

Assessing the Impact of Climate Change on Young Children's Well-Being in the Coastal Areas of Bangladesh

A Micro Research Study

November 2024



ARNEC
Asia-Pacific Regional Network
for Early Childhood

early
opportunities



Published by the Asia-Pacific Regional Network for Early Childhood (ARNEC)
1 Commonwealth Lane, #03-27
Singapore 149544

Cover photograph: BRAC IED

Acknowledgments

We extend our sincere gratitude to ARNEC for entrusting BEN to conduct the Micro-Research study on the impact of climate change on young children in the coastal area in Bangladesh. Review, feedback and guidance from the ARNEC team including Ms. Evelyn Santiago, Executive Director, and Dr. Neelima Chopra, Program and Partnership Specialist, was crucial. We gratefully acknowledge the support of the Early Opportunities for supporting this study.

We are grateful to CODEC, BEN's local partner for conducting this study, particularly the CODEC team including Dr. Khursid Alam, Executive Director; Quazi Wafiq Alam, Director of Knowledge Management & Program; Tasadduk Hossain Dulu, Director, Education who have guided and supervised the field research team led by Minhazur Rahman Rezvi, Program Manager-Monitoring & Evaluation and his fellow teammates for data collection - Ms. Maria, Ms. Anupa, Ms. Ainan, and Mr. Al Amin; and also to

the Project Managers, project staff, and teachers from the PPEPP and Shwapner Thikana Projects for their assistance in field data collection.

We are thankful to the BEN team members – Dr. Manzoor Ahmed, Chairperson; Ms. Mahmuda Akhter, Vice Chair; Prof. Dr. Saidur Rahman Mashreky, Treasurer; Dr. Md. Golam Mostafa, Member, Executive Board; Ms. Syeda Sazia Zaman, Member Secretary for their guidance, review, feedback, and inputs to the study tools, study process, and report, as well as to Md. Mehedi Hasan, Coordinator, for his overall coordination and inputs.

Finally, we express our heartfelt thanks and gratitude to all the participants of FGDs, KIIs, and Case studies for their voluntary and valuable participation in this important micro-research on early childhood development and climate change.

Table of Contents

Executive Summary	5
Introduction	8
Rationale	10
Research Questions and Objectives	11
Literature Review	12
Research methodology and approach	16
Data Collection Method	16
Study Area	16
Data analysis	17
Ethical considerations	17
Limitations of the Study	18
Findings and Discussion	19
Knowledge and Perception of Climate Change	19
Impacts of Climate Change on Young Children	21
Case Study 01: Unseen Struggles: The Impact of Climate Change on Disabled Children	24
Case Study 02: A Story of a Climate Migrant Family	25
Impacts of Climate Change on Pregnant Women	26
Existing Actions and Adaptation Strategies	27
Conclusion	29
Recommendations	30
References	32
Appendices	34
Appendix-A: Key Informant Interview (KII) Checklist	34
Appendix-B: Focus Group Discussion (FGD) Checklist	35
Appendix- C: Photographs of data collection	37

Executive Summary

Around 1 billion children worldwide are at high risk from climate change, with Bangladesh among one of the most vulnerable countries. Bangladesh faces floods, cyclones, droughts, salinity, and river erosion, with poor populations being more severely affected. Bangladesh's coastal region, which covers 20% of the total land area and is home to about one-fifth of the country's population, is severely affected by natural disasters. Unaddressed, climate change is harming children from the poorest and most vulnerable populations, causing physical, educational, psychological, nutritional, and even survival challenges. Therefore, understanding the knowledge, attitudes, and practices regarding climate change impacts on young children in the coastal areas of Bangladesh is crucial.

This study focuses on understanding the impact of climate change on young children in the coastal areas of Bangladesh. It captures the perception of early childhood educators, children, and communities about the effect of climate change, particularly the severe and increasing threats triggered by adverse phenomena caused by climate change in the coastal areas in Bangladesh.

This study followed qualitative research techniques, particularly key informant interviews (KII), focus group discussions (FGDs), and case studies. Mongla Upazila and Sarankhola Upazila. Being two of the

most vulnerable areas were selected for this study. In total, 18 KIIs were conducted with teachers, education officers, relevant experts, and NGO representatives. Moreover, four FGDs were conducted with children and community people and two case studies were also conducted with vulnerable children.

Based on qualitative analysis, the key findings of the study are the following:

First, the study confirmed that in the selected coastal areas of Bangladesh, climate change is severely impacting children's lives, their upbringing, and socio-economic development. They are being deprived of their basic rights such as access to food, education, shelter, medical care, a proper environment for socialization, and better life opportunities.

Second, the study found that even though the communities living in the selected coastal areas are the direct sufferers of climate change and identified an increase in the frequency of climate-related disasters, there is a substantial knowledge gap among the community people about the effects and impact of climate change. For example, severe and frequent flooding is aggravating their suffering by contaminating drinking water and increasing the spread of water-borne diseases while making communication

systems fragile. It is also directly affecting income-generating activities like fishing and rice production.

Women, especially those pregnant, are extremely vulnerable to climate change with serious impacts noted on women's lives. As many of the women in the coastal areas are engaged in fish farming, they have to spend long hours every day in salt water. This condition contributes to many diseases.

Third, due to disasters and impending economic crises, families spend less or are unable to spend much on children's nutrition intake and health. These factors affect school enrolment and learning of children. Children also suffer mentally and get emotionally vulnerable when they cannot go to school, disrupting their learning and interaction with peers. Many parents stop their pre-primary and primary school-going children's education due to their economic situation and put their children into work. Thus, dropouts from school are more common in the coastal areas. Teenage girls also face trouble going to school due to lack of menstrual hygiene materials and support at schools during disasters.

Fourth, most parents of a disabled child expressed feeling depressed during displacement due to a disaster as they face many movement and communication hazards.

Finally, with respect to actions and adaptation strategies regarding climate change, the study found that while there

are no specific adaptation strategies in place particularly for children, there are some systematic actions designed to protect the population from disasters.

The government has built multi-purpose cyclone shelters which have improved the capacity of communities to protect themselves during storms and floods; these facilities are used as schools in normal times. Local governments and NGOs are working to improve communication networks and early warning systems which help local communities prepare for extreme weather events and reduce damage. To deal with the salinity problem, rainwater collection with tanks is the prime adaptation strategy. The role of climate and environment experts are crucial, particularly in advocating for and advising on context-specific solutions; for example, planting mangroves, particularly Sundari, Goran, and other saline-tolerant plant species, to protect coastal areas from erosion, storm, and tidal waves.

Recommendations:

Advocacy for child-centred public policy and climate action: Stronger climate actions should be taken considering vulnerable populations to address climate risks and enhance long-term sustainability.

Emergency alert and rescue system: A comprehensive emergency alert and rescue system should be developed for helping the people of coastal areas in a

more effective way in terms of communicating information about any disaster and rescuing after the disaster.

Proper management of health risks and adaptation: Basic medical facilities and nutritious food for children should be ensured by the government. Schools should be provided with proper sanitation facilities for girls.

Food security and malnutrition reduction initiatives: Nutritious food and a healthy environment should be ensured. Some nutrition-rich food can be provided as midday meals in schools as most of the students suffer from malnutrition and their parents are unable to provide them because of their economic conditions. .

