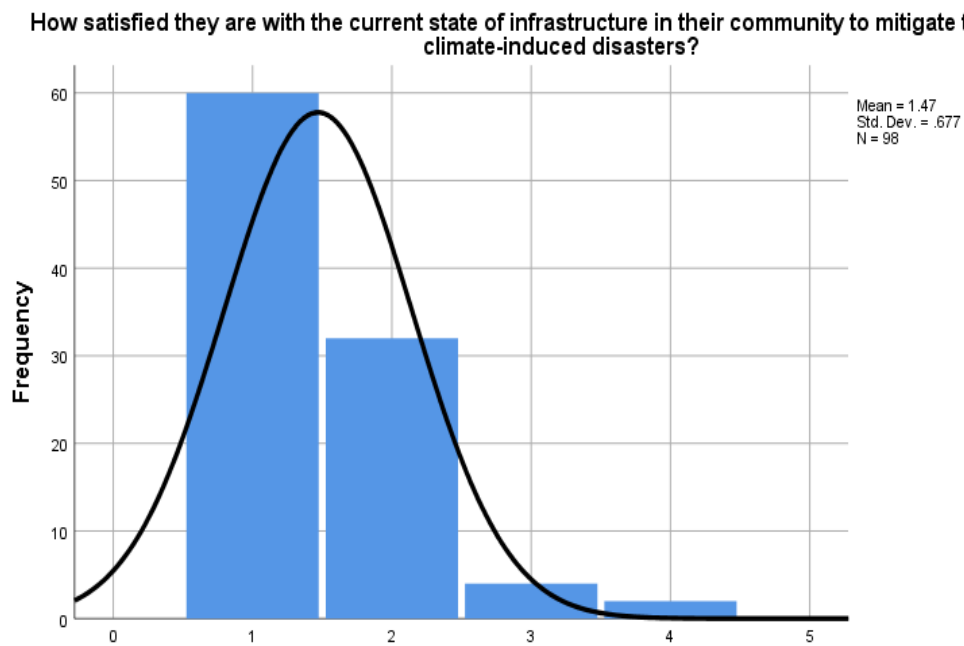


Figure 5-16: Current state of infrastructure

The histogram indicates a clear inclination towards discontent among participants about the infrastructure's ability to address climate-induced calamities. With an average satisfaction rating of 1.47, which is near the minimum of the scale, it appears that most participants are highly unsatisfied. The small standard deviation of 0.877 indicates that responses are closely clustered around the mean, highlighting the prevailing sense of dissatisfaction. There is a conspicuous absence of high scores for participant satisfaction, since no bars are visible near the right end of the scale. The data emphasizes the urgent requirement for improving infrastructure to boost community resilience against the effects of climate change.

How optimistic they are about the future resilience of their community in the face of climate-induced disasters?

Table 28: Optimization about the future resilience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not optimistic at all	35	34.3	40.2	40.2
	Slightly optimistic	41	40.2	47.1	87.4
	Moderately optimistic	8	7.8	9.2	96.6
	Very optimistic	3	2.9	3.4	100.0
	Total	87	85.3	100.0	
Missing	System	15	14.7		
Total		102	100.0		

40.2% of the participants expressed a lack of optimism about their community's resilience to climate-related calamities, indicating a sense of anxiety. 56.7% of respondents are moderately optimistic, while only 3.4% are very optimistic, suggesting a balance between hope and realism or caution. The significant amount of participants lacking optimism underscores the need for more robust efforts to improve the resilience of communities and maybe stimulate discussions about these efforts.

How optimistic they are about the future resilience of their community in the face of climate-induced disasters?

