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Quantitative Section

Objective 1: To analyze the effects of climate change from a community perspective/s on health, livelihoods, and the local environment in the project locations.

Relationship Between Climate Change and Health Problems

Table 1. *Relationship Between Climate Change and Health Problems*

	Affected by Climate Change		
Variable	No (%)	Yes (%)	p-value
Climate Change Impact (i.e. Health Problem)			0.18
No (%)	0.00	29.95	
Yes (%)	1.82	68.23	

From the table, we see that none (0.00%) of the people who are not affected by climate change reported any health problems. However, among those who are affected by climate change, 68.23% reported having health issues.

Despite this difference, the p-value (0.18) is greater than 0.05, which means the link between health problems and climate change is not strong or significant. In simple terms, this suggests that health issues can be caused by many other factors, such as air pollution, genetics, lifestyle, or existing medical conditions, rather than just climate change. So, based on this data, there is no clear or proven connection between experiencing health problems and being affected by climate change.

Impact of climate change on health, livelihood, and local environment

Table 2. *Impact of climate change on health, livelihood, and local environment*

Variables	Odds Ratio	p-value
Intercept	6.19	0.98
Different Climate Change Experience		
No	-	-
Yes	0.000007	0.98
Income Loss		
No	-	**-**
Yes	7.35	**<0.001**
Migration Due to Climate Change		
No	-	**-**
Yes	0.59	**0.03**

The above table shows a logistic regression model. We used it to check the effects of climate change from a community perspective on health livelihoods, and the local environment in the project location.

Here, we can see the p-value is less than 0.05 for income loss and migration due to climate change. Therefore, we can say that income loss and migration have a significant impact on climate change. Additionally,

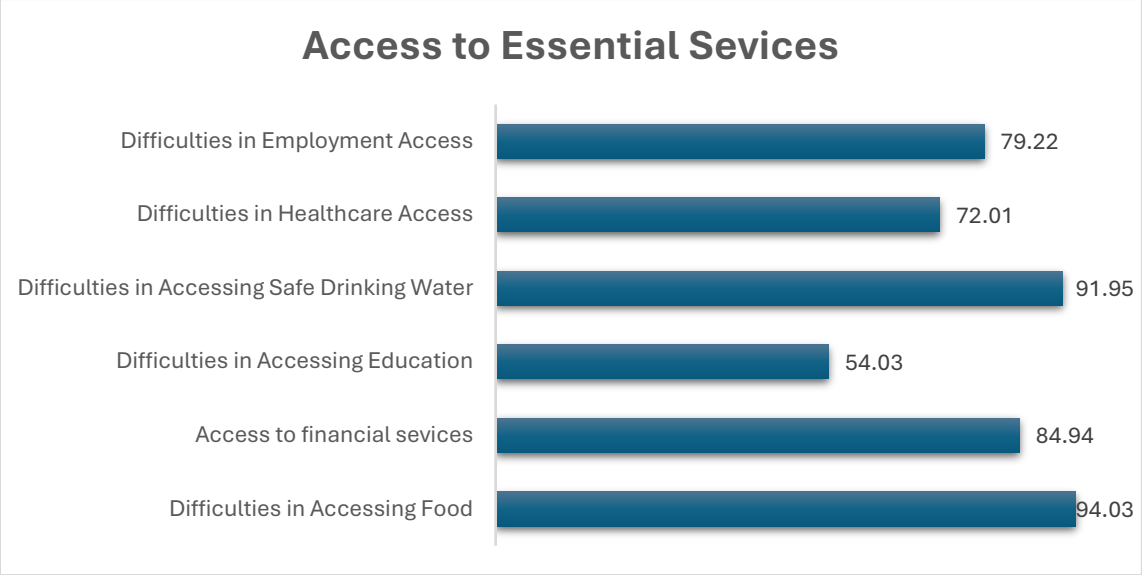
- If a person loses income, their chances of being affected by climate change are 7.35 times higher.
- If people migrate from one place to another place, their chances of being affected by climate change are 0.59 times lower.