Safe spaces for psychosocial and emotional support to children: Teachers should be given more training on how to help students cope with the stress and anxiety caused by disasters and provide psychological and emotional support to them.

Access to environmental education and disaster management: Children and their parents should be educated about climate change, its impact and resistance strategies. Government with support from stakeholders should arrange training for teachers of pre-primary and primary schools on climate changes, its impacts and adaptation strategies so that they can teach their students and share knowledge with others.

Improved access to proper drinking water facilities: Local government and

NGOs should ensure access to safe water for the children and their families.

Infrastructure development: More schools and buildings should be established which would be more environmentally resilient.

Promoting biodiversity and ecology: More agricultural research should be done for this purpose in collaboration with relevant sectoral experts, such as inventing salt-resilient crop plants that can help the community to adapt better to the salinity problem.

Financial support for affected families: NGOs can provide loans with low interest or on long-term instalments with support from government and philanthropies. The government can launch projects and create employment opportunities for the community people.

Access to learning opportunities for children with disability: Issues of inclusion, particularly for children with disability, should be taken into account by the government and the non-government schools to ensure access and mobility, reduce the learning gap, provide access to health services including overall well-being and mental health, and support families in overcoming financial uncertainties.

DRR-responsive needs of women and children: Different needs of children and women, especially those pregnant, should be anticipated and addressed in disaster risk reduction (DRR) action.

Introduction

The world is going through a tragic state due to climate change. It is no secret that human activities are responsible for the endemic situations caused by climate change. The burning of fossil fuels, domesticating livestock, cutting trees, and pollution, are common human activities that have triggered the earth's climate to change (Wheeler & Braun, 2013). Moreover, due to extensive growth of the human population, the pressure on earth has intensified with excessive extraction and overutilization of the available resources.

Due to global warming and rising sea levels, the frequency and intensity of climate-related disasters such as floods, heat waves, erosion, cyclones, and droughts, among others, are increasing globally and causing massive destruction (Paddison, & Choi, 2024). Climate change interrupts development and exacerbates hunger and poverty due to agricultural losses, food unavailability, and reduced incomes and livelihoods.

Being a low-lying deltaic nation, Bangladesh is enormously vulnerable to climate change and highly susceptible to disasters. The country has already been facing several climate change effects such as increased cyclones and flood frequency probabilities, erosion, rising water levels, and saltwater intrusion in

the coastal areas leading to large-scale damage to crops, employment, livelihoods and the national economy. Bangladesh has been rated as the third-most vulnerable country in the world in terms of number of people affected due to sea level rise.

Moreover, the recent history of Bangladesh in terms of disasters foretells a disastrous future for the country. Recurrent flooding over the last three years are clear indicators that if human-induced climate change continues unabated, half of this deltaic region will submerge under water.

Climate change is already known to affect poor and vulnerable populations disproportionately. Poor people are the most vulnerable. Specifically, poor people living in the coastal areas are the biggest sufferers. In coastal areas, generation after generation, people have lived their lives in a never-ending cycle of losing, repairing, and losing everything over again and again due to destructive cyclones and massive floods (Dhaka Tribune, 2024).

Along with that, globally, approximately 1 billion children (nearly half of the world's children) live in countries at extremely high risk from climate change, according to UNICEF's first child-focused Children Climate Risk Index, 2021. Unaddressed,

climate change will harm the poorest and most vulnerable children – first, hardest, and longest. The types of climate risks confronting children are diverse, ranging from direct physical impacts, such as cyclones, storm surges, and extreme temperatures, to impacts on their education, psychological stress, and nutritional challenges. Children are more likely than adults to die or be injured during disasters and, as a result of flooding, experience prolonged school closures as well as illness due to unsafe drinking water and skin diseases from washing with saline or polluted water.

Early childhood educators have an important role in assisting young children in coastal areas as they grow physically, psychologically, and intellectually. Understanding their knowledge, attitudes, and practices regarding the impact of climate change is critical, particularly in coastal locations such as Bangladesh. By raising climate-related awareness, educators can assist children and communities in adapting to the impact of climate change.

Rationale

The coastal region of Bangladesh covers about 20% of the total land area and over 30% of the cultivable lands of the country. It includes highly diverse ecosystems e.g. the world's largest single tract of mangroves (the Sundarbans), beaches, coral reefs, dunes, and wetlands. The dynamic natural environment is a source of great resources for the people of Bangladesh. However, as a deltaic coastal country, Bangladesh is one of the most vulnerable countries in the world facing serious adverse impacts of climate change. About 25% of the population, including young children, live in the coastal areas and they are severely affected by natural disasters. Climate change is affecting the severity, frequency, and distribution of climate-related hazards, including immediate disaster impacts as well as slower chronic crises. Unaddressed, climate change will harm the poorest and most vulnerable children first, hardest, and longest. Early childhood educators are one of the key stakeholders who are

dealing with young children in the coastal areas. They are the key agents for supporting young children to grow physically, mentally and intellectually. Therefore, it is important to understand their knowledge, attitudes and practices regarding climate change and its impact on young children, particularly in the coastal areas in Bangladesh. Climate-related awareness among children and communities can be given through these educators.

This study will create a scope to understand the knowledge, attitudes and practices of early childhood educators and also in children and communities regarding the impact of climate change on young children in the coastal areas in Bangladesh. It will also enable BEN to direct efforts toward the important issues that come out from the study, such as capacity development of teachers, advocacy, and raising awareness about the impact of climate change on young children in the affected communities.

Research Questions and Objectives

The micro-research has been planned by starting with the following questions which set the context for the subsequent objective of the study.

- What is the knowledge and perception of early childhood educators about climate change and its effects on young children in coastal areas in Bangladesh?
- What is the available evidence of the impacts of climate change on young children in coastal areas in Bangladesh? What are the risks due to climate change? What factors make a difference in the impact on young children?
- What school-level and community and family actions including innovative approaches exist; what are the possibilities and potentials?

The objective of this study is to understand the impact of climate change on young children in the coastal area in Bangladesh. This study captures the perception of early childhood educators, children and communities about the effect of climate change, particularly, the severe and increasing threats triggered by adverse phenomena caused by climate change in the coastal areas in Bangladesh.

The knowledge, attitudes and practices as they exist in the two selected areas will illuminate the research questions posed and help guide further research, refinement of the critical issues, further delineation of policy and action areas, and clues to relevant advocacy and social mobilisation approaches.

Literature Review

Knowledge and Perception of Climate Change

Bangladesh is one of the most climate-vulnerable nations in the world being a low-lying area, the coastal areas of Bangladesh are even more vulnerable to adverse climate conditions. By 2050, Bangladesh is expected to erode 17% of its total territory because of increasing sea levels, leading to the loss of 30% of its agricultural land (Veer, 2024). It is also anticipated that by 2050, Bangladesh's overall rice production will decline by 7.4% per year.

Bangladesh is susceptible to a number of hydrological, geological and meteorological disasters, including droughts, cyclones, floods, river erosion, saline intrusion, and more, due to its terrain, geographic location, and climate characteristics. These disasters cause a disproportionate number of casualties and financial losses when they interact with dense populations and unfavorable socioeconomic circumstances (Uddin, 2022). Both the environment and millions of livelihoods are affected every year due to these extreme adverse weather conditions.