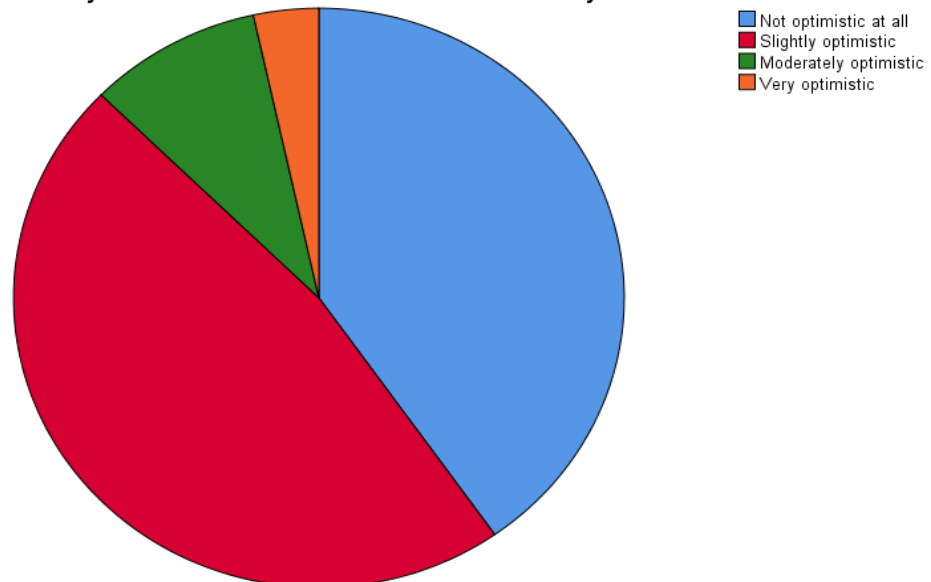


Figure 5-17: Future resilience of their community in the face of climate-induced disasters

The pie chart depicts the community's perspective on their resilience to climate-related disasters in the future. The largest area of the pie chart, shown in red, indicates that a considerable majority of respondents are not hopeful, underscoring a huge concern

regarding the community's ability to address climate concerns. The blue section, symbolizing persons with a mild sense of optimism, is nearly as important, indicating a careful attitude despite some pleasant emotions. The smaller orange and green slices symbolize the 'Moderately positive' and 'Very optimistic' categories, suggesting that only a minority of individuals hold a robust positive perspective on future resilience. The chart shows a slight positive sign, but overall there is more concern, which may suggest a necessity for enhanced climate resilience strategies.

Overall Analysis:

Table 29: Overall analysis of case study 2

Category	Yes/High/Low Frequency	No/Moderate/High Frequency	Percent Yes/High/Low	Percent No/Moderate/High
Awareness of Coping Strategies	46	49	48.4%	51.6%
Effectiveness of Coping Strategies	Low: 52	High: 12	Low: 53.1%	High: 14.3%
Involvement in Climate Activities	Low: 72	High: 7	Low: 73.5%	High: 7.1%
Sources of Information (Primary: Social Media)	Social Media: 42	Local News: 33	Social Media: 42.4%	Local News: 33.3%
Update Frequency from Authorities	Rarely: 35	Always: 10	Rarely: 35.7%	Always: 10.2%
Infrastructure Satisfaction	Not Satisfied: 60	Very Satisfied: 2	Not Satisfied: 61.2%	Very Satisfied: 2.0%
Optimism for Future Resilience	Not Optimistic: 35	Very Optimistic: 3	Not Optimistic: 40.2%	Very Optimistic: 3.4%

Studying coping mechanisms for climate-induced disasters in the Barguna District reveals a complex perspective on community participation, attitudes, and preparedness. The data indicates that most community members show minimal involvement in climate-related activities, implying possible deficiencies in engagement and participation initiatives by local authorities or groups. Relying on social media and local news as primary sources of information may help increase community engagement.

Most individuals are dissatisfied with the current infrastructure, since they believe it is ineffective in mitigating the negative impacts of climate-induced disasters. There is a widespread feeling of pessimism about the future ability to recover, possibly because of doubts about the efficiency of infrastructure and response strategies.

There is a notable disparity between the community's perception of coping mechanisms and their perceived effectiveness. Approximately half of the participants are aware of coping methods, but a significant number find them to be unsuccessful, indicating a potential discrepancy between knowledge of the tactics and their practical efficacy.

Participants are worried about the sporadic updates from local officials on disaster readiness, which may be affecting their optimism and contentment with infrastructure. The absence of communication highlights a crucial area for improvement, as regular and timely updates are vital for effective disaster planning and resilience development.