Conclusion

This study examines the impact of climate change from a community perspective, focusing on health, livelihoods, and the local environment in the project locations. The findings suggest that climate change significantly affects these aspects, particularly through economic hardship and migration patterns. People who experience income loss are much more likely to be affected by climate change, indicating that financial instability increases vulnerability. On the other hand, migration appears to reduce exposure to climate change impacts, possibly because relocating helps individuals and communities adapt to changing environmental conditions. Overall, these results highlight the far-reaching effects of climate change on daily life, emphasizing the need for stronger adaptation strategies to protect communities from its negative consequences. Addressing income security, improving local resilience, and supporting sustainable migration policies could help mitigate these challenges in affected areas.

Objective 2: To examine the level of access to employment, healthcare, and other essential services.

Figure 1: Distribution of Access to Essential Services



The bar chart highlights the significant challenges people face in accessing essential services. The most critical issue appears to be food insecurity, with an overwhelming majority (94.03%) struggling to obtain sufficient food. Similarly, a large proportion of respondents reported difficulties in accessing safe drinking water (91.95%), which is a fundamental necessity for health and well-being. The majority of respondents have access to financial services with 84.94%, as many individuals do not face barriers to banking, credit, and economic opportunities, which may contribute to broader financial instability. Employment access remains another pressing issue (79.22%), suggesting difficulties in securing stable jobs, possibly due to economic downturns or skill gaps. Healthcare access is also a concern, with a considerable portion (72.02%) of the population struggling to obtain necessary medical services, likely due to affordability or limited infrastructure. Education access, while comparatively lower in difficulty (54.0%), still affects more than half of the respondents, indicating that financial, geographical, or systemic barriers may be preventing individuals from obtaining quality education. Overall, the findings suggest that food, water, and financial stability are the most urgent concerns, requiring targeted interventions to improve access to these essential services and enhance overall community well-being.

Conclusion

Overall, the findings suggest that access to food, water, employment, and healthcare remains a significant challenge, highlighting the need for targeted policies and interventions to improve essential services and enhance overall community well-being.

Objective 3: To assess the community's existing coping mechanisms, resilience, and adaptive capacities in response to climate-induced and socio-economic challenges.

Frequency Table of existing coping mechanisms, resilience, and adaptive capacities in response to climate-induced and socio-economic challenges.

Table 3. *To assess the community's existing coping mechanisms, resilience, and adaptive capacities in response to climate-induced and socio-economic challenges.*

Variables	No (%)	Yes (%)
Took measures to prepare for Future Climate Change	174 (45.19%)	211 (54.81%)
Make Changes in daily Practice to adapt to negative Climate Change	179 (46.59%)	206 (53.51%)
Difficulties accessing jobs or livelihood	48 (12.53%)	335 (87.47%)
Govt and non-govt support	243 (63.54)	140 (36.46)

The table provides insights into the community's coping mechanisms, resilience, and adaptive capacities in response to climate-induced and socio-economic challenges. It presents data on how individuals are adapting to climate change and whether they receive external support to mitigate its impacts. The first two rows highlight individual adaptive behaviors. More than half of the respondents (54.81%) have taken measures to prepare for future climate-related events, such as extreme weather or sea-level rise, while 53.51% have made changes in their daily practices, such as conserving water or using alternative energy sources. This indicates that a moderate portion of the community is actively engaged in climate adaptation efforts, though a significant percentage has yet to implement such measures. The third row reflects socio-economic vulnerabilities, specifically difficulties in accessing jobs or livelihoods. Moreover, 87.47% of respondents report facing challenges in securing employment or sustaining their livelihoods. This suggests that economic instability is a major barrier to resilience, making it harder for the community to adapt to climate-related disruptions. The last row assesses institutional support, revealing that only 36.46% of respondents have received assistance from government or non-governmental