There are profound differences in climate change consciousness among developing countries, which are usually driven by socio-economic factors. Most

people living in developing and underdeveloped countries have little knowledge about climate change and how it affects their daily lives, especially those whose livelihoods depend directly on fragile natural resources, and who are negatively impacted by climate change (Uddin, 2022). In regions that are highly vulnerable, such as coastal and flood-prone areas, people tend to be more aware of climate change due to their direct experience with its impacts, including rising sea levels, cyclones, and floods. In urban areas, awareness is growing, partly due to media coverage, government campaigns, and education, but the understanding of climate change can be more abstract compared to rural areas.

Impacts of Climate Change on Young Children and Pregnant Women

Children are the most vulnerable to climate change. The impacts of climate change are more likely to affect children than adults. According to UNICEF, almost every child on the planet is exposed to at least one of the climatic and environmental risks (UNICEF, 2021).

The usage of fossil fuels, deforestation, and extensive agriculture and other natural resource-extracting activities, all contribute to climate instability, which reduces access to clean water and food

and obliterates safe living conditions (Ritchie, 2020). These systems thus cause ill health, migration, and malnutrition, making kids especially vulnerable. The consequences of global climate change have a significant impact on children's mental health. Children's mental health suffers when they are displaced due to natural catastrophes like cyclones, fires, and floods (Ritchie, & Roser, 2024). In a study by WHO, it was found that 88% of the effects of global climate change are experienced by children under five (Sheffield & Landrigan, 2011).

Children may also suffer indirect harm from disasters. The institutions responsible for caring, protecting, and supporting children are undermined when a crisis impacts parents and other adults (including teachers) (Lai & Greca, 2020).

In case of pregnant women, they and their families encounter major challenges when natural calamities brought on by climate change occur. Mobility issues, lack of access to medications and medical facilities, sanitary issues, and mishaps when hurrying to cyclone shelters are among the issues. This is especially concerning because it can have serious repercussions, such as miscarriage. It draws attention to the necessity of strengthening the study region's natural disaster planning and response systems in light of climate change in order to protect expectant mothers and their families. The majority

of respondents in both regions are terrified of being uprooted in the future and are looking for a safe location with access to clean drinking water and protection from natural disasters brought on by climate change (Shamsuddoha, et al. 2024).

Climate change adversely affects sexual and reproductive health, particularly during extreme weather events such as cyclones, which hinder access to contraception and lead to women forgetting or misplacing their contraceptives. Climate change is also impacting the availability of potable water and sanitation, which are crucial for health and hygiene. The physical exertion necessary to retrieve water from distant sources may result in enhanced health hazards, including musculoskeletal pain and wreckage. Moreover, insufficient sanitary facilities subject women to greater dangers of infection (The disproportionate impact of climate change on women's health [Aidspan, 2024]). Pregnant women and their fetuses are more susceptible to climate change health impacts due to the link between extreme heat, flooding, and wildfires to health issues like anemia, eclampsia, low birth weight, preterm birth, and miscarriage (Climate Change and the Health of Pregnant, Breastfeeding, and Postpartum Women [USEPA, 2022]). Extreme water events and natural disasters can put pregnant and postpartum women at risk for depression and Post-Traumatic Stress Disorder

(Climate Change and the Health of Pregnant, Breastfeeding, and Postpartum Women (USEPA, 2022).

Action and Adaptation Strategies

In rural and coastal Bangladesh, children are particularly vulnerable to the impacts of climate change, yet they also play a role in adaptation strategies.

Climate-related disasters like floods, cyclones, and droughts often disrupt their education, health and overall well-being.

Farmers are growing salinity-tolerant rice, experimenting with new types, experimenting with different planting dates, turning paddy into fish, and rotating their crops in order to adjust to the rising saline levels (Gow, 2019).

In the coastal areas, people earn their livelihood by engaging in diversified activities such as involving in agricultural activities, aquaculture, raising livestock, or moving to another place or the urban areas for work. Engaging in alternative livelihoods is considered as a great adaptive strategy for coastal people which reduces the exclusive dependence on fishing and pressure on aqua resources. (Hanh & Boonstra, 2019) Additionally, infrastructure adaptations, such as building houses on raised plinths and creating cyclone shelters, help mitigate the risks posed by frequent floods, cyclones, and rising sea levels. Many national and multi-national NGOs help coastal women to adapt well to

climate change by helping them with many adaptive strategies. ActionAid, for example, helps vulnerable women prepare and adapt to climate change by constructing flood-resistant towns, giving salt-resistant seeds, training children how to survive a disaster, and creating child-friendly locations so they may continue their education if their road to school is flooded. (ActionAid, 2018).

By developing the necessary laws and regulatory frameworks, Bangladesh has made admirable efforts to simplify institutional and regulatory settings in order to achieve the goal of climate-resilient sustainable development. The government has developed the following programs, initiatives, and policies over the years to address disaster management and climate change:

- **Bangladesh Delta Plan, 2100:** The government recently approved the Bangladesh Delta Plan 2100, a comprehensive 100-year strategy plan that uses an adaptive delta management process to promote sustainable, gradual growth. By successfully lowering vulnerability to natural disasters and fostering resilience to climate change, the plan seeks to create a secure, prosperous, and climate-resilient delta with the goals of ensuring long-term food and water security, economic growth, and environmental sustainability.

■ **Bangladesh Climate Change Trust Act, 2010:** The objectives of the Act are to enhance livelihoods and lives in affected areas by implementing adaptation, mitigation, technology development, capacity building, and funding measures to mitigate the negative impacts of climate change.

■ **National Adaptation Plan (NAP) 2022:** The aim of NAP 2022 is to

promote climate-resilient development and mitigate climate risks and vulnerabilities.

Bangladesh's institutional structure and capabilities are still insufficient for mainstreaming disaster management and climate change adaptation, even with the development of legal documentation in policy, plans, and programs (Chowdhury and et al.2017).

Research methodology and approach

The micro-research study was conducted using qualitative research techniques to explore perceptions and understanding of the impact of climate change on young children in the coastal areas in Bangladesh. Qualitative methods were used in the study to explore perceptions and gain in-depth understanding. It gave the researchers access to a variety of perspectives. Different qualitative data collection techniques, like Key Informant Interviews (KII), Focus Group Discussions (FGD), Case Studies, etc. were applied to collect data. The fieldwork was carried out in Mongla Upazila and Sarankhola Upazila under Bagerhat District of Bangladesh. The whole research was conducted by analyzing primary data to get a deeper understanding of people's perceptions, experiences, and assertions.

Data Collection Method

As part of data collection methods, literature review; KIIs of preschool teachers, education officers and relevant experts; FGDs with community people and children; and case study with children were conducted for the study.

Key Informant Interview (KII): In this study, eighteen KIIs were conducted. The KII participants included ten pre-school teachers, and two education officers, three relevant experts and three

representatives of relevant organizations working for climate change in Bangladesh. To conduct these KIIs, a questionnaire was developed which was reviewed by ARNEC, BEN and ARNEC team and later translated into the local language (Bangla).