The data indicates a significant need for enhanced emphasis on infrastructure development, community outreach, and education to enhance local coping mechanisms in the Barguna District. It is essential to engage community members more efficiently and ensure that coping mechanisms are not only recognized but also trusted and considered beneficial by the community to improve resilience against climate-induced disasters.

CHAPTER 6: SYNTHESIS OF RESEARCH FINDINGS

6.1. Overview

The study, "Community Perceptions and Coping Strategies in the Face of Climate-Induced Disasters in Barguna District" emphasizes the community's knowledge but lack of involvement in climate initiatives, as well as gender participation gaps and reliance on rural viewpoints. While recognizing the urgency of climate-related disasters, there is a crucial evaluation of government efforts and a call for enhanced, more inclusive policies. Enhancing educational programs, leveraging social media for more engagement, and addressing infrastructure shortcomings are essential for fostering resilience against climate problems.

6.2. Findings Summary

The results of the case studies conducted in Barguna District regarding community views and coping methods in the face of climate-induced disasters can be outlined as follows:

1. The community shows a high level of awareness of climate change but has limited involvement in activities linked to climate change.
2. Gender imbalance and rural representation are significant in climate response activities.
3. Most individuals perceive government efforts to tackle climate change as inadequate, underscoring a discrepancy between policy measures and popular anticipations.
4. Educational initiatives centered on climate awareness are on the rise, laying the groundwork for more knowledgeable citizen involvement.
5. Intergenerational collaboration, essential for successful crisis management techniques, is lacking.
6. People of different age groups feel overlooked by policies, suggesting a need for policy enhancement.
7. The community is worried about future resilience and stresses the significance of

establishing trust in disaster management.

8. The community's ability to recover from challenges is strongly connected to the belief that there is not enough infrastructure in place to prevent disasters.

9. Social media is vital for giving information, but local officials' updates are irregular, highlighting communication gaps.

10. Individuals who have resided in the area for a long time have a deep understanding of the region's climate challenges, even though they are not very involved in climate-related projects.

6.3. Summary of Objectives:

The thesis sought to investigate the community's perspectives on climate-induced catastrophes in Barguna District and analyze the local coping strategies employed to deal with and adapt to these disasters. The secondary aims were to assess the efficacy, durability, and flexibility of existing coping strategies in response to climate pattern changes, as well as the socio-economic influences on perceptions of climate-induced disasters and coping strategy decisions.

The case studies highlight a community that has a good grasp of climate change but lacks involvement in climate-related projects, revealing a gap between awareness and action. The contrast noted aligns with the primary objective, emphasizing the significance of understanding and then correcting the disparity between community perceptions and their involvement in coping strategies. Socio-economic factors significantly influence community involvement, which is intimately tied to secondary goals, as seen by the gender participation gap and prevalence of rural perspectives. The community's skepticism towards government initiatives and perceived inadequate infrastructure for disaster mitigation indicate worries about the effectiveness of present coping techniques. This question highlights the importance of assessing and improving the sustainability and adaptability of these tactics, as outlined in the secondary objectives.

Moreover, relying on informal sources like social media for information and receiving irregular updates from local authorities highlight communication deficiencies that may be enhanced to increase community involvement and the implementation of coping

mechanisms. The results show a basic level of awareness and concern in the community, emphasizing the need for improved coping techniques and disaster management policies that consider the socio-economic variables of the Barguna District. Highlighting the importance of comprehending community attitudes, evaluating the efficacy of coping mechanisms, and considering socio-economic aspects in enhancing resilient communities during climate-induced disasters is in line with the thesis goals.

6.4. Case Study Integration

Through analyzing the Barguna District case studies on community views and coping methods in response to climate-induced disasters, we reveal a multifaceted terrain of awareness, involvement, and resilience. There is a clear difference between the community's awareness of climate change impacts and their active participation in initiatives to tackle and adjust to them, underscoring the necessity for more involvement. The gender imbalance and rural-centric focus on climate action worsen the current disparity, highlighting the socio-economic and cultural barriers to inclusive involvement. Governmental initiatives to tackle climate consequences may be insufficient, but the development of educational programs suggests a possibility for empowering the community. The studies emphasize a significant lack of collaboration across different generations and a general skepticism about the effectiveness and inclusiveness of current policy frameworks. The community's doubt about their ability to withstand future calamities emphasizes the need for steps to improve confidence in disaster preparedness and response skills.