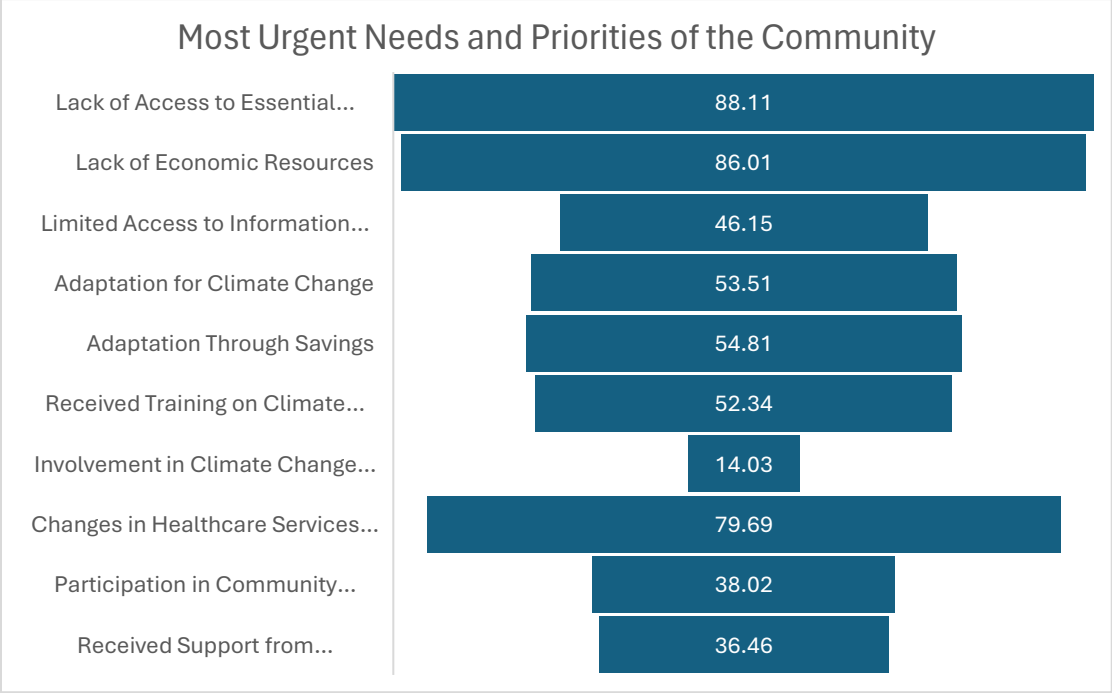
organizations, while the majority (63.54%) have not received any form of external support. This suggests that despite the evident socio-economic challenges, institutional and policy-driven interventions may be insufficient or inaccessible for many individuals.

Conclusion

Overall, the findings emphasize the need for stronger institutional support, economic empowerment, and awareness programs to enhance community resilience against climate and socio-economic challenges.

Objective 4: To identify the most urgent needs and priorities of the community, providing actionable insights for designing targeted interventions.

Figure 2: Distribution of Most Urgent Needs and Priorities of the Community



The bar chart illustrates the most urgent needs and priorities of the community, highlighting the significant challenges people face in their daily lives. The most critical concerns include the lack of access to essential services (88.11%) and economic resources (86.01%), which affect a vast majority of the population. Many respondents also report difficulties related to information and resources (46.15%), which may hinder their ability to adapt effectively to climate change. Adaptation efforts, such as climate change preparedness (53.51%) and financial savings (54.81%), show moderate levels of engagement, indicating that while some people are taking action, others

may lack the means or awareness to do so. Training on climate preparedness has been received by a portion of the community (52.34%), though participation in decision-making related to climate adaptation remains notably low (14.03%). A substantial proportion of the population (79.69%) has observed changes in healthcare services due to climate change, suggesting that environmental factors are directly impacting public health. Community participation in climate-related initiatives (38.02%) and support from government or non-government organizations remain limited (36.46%), indicating potential gaps in outreach and assistance programs. Overall, the findings emphasize the urgent need for improved access to basic services, economic stability, and greater community involvement in climate adaptation efforts.

Conclusion

The findings reveal that limited access to essential services and economic resources is the most pressing challenge, affecting a significant portion of the population. Additionally, gaps in information and resources hinder climate adaptation efforts, while moderate engagement in preparedness and financial savings suggest that many individuals may lack the necessary support to take proactive measures. The noticeable impact of climate change on healthcare services further emphasizes the urgency of addressing public health concerns. Low participation in decision-making and community-led initiatives, along with limited support from governmental and non-governmental organizations, indicates a need for stronger outreach, awareness programs, and policy-driven solutions. These insights underscore the importance of enhancing access to essential services, strengthening economic resilience, and fostering greater community involvement to develop effective interventions tailored to the needs of the affected population.