Focus Group Discussion (FGD): In the study, a total of four FGDs were conducted in the selected locations. Among them, two FGDs were conducted with community people and two FGDs were conducted with children. An FGD guideline was developed with inputs from CODEC, BEN and ARNEC teams. FGD guideline was translated into Bangla which was rechecked by BEN team. The FGD guideline was used by the CODEC research team for conducting FGDs in the field.

Case Study: Two case studies were conducted to capture the experiences of the children who were affected by climate-related disasters.

Study Area

Considering the vulnerability to climate-related disasters, two upazilas (sub-districts) in the Bagerhat District were selected for this micro-research study.

Mongla Upazila: Mongla, a thriving port town, located in the Bagerhat district, Bangladesh, is well-known for its strategic location beside the Sundarbans. The population of Mongla is diversified and mostly involved in trade, agriculture, and fishing. Mongla is one of the most climate-vulnerable sub-districts in Bangladesh.

Sarankhola Upazila: Sarankhola is located in the Bagerhat District, nestled by the mangrove forests of Sundarbans. It has a large number of population who mostly depend on fishing, van driving, agriculture and shrimp cultivation. They are influenced by coastal lifestyle and the worst sufferers of climate change.

Data analysis

The data collected from this study, particularly from the KIIs, FGDs and case studies were processed through proper steps which include transcribing audio recordings from interviews or focus groups and ensuring that transcripts are accurate and complete. Any identifying information has been removed to maintain confidentiality.

This study used the process of thematic analysis for our data analysis method. Data analysis followed an inductive approach, focusing on identifying themes, patterns, and recurring motifs within the transcripts. By applying a structured coding framework, the data was

effectively segmented into meaningful categories, allowing for in-depth analysis and interpretation. Thematic analysis was utilized to extract meaningful insights and interpret the qualitative data in relation to the research objectives. The findings were then combined with existing literature and theoretical frameworks to provide a complete picture of the impact of climate change on young children in the coastal area in Bangladesh.

Ethical considerations

This study followed the below ethical considerations during data collection from the field and from all participants in this study:

Informed consent obtained from all participants before data collection begins.

- Participants were assured of anonymity and confidentiality throughout the research process.
- Data used for research purposes only and would not be shared with any third parties without the participant's consent.
- The research was conducted in a respectful and sensitive manner, acknowledging the power dynamics between the researcher and the participants.
- Before the data collection, all the participants were made sure that they

were not bound in any way and were free to give their opinion and exact information.

- Each respondent was aware of the topic and respondents were made sure of the fact they wouldn't be harmed for giving critical data. Any sort of data falsification has not been incorporated into this research.

because this study only collected data from a small sample size, the findings may not reflect the larger population. Moreover, this study could not cover perspectives from all social classes or community groups. There was a budget limitation in this study, which hindered the ability to cover a larger range of sample sizes for information collection or to delve thoroughly into the subject.

Findings and Discussion

Knowledge and Perception of Climate Change

Bangladesh is a disaster-prone region. Every year, people greatly suffer from extreme weather conditions, especially in the coastal areas. This poses a serious risk to the survival of those living in this region.

This study explored the research objectives in two coastal areas named Mongla and Sharankhola. The study found that despite struggling with many extreme weather conditions people in the two areas have little idea about climate change and its specific impacts on their life. However, community people, including children, identified many disasters occurring in their regions which are results from the direct impacts of climate change. The regions have experienced major changes in their overall climate and living conditions. The overall environment has deteriorated over time, most interviewees opined. Also, life in the two coastal areas is at more risk than before due to catastrophic environmental changes. While describing the destruction of cyclones like Sidr, Aila, and Remal, most interviewees broke into tears explaining their losses.

In the selected regions, the water level has been observed to rise faster than

before, inundating comparatively lower lying areas and making the lives of hundreds of children, women, and other community people vulnerable to frequent disasters including the rise of saline water in the coastal areas. Experts predict that the two coastal regions might submerge under water in the near future, displacing millions of people. The monsoon is longer than before and the rainfall becomes heavier every year, thus floods are more frequent and destructive. In this case, one interviewee said: *"Those of us who live in comparatively lower regions are under serious survival risk and we're forced to displace due to excess rain and flooding every year."*

“ Those of us who live in comparatively lower regions are under serious survival risk and we're forced to displace due to excess rain and flooding every year. ”

Disasters like cyclones, frequent floods, etc. force people to leave their homes. Displaced individuals, particularly those from vulnerable communities, seek better living conditions elsewhere, making them more susceptible to traffickers who

exploit their desperation. Flooding, a serious hazard, further aggravates their suffering by contaminating drinking water and increasing the spread of water-borne diseases while making communication systems fragile.

Due to disasters, the communication system breaks down completely in that region. Power load shedding is a regular occurrence. Disruptions in communication systems hinder emergency response efforts during disasters, making it difficult for residents to receive warnings and updates online. Also, the roads are destroyed due to heavy rains, floods, and cyclones which hinder peoples' movement on an urgent need.

In both the sub-districts, channels run across the villages. This allows salt waters to inundate the villages every day, thus hampering daily life. During field data collection, a child mentioned: *"Our houses get damaged; roads go under water... they become muddy and slippery. We can't move easily due to floods."* Also, due to the saltwater intrusion, villagers face serious health hazards with usable and drinking water. Due to groundwater salinity, they depend on collecting rainwater but in the absence of sufficient number of tanks to meet future needs, they are forced to use and drink the unsafe salt water from ponds called "Puskuni." Many villagers said that they are unable to buy bottled water as it is very costly for them.

Besides notable health impacts, the villagers also face economic consequences as their income-generating activities get disrupted due to frequent disasters around the year. Most villagers said they find it extremely hard to meet their most basic needs such as food, clothes, housing, and medical care. A seven-year-old child from Mongla Upazila mentioned: *"Our parents cannot go to work and earn money; thus, we do not get our food properly and can't go to schools."*

“ Our parents cannot go to work and earn money; thus, we don't get our food properly and can't go to schools. ”

Local and traditional occupations such as agriculture and fishing are also increasingly under threat due to climate change. The study found that in both the sub-districts, people are increasingly losing their agricultural land to frequent floods and rising sea water. As a result, many have turned to fishing as an alternate livelihood, however, even that is riddled with increasing risks and high economic losses. While warming water globally is changing fish patterns, it was found that during floods or cyclones, as seawater inundates inland ponds, many villagers are further losing their fish stock. There is also a high-risk of infections among the fish

and shrimp population from viruses that come along with the seawater.

Children too have become great sufferers of climate change impacts in the coastal region. The study found that they are being deprived of their basic rights such as food, education, shelter, medical care, a proper environment for socialization, and chances to live a better life. Child labor is increasing in the region as families go through extreme poverty and economic crises. They are often sent to urban areas for income generation and as a result drop out from schools. Md Rafiqul Islam (37), a farmer said, *"Floods are becoming more frequent now than before, and communication problems are increasing. That's why children are not able to go to school on time and families are also not that concerned about sending their children to school."* Thus, the illiteracy rate seems to be increasing in these coastal regions.

“ Floods are becoming more frequent now than before, and communication problems are increasing. That's why Children are not able to go to school on time and families are also not that much concerned about sending their children to school. ”

However, one interviewee (NGO worker) said that “people are more aware of the post-disaster impact than before... people

now move faster than before.” The inclusion of disaster management knowledge in the national curricula from Grade 3 helps children become more capable of pre- and post-disaster management. Even though they are now more aware of disasters, they are still reluctant to follow disaster alerts.