In addition, the lack of infrastructure for disaster mitigation was directly linked to the community's worries about their resilience to climate-related challenges. Social media plays a crucial role as a main source of information, highlighting a notable gap in disaster communication and engagement strategies due to the sporadic updates from local authorities. However, the community's demographic composition, with many long-term residents, offers a valuable source of local knowledge and experience that could improve coping strategies.

Examining the findings from the Barguna District emphasizes the complex process of handling climate-induced disasters in communities. Emphasizing the significance of a

thorough approach that encourages community participation, improves infrastructure, and fosters a pleasant and resilient environment. By combining traditional wisdom with modern scientific understanding and employing digital platforms for better communication, resilience in Barguna District can be enhanced in the face of climatic problems.

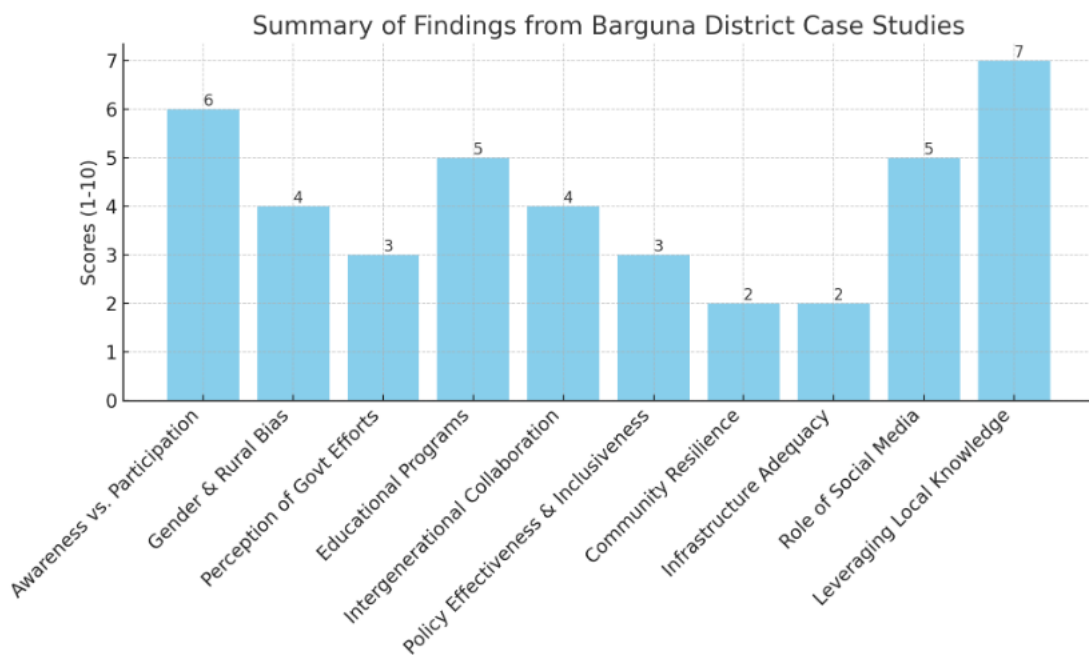


Figure 6-1: Findings from Barguna District case studies

The graph summarizes the results of case studies conducted in Barguna District, illustrating various aspects of community perceptions and coping strategies in reaction to climate-induced disasters. The rating for each section ranges from 1 to 10, with 10 being the highest level of satisfaction or optimism. The visual display highlights key areas of concern, such as 'Community Resilience' and 'Infrastructure Adequacy', which scored the lowest, indicating the necessity for prompt response. 'Leveraging Local Knowledge' and 'Awareness vs. Participation' scored higher, showing strengths and possibilities for developing resilience in the community.