Qualitative Section

Objective 1: To analyze the effects of climate change from a community perspective/s on health, livelihoods, and the local environment in the project locations.

The community is facing significant challenges due to the adverse effects of climate change, particularly the breakage of a river. This environmental issue is causing people to lose their homes and livelihoods, forcing them to relocate. Additionally, it is impacting social structures, with young girls being married off at an early age as families struggle with the economic

consequences. The loss of income due to displacement further exacerbates these hardships. One member from Chandradip Development Society says:

"Because of the river collapse, people lose their living places and have to move to another location for shelter. Moreover, girls are getting married early due to this river collapse, and people's income is being lost as well, as they are forced to leave the places where they earned their livelihoods"

Objective 2: To examine the level of access to employment, healthcare, and other essential services.

From a community leader, the community is facing significant challenges due to limited access to education and poor health conditions. Many people live on boats, which leaves them vulnerable to environmental hazards and inadequate living conditions. Their primary source of income is fishing, but this does not provide them with a sustainable livelihood or financial stability. According to a community leader,

"In this area, people lack wealth, permanent homes, and access to better education facilities, all of which are worsened by climate change."

A community volunteer stated,

"The community faces significant challenges, particularly the lack of land ownership. Many people live on government land in temporary houses or on boats. The majority are uneducated and unskilled, which contributes to their unemployment."

Objective 3: To assess the community's existing coping mechanisms, resilience, and adaptive capacities in response to climate-induced and socio-economic challenges.

The community struggles with a lack of education, which prevents them from organizing seminars or meetings to address climate change. The leader further emphasized that, although efforts are made to inform the community about climate change adaptation strategies, they are limited because of the lack of knowledge among the leaders themselves. The community leaders can only offer advice on where to seek shelter during extreme weather events but cannot ensure these places are truly safe from climate-related risks. They are often left assuming that these locations are safe

without proper assessments. In addition, the community is not receiving any support from the government. As the community leader stated,

"We do not get any kind of support from the government, including from local members or the chairman." This lack of support exacerbates the community's difficulties in addressing climate change and improving their living conditions."

On the other hand, community volunteers have taken important steps to raise awareness about how people can cope in such vulnerable situations. They organized sessions and meetings to educate the community on how to survive floods and become employed with the help of AVASH. They also focused on healthcare education, such as proper sanitation practices like using toilets, and facilitated access to medical care by bringing doctors to treat the community and emphasizing the importance of health treatment for well-being.

Additionally, AVASH worked on environmental issues like addressing the high levels of CO_2, which can cause breathing problems. They promoted tree planting as a solution to combat the high CO_2 levels. For better employment opportunities, AVASH also helped people with livestock rearing, providing an alternative livelihood.

During various climate-related events, volunteers actively helped the community by guiding them to safe locations, offering food, water, and shelter. However, the support from the government has been limited. As one volunteer mentioned,

"The government gives dry foods, rice, water, and shelter during climate-related events. The local government, specifically the Mayor, provides dry foods and water, but they have not done anything significant for climate change-related issues."

Another statement from a volunteer was

"Thanks to all the efforts from AVASH, people are learning a lot and actively trying to adopt various coping strategies. They are working towards improving their livelihoods by rearing livestock and using better techniques for fishing."

Objective 4: To identify the most urgent needs and priorities of the community, providing actionable insights for designing targeted interventions.

From the director of Saint, Bangladesh- To address the challenges posed by climate change in the local area, it is crucial to prioritize the construction of a dam as a long-term solution. A dam could help manage water flow, prevent flooding, and provide a more stable environment for the

community to thrive. Currently, the community's livelihoods are not sustainable, as they rely primarily on small-scale fishing, which generates minimal income. This situation leaves them vulnerable to the impacts of climate change, such as flooding and the loss of resources.