Impacts of Climate Change on Young Children

Many research studies have shown how lack of proper nutrition or even schooling can adversely impact a child's brain development and physical growth. In case of continuous and devastating disasters, the early learning of children gets extremely disrupted as schools are often shut for long periods, roads are damaged, and families lose their homes and belongings including learning material like books and stationery. During the fieldwork, we found many students who were compelled to share the same books between two to three of them. Thus, proper learning gets disrupted. Being unable to go to school, they also break down mentally.

Many parents stop their children's education due to a lack of economic stability and put them to work. Thus, dropouts have become a normal scenario in that area. Some parents also said that there is no mid-day tiffin in the school for which children will come to school with joy.

During disasters as schools are used as cyclone shelters, the environment of the

school gets disturbed and ruined and it needs a long time to recover the appropriate environment for learning in schools. Many teachers have opined that they lose educational tools and important documents also get damaged sometimes. Lack of interest of teachers in teaching is often seen as they also go through personal hardships.

Many teachers stated that due to a lack of recreational tools in schools, it gets really hard bringing children back to school post a disaster. Due to waterlogging, school grounds for sports also get ruined. Children's mental development, which greatly depends on socialization, also gets hindered.

Another expert says that this whole disaster situation poses a serious risk to a child's brain development. During the disaster and the post-disaster period, due to lack of care, a child's brain cell connection and brain development get obstructed. As the coastal areas are susceptible to frequent environmental disasters one after another, there is no chance of a sound environment being created for the child to help in their brain development. Thus children, who are the future of the nation and will take part in nation building, are deprived of a sound environment to grow up in, which ultimately impacts a nation's development. He also said, *"For a child's both physical and psychological well-being, the family should invest a substantial number of resources in them. But in the*

coastal areas due to their financial crisis, the child's priority comes next after other most basic familial expenses are met. That is why, both their physical and psychological development get hindered."

Another indirect impact of climate change being seen in the coastal areas is the rise of divorce and separation cases. Mental well-being comes from the environment, however if the environment is spoiled, it can have dramatic impacts on adults and children. Children are often exposed to violence in their families and their surroundings.

Teenage girls also face trouble going to school due to a lack of menstrual hygiene tools at schools during disasters. Also, the schools are at a long distance for many students. Girls coming from long distances thus often have to face problems like eve-teasing. Sahnaj Begum (28) a parent said, *"Due to the distance of the school from the village, my daughter sometimes faces eve-teasing. That's why she becomes mentally disturbed and is reluctant to go to school. There are only two high schools and one college in the entire union. If there is a problem with roads due to natural disasters, boys and girls suffer from transportation problems."*

Most children said that they suffer from various diseases like cholera, dysentery, diarrhea, itching, scabies, etc. One child said, *"We become sick after the disasters. We suffer from fever, cold, cough, diarrhoea, and other diseases."* Also, many children

“ We become sick after the disasters. We suffer from fever, cold, cough, diarrhoea, and other diseases. ”

added that due to saline water, they were losing hair and suffering from long-term skin diseases. Poor sanitation and lack of medical care led to outbreaks of infectious diseases, especially in overcrowded shelters. When the rainwater runs out, children are forced to drink pond water in the summer, making them highly vulnerable to water-borne diseases. Maksuda Begum (27), a housewife said, *"Children face more problems due to a lack of adequate shelters. Due to improper drainage systems in bathrooms, various diseases are seen."*

Children also suffer from malnutrition due to lack of nutritious food. Children suffer from food insecurity as families are not able to cook in the house for long periods during a disaster and post-disaster. Also due to the economic crisis, families cannot afford proper nutritious food for the children. One child interviewee said, "We don't get enough food because our father cannot earn at that time." So, the children suffer from malnutrition and get sick easily. *"Our parents can't earn in such weather so sometimes we need to pass days without eating anything,"* a child said.

There is also a lack of proper medical services. There is only one community clinic for so many villages, which does not provide any advanced medical care and is insufficient to meet the health care needs of a large population.

“ Our parents can't earn in such weather so sometimes we need to pass days without eating anything. ”

While excessive rain increases the rate of communicable and infectious diseases, excessive heat increases the risk of heat stroke. In a report it was found that 42 people died of heat stroke in Bagerhat District in 2024, an interviewee stated.

For children with disabilities, different extreme climate conditions pose far more serious challenges. They are the first ones to suffer the most during disasters and displacement. Rising sea levels, extreme weather, frequent flooding, and drought force families to relocate, disrupting children's education and exposing them to stress and instability. This pressure and stress are much heavier on a family with a disabled child. During any disaster and in the post-disaster period, the disabled child as well as the family have to face a lot of mental and physical pressures. Experts believe that disability is a big challenge

for a child as well as for his/her family. The effects are stronger on the disabled child than a normal one. They are in immense pain during any disaster. Their movement problem is one of the key challenges they face which puts them in

a vulnerable situation during any disaster. As the physically disabled child has to face movement problems, it impacts his/her mental health greatly. And during the displacement, it gets difficult for the family to manage the disabled child.

Case Study - 1

Unseen Struggles: The Impact of Climate Change on Disabled Children

Ahmed is a physically disabled student living in Mongla. He studies in Grade 4. Ahmed was not born disabled. His parents mentioned that he was diagnosed and identified as affected by cerebral palsy at the age of two, which affects his mobility and coordination. He uses a wheelchair and requires assistance for most daily activities.

Ahmed attends a local school, which has limited accessibility for a disabled child like him. His family, which consists of his parents and a sister, live in a low-lying, flood-prone area, in a house built with basic materials. As flooding has become more frequent and intense due to climate change, the family often has to evacuate their home. For Ahmed, mobility becomes extremely challenging during these periods of flood.

Flooding and cyclones frequently disrupt schools, leading to closures. Ahmed already faces challenges in attending regularly due to accessibility issues, and climate-induced disruptions further limit his learning opportunities. Local health clinics are often damaged, and traveling to the nearest hospital becomes impossible due to inundated roads. This results in delayed or missed treatments for Ahmed, who requires regular medical check-ups and therapy.

Ahmed's father is a fisherman, whose livelihood is increasingly threatened by changing fish patterns due to warming waters. The family's already limited income is further reduced by the economic effects of climate change. Frequent displacement and the family's precarious situation contribute to Ahmed's anxiety and stress. The uncertainty of when the next disaster will strike makes it difficult for him to feel secure at home or school.

Most parents opined that, during the displacement due to a disaster, parents feel pressured and get mentally depressed with a disabled child as they face lots of movement and communication hazards. The child also feels a burden on their parents for their disabilities and suffers mentally. A mother of a disabled child said, *"My son is dependent on other family members to move, he cannot move without the help of others. In times of adversity, it gets difficult to manage him. We get mentally depressed*

handling him." Moreover, there are no separate care centres for children with disability which is why they become more vulnerable during a disaster. Especially, when a displaced family has to move to an urban area from a rural setting, the family and the child face difficulties in fitting into the new environment. Also, the displaced family faces a financial crisis, which impacts the disabled child's nutrition intake, medical care, and education.