CHAPTER 7: RECOMMENDATION AND CONCLUSION

7.1. Recommendation

1. Foster active community involvement: In climate action and disaster preparedness through targeted awareness programs and participatory approaches that address gender and rural-urban disparities, aiming to enhance community engagement and participation.
2. Enhance Government-Community Collaboration: Enhance communication and trust between government entities and communities, ensuring that policies and interventions are responsive to local needs and perceptions.
3. Enhance Educational Programs for Climate Literacy: Broaden and customize educational initiatives to enhance climate literacy, with a focus on local relevance and practical knowledge.
4. Bridge the Gap Between Policy and Practice: Ensure effective communication and implementation of disaster management policies at the local level, connecting national strategies with community expectations.
5. Invest in Infrastructure: Prioritize investments in resilient infrastructure to mitigate the impacts of climate-induced disasters, with a focus on the most vulnerable areas.
6. Use digital platforms for communication and engagement: Take advantage of social media and other digital platforms to enhance disaster communication, raise awareness, and mobilize the community.
7. Promote Intergenerational Collaboration: Encourage and facilitate the exchange of knowledge and practices related to climate adaptation and disaster resilience across different generations.
8. Ensure Inclusivity in Disaster Management Policies: Make sure that disaster management policies are inclusive. Create policies that take into account the varying needs of different demographic groups, including considerations for gender and age, in order to promote fair and effective disaster risk reduction and management.

9. Leverage Local Knowledge and Experience: Incorporate local knowledge and experience into disaster management planning and implementation to improve the relevance and effectiveness of strategies.

10. Foster Private Sector Engagement: Encourage the active participation of the private sector in disaster risk reduction efforts by offering incentives and forming partnerships that tap into their resources and innovative capabilities.

7.2. Conclusion

The majority of respondents (78.4%) believe that the frequency of climate-induced disasters has increased, reflecting a high level of concern. 75% of people who believe disasters are happening more often and considering climate change as a serious and growing problem. 3.9% people view the climate disaster mitigation measures very positively, highlighting the 92.9% community's concern and the need for better strategies. The significance of a thorough strategy is emphasized, with an emphasis on improving participation, infrastructure, using local expertise, and utilizing digital tools to enhance communication and preparedness.

7.3. Limitation

A disadvantage of the study is its limited sample collection, which may restrict its broader applicability. There is a potential for bias due to the reliance on self-reported data. The ever-changing nature of climate change may render findings obsolete as time goes on. Having limited access to a wide range of demographic groups could potentially influence perspectives. The effectiveness of recommended strategies has not been tested in this specific context. The study does not thoroughly investigate the long-term viability of coping strategies. It assumes equal access to digital communication across all demographics. Ultimately, the study's ability to implement its findings is hindered by the unpredictable nature of governmental response and policy changes.

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Appendix – I

Study Questionnaire for Case Study 1

1. Name of the respondent:
2. What is your gender?
 - Male
 - Female
3. What is your age?
 - 18-25
 - 26-35
 - 36-45
 - 46-55
 - 56-65
 - 66 and above
4. How long have you been a resident of the Barguna District?
 - Less than 5 years
 - 5-10 years
 - 11-20 years
 - More than 20 years
5. Which of the following best describes your living situation?
 - Urban
 - Suburban
 - Rural
6. What is your occupation?
7. Are you involved in any community organizations or groups that focus on climate change or disaster preparedness?
 - Yes
 - No
8. How would you rate your level of involvement in community activities related to climate change and disaster preparedness?
 - Low
 - Moderate
 - High
9. How concerned are you about climate-induced disasters in your community?

- Not concerned at all
- Slightly concerned
- Moderately concerned
- Very concerned
- Extremely concerned

10. Do you think climate-induced disasters have increased in frequency over your lifetime?

- Yes
- No

11. How would you rate the effectiveness of government or community initiatives in mitigating the impact of climate-induced disasters?

- Poor
- Fair
- Good
- Very Good
- Excellent

12. Are you aware of any specific measures or strategies implemented in your community to address climate-induced disasters?

- Yes
- No

13. In your opinion, what role should younger generations play in contributing to the resilience and adaptation of communities to climate-induced disasters?

14. How often do you engage in discussions or activities related to climate change and its impacts on your community?

- Rarely
- Occasionally
- Frequently
- Always

15. Do you believe there is a need for increased educational programs on climate change and disaster preparedness in your community?