Additionally, local corruption further complicates efforts to address these issues. The community's leaders and local authorities have not taken the necessary steps to implement viable solutions, such as exploring alternative livelihood options or educating the community on how to adapt to climate-related challenges. Without proper intervention, the cycle of poverty and vulnerability to climate change will continue. One potential solution is the development of infrastructure like water sanitation systems. For example, building a water sanitation facility in areas with clustered living spaces, such as a 7 or 8-tola apartment complex, would help provide clean water and improve overall living conditions. This would be especially beneficial in areas where access to clean water is a challenge, helping to reduce health risks associated with contaminated water sources. Moreover, for those who rely on fishing, providing them with better tools, such as boats or fishing nets, could enhance their ability to earn a more stable income. Improving fishing practices could lead to higher yields and, in turn, help them generate more income to support their families. Another approach would be to introduce livestock farming as an alternative source of income. By raising livestock, such as goats, cows, or poultry, members of the community could diversify their livelihoods and reduce their dependence on fishing alone. This would not only help secure food sources but also provide opportunities for selling animal products, creating a more stable income stream. In summary, a comprehensive strategy is needed to address the multi-dimensional challenges faced by the community in the face of climate change. Building infrastructure like dams and water sanitation systems, providing better fishing equipment, and introducing alternative livelihoods such as livestock farming are all potential solutions. By taking these steps, the community can better adapt to climate change and improve their economic stability and overall well-being.

Overall Findings

This Quantitative and Qualitative study provides a comprehensive assessment of climate change impacts on communities, focusing on health, livelihoods, access to essential services, and adaptive capacities. The findings reveal that economic hardship, food and water insecurity, and inadequate institutional support are major challenges affecting resilience. Income loss significantly increases

vulnerability to climate change, while migration appears to offer some relief by helping individuals relocate to safer environments. Access to basic services such as employment, healthcare, and financial stability remains limited, making it harder for communities to adapt effectively. Moreover, despite some adaptation efforts, participation in decision-making and climate-related initiatives remains low, and government or NGO support does not reach a majority of those in need. These results highlight the urgent need for stronger adaptation strategies, policy interventions, and community-driven solutions to mitigate the negative consequences of climate change and improve overall well-being.

Recommendation

To strengthen community resilience against climate change and socio-economic challenges, institutional support must be enhanced through expanded government and non-governmental programs that provide financial assistance, training, and climate adaptation resources. Encouraging community-driven initiatives will ensure broader participation in decision-making, making adaptation efforts more effective. Economic resilience can be improved by developing job opportunities in climate-resilient sectors such as sustainable agriculture, renewable energy, and water management while also promoting financial literacy and microfinance programs to help individuals and families secure economic stability. Furthermore, improving access to essential services such as food, water, and healthcare is crucial. Investments in climate-resilient agriculture and water conservation projects can mitigate food and water insecurity, while expanding healthcare infrastructure in climate-affected areas can help address public health risks. Increasing public awareness through education campaigns and training programs will also encourage climate-resilient practices, such as water conservation and the use of alternative energy sources. Additionally, fostering community engagement in climate-related decision-making processes will empower individuals to take ownership of adaptation efforts, ensuring sustainable and long-term resilience.

Future Work Scope

Future research should focus on longitudinal studies that track long-term adaptation behaviors and economic trends to evaluate whether interventions are effective in improving community resilience. Additionally, assessing the impact of existing climate policies and adaptation programs

can provide insights into their effectiveness and identify areas for refinement. Since migration appears to play a role in reducing climate change impacts, further investigation is needed to understand how relocation influences adaptation and economic stability, as well as to develop best practices for supporting climate-displaced populations. The role of technology in climate adaptation also presents a promising area of study, particularly in leveraging digital solutions, artificial intelligence, and early warning systems to enhance financial inclusion and disaster preparedness. Finally, community-led adaptation models should be explored further to identify successful strategies that can be scaled and replicated in different regions facing similar climate-related vulnerabilities. By integrating research-driven policies, technological advancements, and grassroots adaptation initiatives, future efforts can create more effective and sustainable solutions to climate-induced challenges.