Case Study - 2 A Story of a Climate Migrant Family

Ishrat Jahan Mim, an eight-year-old girl, studies in Grade 3. Her father, Mostafa Sarder, works as a van driver. They are climate migrants as they lost their house and livelihood to frequent climate-induced disasters. Prior to 2021, her family lived on Mongla's coast. They didn't have their own home, so they resided in a rented one in Mongla. Because they resided in a disaster-prone area, they were subjected to catastrophic natural disasters such as floods, droughts, and cyclones on a yearly basis. Salinity was the primary problem in their village.

The government of Bangladesh built over 250 houses with rainwater storage for climate migrants, and Ishrat's family received one. However, with increasing salinity, they must use pond water when the rainwater runs out. Due to frequent disasters and rising salinity, these houses have become vulnerable, with issues like cracked bricks and leaky roofs being common. They rely on canal and river water for their daily activities. Most people in the settlement areas earn a living by raising cattle. When asked, "Do all children go to school?" she replied that many kids skip school because they can't afford fees for exams or admission.

Impacts of Climate Change on Pregnant Women

Women and expectant mothers are the other most vulnerable ones to climate change. Climate change conditions pose serious impacts on women's lives. The impacts are related to their health, security, mental well-being, as well as their socio-economic well-being. Ms. Khadiza (30), an interviewee said, *"Our daily life is disrupted due to waterlogging, we cannot do any household work properly, including rearing poultry. Because of this, we are not being able to contribute to the family economically."*

As most of the women in the coastal areas are engaged in fish farming, they have to suffer from many health hazards. They have to stay in salt water for a long time. It often leads to diseases of the reproductive system. Many women even lose their ability to reproduce. Also, there are no safe places for girls and women during any disaster time. So, they often have to suffer from gender-based violence and many sanitation problems. Ms. Amena (30) mentioned: *"There is no separate accommodation for women in the shelter. Sometimes women are exposed to sexual harassment. Due to living in cramped spaces, women contract various types of diseases."* Also, for pregnant and menstruating women there are no proper sanitation measures taken in cyclone shelters. Also, there is no separate room managed for pregnant women in the cyclone centers. They thus bear untold

“There is no separate accommodation for women in the shelter. Sometimes women are exposed to sexual harassment. Due to living in cramped spaces, women contract various types of diseases.”

sufferings during the disasters. Due to communicational constraints, they can't be sent to hospitals during labor pain. So, they have to give birth in a risky or unsafe situation. There has not been any step taken to help them during a disaster or to take them to hospitals, most interviewees opined the women. Some said, *"We can't take them to the hospital if the situation gets worse, the child or the mother could die."* There is also lack of services (medical, sanitation,) and limited opportunities of prenatal check-up of pregnant women during the disaster period. This often leads to unsafe pregnancy

Experts and community people state that pregnant women are among the most vulnerable during any kind of disaster. Most interviewees said that pregnant women face serious movement hazards. During sudden floods or cyclones, their movement to a cyclone shelter or a safe place is a tough job. It was observed that there is a tendency of ignorance about maternal health among the community people, either due to the financial crisis or

lack of knowledge or awareness. Pregnant women thus suffer from lack of proper care and malnutrition.

Environmental instability also causes turmoil in the family, which adversely affects a woman's mental health. When women go through the pregnancy period alone as her family members are busy with making ends meet, they also face extreme emotional stress. That's why during the postnatal period; many diseases are seen in both the mother and the child. Often, the children are born impaired or disabled. During periods of frequent load shedding caused by floods or extreme heat, pregnant women said they found it difficult to rest. Children also suffer due to lack of adequate power supply.

Existing Actions and Adaptation Strategies

The coastal people are a highly resilient community. They have accepted their fate as they have survived in this hostile environment since they were born. The study found that while there were no specific adaptation strategies taken particularly for children, there had been some systems developed to protect themselves from the disasters with support from government and non-government organizations.

The government has built multi-purpose cyclone shelters which have improved the capacity of communities to protect themselves during storms and floods and

were used as schools in normal times. Now they can move themselves with their important belongings to the cyclone shelters after hearing the alert. Local government and NGOs are working to improve communication networks and early warning systems which help local communities prepare for extreme weather events and reduce damage.

“The Communication and forecasting system have improved. That's why people are now able to move to a safer place before any disaster. And the government and other non-governmental institutions are better equipped than before to take relevant actions and support the disaster-torn communities accordingly.”

The only help they get after the disasters is the bare minimum relief like dry foods and candles. Some NGOs provide microfinance to help people regain their financial condition. Local authorities sometimes work to rehabilitate the damaged households but in very rare cases. Unfortunately, the relief doesn't reach all sufferers equally because of the corruption of local authority. *“There is corruption in the Local government. When the reliefs come, they don't reach us. It reaches to them who are their favourite, and, if we talk about it, we become their enemy.”*, a woman said.

Many NGOs conduct various seminars on adaptation to climate change in coastal areas. Teachers always try to create awareness and train the students and

their families about what to do during the disaster and afterward. Teachers try their best to provide students with a sound environment to grow and motivate them to come to school after the disaster. Sometimes school committees provide necessary educational supplies to the students when these get ruined in times of disasters but that happens very rarely.

To deal with the salinity problem, rainwater collection with tanks is the prime adaptation strategy. When the rainwater runs out, pond water is purified

with fitkiri(alum) or by boiling and used by the household for drinking and cooking. But this is not safe enough to drink or regularly use as it creates various waterborne diseases and skin issues and children are the worst sufferers of it. Planting mangroves, particularly Sundari, Goran and other saline-tolerant species, has been a significant initiative to protect coastal areas from erosion, storm and tidal waves. Mangroves act as natural barriers and help in reducing the impacts of cyclones.

Conclusion

Bangladesh, as a low-lying deltaic nation, is grappling with severe consequences of climate change. Being the most vulnerable, the coastal people are suffering the most as their daily lives are battered by extreme weather conditions.

The study showed that the impact of climate change on children living in coastal areas is profound and concerning, which is increasing the significant threat to their physical and mental health, education, and overall well-being. They constantly suffer from cyclones, floods, salinity, heat waves and extreme weather conditions which not only affects and disrupts their childhood but also strips them of their basic rights like access to clean water, nutritious food and safe living. These hostile conditions exacerbate their malnutrition and health issues and hinder their educational opportunities and mental growth. Consequently, they are raised with mental trauma, poor physical health and insecurities.

Unfortunately, no specific initiative has been taken, particularly for children, to combat this situation. Sometimes they

do not even get the bare minimum help that is allocated to them from the government because of corruption and mismanagement. Local and national governments as well as NGOs should take urgent actions to deal with the nutrition, health, and educational needs of children of these vulnerable coastal areas. Investment in sustainable infrastructure, green development, ensuring the necessary medical care, adoption of stronger climate action and childcare policy, conducting adequate research, and creation of alternative livelihoods are very crucial in these regions. Again, ensuring proper environmental education and training for children and engaging them in climate change mitigation activities can make them aware and empowered.

Urgent and comprehensive strategies should be adopted for the children of coastal areas who are most affected yet neglected. Collaborative efforts of the government and NGOs can provide necessary support and improve the protection protocols of coastal areas which will help to secure the health, safety, and future of coastal children.