- Yes
- No

16. What sources of information do you rely on the most to stay informed about climate-induced disasters? (Select all that apply)
- Local news
 - Social media
 - Community meetings
 - Government announcements
 - Other
17. Are there any specific challenges or barriers you perceive in addressing climate-induced disasters in your community? Please specify.
18. How would you rate the level of collaboration and coordination among different age groups in your community when it comes to addressing climate-induced disasters?
- Low
 - Moderate
 - High
19. Do you feel that the government adequately considers the perspectives and needs of different age groups in their policies and initiatives related to climate change and disaster management?
- Yes
 - No
20. How optimistic are you about the future resilience of your community in the face of climate-induced disasters?
- Not optimistic at all
 - Slightly optimistic
 - Moderately optimistic
 - Very optimistic
 - Extremely optimistic

Study Questionnaire for Case Study 2

1. Demographic Information:

- i) Age: _____
- ii) Gender: (Male/Female)
- iii) How many years have you lived in the Barguna District? _____
- iv) Occupation: _____
- v) Type of community: (Urban/Suburban/Rural)
- vi) Educational background: (Primary School, Secondary School, College, University, Other)

2. Community Perceptions:

- i) How concerned are you about climate-induced disasters in your community?
 - Not concerned at all
 - Slightly concerned
 - Moderately concerned
 - Very concerned
 - Extremely concerned
- ii) Do you think climate-induced disasters have increased in frequency over your lifetime? (Yes/No)
- iii) What type of climate disasters do you consider most threatening? _____

3. Awareness of Coping Strategies:

- i) Are you aware of any coping strategies that the community has implemented to address climate-induced disasters?

Yes

No

ii) How effective do you think these coping strategies are in mitigating the impact of climate-induced disasters?

Not effective at all

Slightly effective

Moderately effective

Very effective

Extremely effective

4. **Effectiveness of Coping Strategies:**

i) How effective do you believe the traditional coping strategies used in your community are against climate-induced disasters?

Not effective at all

Slightly effective

Moderately effective

Very effective

Extremely effective

ii) Can you identify and describe any specific traditional or indigenous practices that your community relies on to cope with climate-induced disasters?

5. **Community Engagement:**

i) How often do you engage in discussions or activities related to climate change and its impacts on your community?

Rarely

Occasionally

Frequently

Always

ii) Are you involved in any community organizations or groups that focus on climate change or disaster preparedness?

Yes

No

iii) How would you rate your level of involvement in community activities related to climate change and disaster preparedness?

Low,

Moderate

High

6. Perception of Government Initiatives:

i) How often do you engage in discussions or activities related to climate change and its impacts on your community?

ii) How would you rate the effectiveness of government or community initiatives in mitigating the impact of climate-induced disasters?

Poor

Fair

Good

Very Good

Excellent

iii) Do you feel that the government adequately considers the perspectives and needs of different age groups in their policies and initiatives related to climate change and disaster management?

Yes

No

7. Information and Communication:

- i) What sources of information do you rely on the most to stay informed about climate-induced disasters? Select all that apply
- Local news
 - Social media
 - Community meetings
 - Government announcements
 - Other
- ii) How frequently do you receive updates or information from local authorities about climate-induced disaster preparedness?
- Rarely
 - Occasionally
 - Sometimes
 - Frequently
 - Always

8. Infrastructure and Preparedness:

- i) How satisfied are you with the current state of infrastructure (e.g., shelters, warning systems) in your community to mitigate the impact of climate-induced disasters?
- Not satisfied at all
 - Slightly satisfied
 - Moderately satisfied
 - Very satisfied
 - Extremely satisfied
9. How optimistic are you about the future resilience of your community in the face of climate-induced disasters?
- Not optimistic at all
 - Slightly optimistic
 - Moderately optimistic

- Very optimistic
- Extremely optimistic

10. Are there any specific challenges or barriers you perceive in addressing climate-induced disasters in your community? Please specify.

11. What factors contribute to the success or failure of coping strategies in your community?

12. Are there any cultural or traditional practices that you believe enhance or hinder the effectiveness of coping strategies in your community?

13. Additional comments or insights:

Appendix – II



Conducting field visits to get insight into the circumstances and experiences of local people



Focus group discussion to understand diverse opinion



Survey for finding the ground scenery