Recommendations

Following the qualitative analysis, this study suggests the below recommendations:

- **Advocacy for child-centred public policy and climate action:** Stronger climate actions should be taken considering vulnerable populations to reduce climate risk and enhance long-term sustainability.
- **Developing emergency alert and rescue system:** A comprehensive emergency alert and rescue system should be developed for helping the people of coastal areas in a more effective way in terms of communicating information about any disaster and rescuing after the disaster. More cyclone shelters with better facilities for women and children should be ensured.
- **Proper management of health risks and adaptation:** Basic medical facilities and nutritious food for children should be ensured by the government. Sufficient medical centers should be established. Respondents also mentioned that schools should have first aid supplies and better facilities to help children who fall ill during emergencies. Schools should be provided with proper sanitation facilities for girls.
- **Strengthen food security and malnutrition reduction initiatives:** Nutritious food and a healthy environment should be ensured. Some nutrition-rich food can be provided as midday meals in schools as most of the students suffer from malnutrition and their parents are unable to provide for them because of their economic condition.
- **Creating safe spaces to provide psychosocial and emotional support to children:** Teachers should be given more training on how to help students cope with the stress and anxiety caused by disasters and provide psychological and emotional support to them.
- **Access to environmental education and disaster management:** Children and their parents should be educated about climate change, its impact and resistance strategies. Stories and drawings can be used to help children understand the risk and safety measures. They can also participate in activities like tree plantation and cleanliness drives. Moreover, government, with support from stakeholders, should arrange training for teachers of pre-primary and primary schools on climate changes, its impacts and adaptation strategies

so that they can teach their students and share knowledge with others.

- **Improve access to safe drinking water facilities:** Local government and NGOs should ensure access to safe drinking water facilities for children and their families. They can provide tanks to preserve water for a long time and improve the water purification system as the water gets contaminated after every disaster and it creates severe health issues for children. The number of safe water sources should be increased.
- **Disaster-Resilient Infrastructure development:** Roads and bridges should be repaired in a short time so that children can easily reach school. More schools and buildings should be established which would be more environmentally resilient. Adequate lighting should be provided on the roads. Ramping stairs should be provided for disabled children. Disaster-resilient navigation systems such as bridges, culverts, and dams must be built. The electricity problem must be solved.
- **Promoting biodiversity and ecology:** More agricultural research should be done for this purpose, such as

inventing salt-resilient crop plants that can help the community to adapt better to the salinity problem. Invest in natural barriers like mangroves and dunes to reduce the impact of floods and storms.

- **Initiative to provide financial support for affected families:** NGOs can provide loans with low interest or on long-term instalments with support from government and philanthropies. The government can launch projects and create employment opportunities for the community people. Alternative livelihoods such as livestock rearing and the cottage industry should be promoted.
- **Ensure access for disabled children:** Issues of inclusions, particularly for disabled children, should be taken into account by the government and the non-government schools in term of ensuring accessibility and mobility, reducing learning gap, convenient access to health services, support to families in overcoming financial uncertainties and to support children in their mental health and wellbeing
- Different needs of children and pregnant women need to be taken into consideration in DRR.

References

- Aidspan . (2024, January 24). The disproportionate impact of climate change on women's health – Aidspan. Aidspan.
<https://aidspan.org/the-disproportionate-impact-of-climate-change-on-womens-health/>
- Anderko, L., Chalupka, S., Du, M., & Hauptman, M. (2019). Climate changes reproductive and children's health: a review of risks, exposures, and impacts. *Pediatric Research*, 87(2), 414–419.
<https://doi.org/10.1038/s41390-019-0654-7>
- Chowdhury, Md. A., Hasan, Md. K., & Islam, S. L. U. (2021). Climate Change Adaptation in Bangladesh: Current Practices, Challenges and Way Forward. *The Journal of Climate Change and Health*, 6(100108), 100108. <https://doi.org/10.1016/j.joclim.2021.100108>
- Dhaka Tribune. (2024, October 21). Loss and damage and the recent floods of Bangladesh. Dhaka Tribune.
<https://www.dhakatribune.com/opinion/longform/358493/loss-and-damage-and-the-recent-floods-of>
- Dhaka Tribune. (2023). COP 28: Bangladesh seeks science-based solution to global climate crisis. Dhaka Tribune. Available from:
<https://www.dhakatribune.com/bangladesh/333613/cop-28-bangladeshseeks-science-based-solution-to>
- Gow, J. (2019). Factors Influencing Rice Farmers' Adaptation Strategies to Climate Change and Extreme Weather Event Impacts in Bangladesh. *Climate Change Economics*.
<https://doi.org/10.1142/s201000781950012x>
- Hanh, T. T. H., & Boonstra, W. J. (2019). What prevents small-scale fishing and aquaculture households from engaging in alternative livelihoods? A case study in the Tam Giang lagoon, Viet Nam. *Ocean & Coastal Management*, 182, 104943. <https://doi.org/10.1016/j.ocecoaman.2019.104943>
- MoEFCC (2022, November 29). Climate Change Initiatives of Bangladesh, Achieving Climate Resilience. Ministry of environment, Forest and Climate Change (MEFCC), Government of Bangladesh.
doe.portal.gov.bd
- Lai, Betty.S.& Greca, Annette La. (2020). Understanding the impacts of natural disasters on children | Society for Research in Child Development SRCD.
<https://www.srcd.org/research/understanding-impacts-natural-disasters-children>
- OCHA. (2020, June 26). Anticipatory Humanitarian Action - Pilot: 2020 Monsoon floods in Bangladesh. Unocha.org.
<https://www.unocha.org/publications/report/bangladesh/anticipatory-humanitarian-action-pilot-2020-monsoon-floods-bangladesh>
- Paddison, L., & Choi, A. (2024, January 2). Which countries are contributing the most to climate change? *Www.cnn.com*.
<https://edition.cnn.com/interactive/2023/12/us/countries-climate-change-emissions-cop28/>
- Rezvi, M. R., Shahriar, F., & Islam, Z. (2024). COP-28 & South Asian Countries: Policy Challenges and Policy Options. *Sustainability and Climate Change*. <https://doi.org/10.1089/scc.2024.0083>

Ritchie, H. (2020, February 10). What Are the Safest and Cleanest Sources of energy? Our World in Data; Our World In Data. <https://ourworldindata.org/safest-sources-of-energy>

Ritchie, H., & Roser, M. (2024, October 22). Climate change will affect food production, but here are the things we can do to adapt. Our World in Data. <https://ourworldindata.org/climate-change-will-affect-food-production-things-can-adapt>

Shamsuddoha, Md., Javed, Md. A., Islam, S. Md., Sultana, N., Imran, A., Sheikh, Tanje Un Jenat, Shams, S., & Sharif. M.M. (2024). Impacts of climate change-induced natural hazards on women and its human rights implications: A study in the southwest coast of Bangladesh. *Journal of Migration and Health*, 100221–100221. <https://doi.org/10.1016/j.jmh.2024.100221>

Sheffield, P. E., & Landrigan, P. J. (2011). Global Climate Change and Children's Health: Threats and Strategies for Prevention. *Environmental Health Perspectives*, 119(3), 291–298. <https://doi.org/10.1289/ehp.1002233>

USGLC. (2021). Climate change and the developing world: A disproportionate impact – USGLC. U.S. Global Leadership Coalition (USGLC). <https://www.usglc.org/blog/climate-change-and-the-developing-world-a-disproportionate-impact/>

Uddin, Md. B. (2022). Perception of climate change in Bangladesh: local beliefs, practices and responses. *International Journal of Anthropology and Ethnology*, 6(1). <https://doi.org/10.1186/s41257-022-00073-w>

UNICEF. (2021, August 19). The impacts of climate change put almost every child at risk. www.unicef.org; UNICEF. <https://www.unicef.org/stories/impacts-climate-change-put-almost-every-child-risk>

UNDP. (2023). Climate Vulnerability Index (Draft). UNDP. <https://www.undp.org/bangladesh/publications/climate-vulnerability-index-draft>

UN. (2023). UN Climate Change Conference—United Arab Emirates. United Nations (UN). Available from: <https://unfccc.int/cop28>

USEPA. (2022, March 21). Climate Change and the Health of Pregnant, Breastfeeding, and Postpartum Women. United States Environmental Protection Agency (USEPA). www.epa.gov. <https://www.epa.gov/climateimpacts/climate-change-and-health-pregnant-breastfeeding-and-postpartum-women>

Veer, A. (2024). Climate Change Exposes Bangladesh to Greater Risk. [Bipr.jhu.edu](http://bipr.jhu.edu). <https://bipr.jhu.edu/BlogArticles/31-Climate-Change-Exposes-Bangladesh-to-Greater-Risk.cfm>

Wheeler, T., & Braun, J.V. (2013). Climate Change Impacts on Global Food Security. *Science*, 341(6145), 508–513. <https://doi.org/10.1126/science.1239402>

World Bank. (2022, October 31). Urgent Climate Action Crucial for Bangladesh to Sustain Strong Growth. World Bank. <https://www.worldbank.org/en/news/press-release/2022/10/31/urgent-climate-action-crucial-for-bangladesh-to-sustain-strong-growth>

Appendices

Appendix-A: Key Informant Interview (KII) Checklist

Name: _____ **Profession:** _____

Institution name: _____

Location: _____ **Date:** _____

Section 1: Knowledge and Perception of Climate Change

1. What do you know by the term "climate change"? (ALL)
2. What are the climate change issues in coastal areas in the context of Bangladesh? (NGO staff/experts/Education officer)
3. Do you think your community/community people face any significant changes due to climate change? If you observed any changes, what are they? Please explain in detail. (Teachers/early childhood educators/NGO staff)
4. What are the major challenges facing coastal communities in Bangladesh due to climate change or climate-induced disasters? (ALL)

Section 2: Impacts of Climate Change on Young Children/Pregnant Women

1. Do you think climate change has effects on young children in your community/in coastal areas? If yes, what are they? (All)
2. Is there any specific effect on children's overall development (i.e. health, nutrition, learning and mental wellbeing)? What are they? (All)
3. Is there any specific effect on pregnant women's health, nutrition and mental well-being?
4. Can you explain what are major risks you/young children experienced in recent times due to climate change/climate-induced disasters? (All)
5. What specific impacts of climate change have you observed on young children in your community? Explain in detail with examples. (Teachers/early childhood educators/NGO staff)
6. Do you think climate change affects migration/displacement and children with disabilities? How does it affect? (All)
7. Do you think the educational institutions (i.e. preprimary/primary/secondary school) or school students of coastal areas experience challenges due to climate change issues? If yes, what are they? (Education officer /NGO staff/Experts/ Teachers/early childhood educators/NGO staff)

Section 3: Current Actions and Practices

1. What are common local adaptation strategies/practices that coastal communities use to protect themselves, family members, and children from climate change-induced problems? (Experts/NGO staff/Education officer)
2. What actions/strategies have been taken by government/local governments/education ministry/community people/school management communities to address the impacts of climate change on children? (Experts/Education officer/ Teachers/early childhood educators/NGO Staff)

3. What are local adaptation strategies/techniques you/your communities are following to tackle climate change-induced problems (salinity, climate-induced disasters, health hazards etc.)? (Teachers/early childhood educators/NGO Staff)
4. Are there any innovative adaptation approaches or solutions being implemented to protect children from climate change effects? (All)

Section 4: Future Possibilities & Potentials

1. What kind of steps/actions/strategies do you think are needed to better protect children from climate change impacts? (All)
2. What additional support or resources are needed to mitigate the impacts of climate change on young children? (All)
3. What kinds of skills/resources/actions are needed for school-teachers/early childhood educators/community people to enhance their capacity to protect young children from climate change effects? (All)

Appendix-B: Focus Group Discussion (FGD) Checklist

FGD Group:

Date:

Location (Village, Upazila, & Zilla):

Duration of FGD:

Basic Demography of FGD Participants

S/L	Name	Age	Gender	Profession	Contact Number
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Checklist of FGD:

Section-1: Knowledge and Perception of Climate Change

1. Have you ever heard about climate change? If yes, what do you know by the term "climate change"?

2. Have you experienced any changes in your community regarding climate (i.e., drinking water, cyclones, & agriculture production) over the last decade? If yes, what are they?

Section-2: Impacts of Climate Change on Young Children/Pregnant Women

1. Do you think these changes are affecting your community, especially young children and pregnant women? How does it affect young children, pregnant mothers and your community?
2. Can you explain what specific impacts of climate change have you observed on young children in your community?
3. Can you explain what are major risks young children experienced in recent times? Do you think, there are any risks linked with climate change/climate-induced disasters?
4. Has climate change affected children's overall development (i.e. health, nutrition, learning and mental well-being)? Can you provide examples of how it impacts?
5. Do you think climate change affects migration/displacement and children with disabilities? How does it affect?
6. Do you think Pre-primary, Primary and secondary schools are experiencing challenges to continue their regular activities due to climate change or climate-induced disasters or hazards?

Section-3: Actions and Adaptation Strategies

1. What are local adaptation strategies/techniques you/your communities are following to tackle climate change-induced problems (salinity, climate-induced disasters, health hazards, etc.)?
2. What actions/strategies have been taken by community people/local governments at the community/family level to address the impacts of climate change on children?
3. What actions have been taken by school management communities at the school level to address the impacts of climate change on children?
4. Are there any innovative adaptation approaches or solutions being implemented to protect children from climate change effects?

Section-4: Possibilities and Potentials

1. What are techniques/strategies the community people/school teachers/educators followed to educate young children and protect them from climate change?
2. What kind of steps/actions/strategies do you think are needed to better protect children from climate change impacts?
3. What kinds of skills/resources/actions are needed for school teachers/early childhood educators/community people to enhance their capacity to handle climate change-related challenges?
4. What role do you think the local government, private sectors, schools, and NGOs should play in addressing climate change impacts on young children?

Appendix-C: Photographs of data collection



Photo 01: FGD with Children in Mongla Upazila



Photo 02: FGD with Community People in Mongla Upazila



Photo 03: FGD with Community People in Sharankola Upazila



Photo 04: FGD with Children in Sharankola Upazila



Photo 05: Conducting case study with parent of a physically challenged children

Assessing the Impact of Climate Change on Young Children's Well-Being in the Coastal Areas of Bangladesh

A Micro Research Study



ARNEC
Asia-Pacific Regional Network
for Early Childhood

early
opportunities

