Project Progress Report

Capacity Building of Youth to Improve Drinking Water Security and Climate Resilience Through Youth-led Participatory Sensing (YPS) Model in Hatiya Island, Noakhali.
Md. Saiful Islam
Submission Date: 01/02/2024

Organisation Logo

Project info

Hatiya Island is one of the climate-vulnerable coastal upazila in Bangladesh, which exposes it to constant climate hazards such as cyclones, tidal surges, riverbank erosion, salinity intrusion, and more. Salinity intrusion especially affects the community in multiple ways as there is crop production damage leading to unstable livelihoods and a shortage and contamination of drinking water. Many people residing in the coastal areas are unintentionally consume higher amounts of salt than required which may cause severe health hazards in the long run. People of this Island are suffering from a lack of regular and effective monitoring of water quantity and quality to support necessary decisions and actions when it is needed. Participatory practice, proper use of modern technologies and the creation of healthy spaces for innovation in the water and climate sector can lift us to the world we want to live in – inclusive, secure, and sustainable.

This project "Capacity Building of Youth to Improve Drinking Water Security and Climate Resilience Through Youth-led Participatory Sensing (YPS) Model in Hatiya Island, Noakhali" mainly focused on carrying out Climate Change Adaptation practices among school and college students. The application of the systematic model (Youth-led Participatory Sensing) to integrate Youth/Students and Information and Communication Technologies (ICTs) in the Drinking Water Quality Monitor to improve the water security in Hatiya Island.

Objectives of the Project

1. Training youth groups from school and college for water quality monitoring using water testing kits (pH, EC, TDS, E-coli, temperature, turbidity, free residual chlorine etc).
2. Web Application development called "HelpChai". This mobile application will design for interpreting water quality and decision-making. The user also communicates with water experts and local government for emergency help through this mobile application.
3. The youth group will frequently take capacity-building and awareness programs among students and communities.
4. *Negotiation among local government and water suppliers for ensuring safe drinking water in this region.*

The CAP-RES project has three objectives as follows:
Objective 1: Create enabling environment and foster individuals to enhance their knowledge of climate change issues and develop their problem-solving skills
Objective 2: Generate factual evidence from local practices to scale up at the global level.
Objective 3: Improve institutional efficiency and effectiveness in decision-making and putting into practice in climate intervention

Based on these above objectives which one is more relevant to your project? How your project activities achieved this objective? (Maximum 200 words)

The objectives of project is relevant to 'Create enabling environment and foster individuals to enhance their knowledge of climate change issues and develop their problem-solving skills'.

Water is a resource essential to the existence of human civilization and the natural ecosystem. Although it covers around 71% of the world, there is a relatively limited amount of freshwater available for drinking and irrigating farms. Only 2.5% of the water on Earth is freshwater, and the majority of it is unusable. The unavoidable consequences of climate change, natural disasters and extreme events have questioned our existence and we cannot deny the truth. Water security in terms of quantity and quality is a must to achieve global goals of development and sustainability. According to IPCC, due to climate change and increasing demand for water, about 25% of the population will live with water scarcity by 2050. Between 2012 and 2050, in the southwest coastal zone of Bangladesh, the total freshwater river area is expected to decrease from 40.8% to 17.1%. Freshwater scarcity is a major problem in Bangladesh which leads to a high water disease rate. The government is already looking into various ways of adapting to the climate change impacts and the first step involves investing in nature-based solutions like watersheds and improving the waterways for a better groundwater recharge system. As of 2018, 50 million people in Bangladesh were at risk of exposure to arsenic from drinking contaminated water from tube wells.

This project we'll be able to mitigate water-related diseases and improve the water security among vulnerable communities. People will be able to frequently monitor their drinking water and get safe drinking water every day and Hatiya Island will become one of the climate change adaptive upazila in Bangladesh. I Think this innovative approaches will create new horizon on Information and Communication Technology (ICTs) based approach to climate change adaptation.

Team Composition

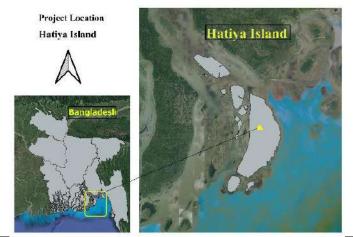| Md. Saiful Islam	Najmus Sakib Khan
Project Coordinator	Advisor
Jaber Bin Abdul Bari	Suhrid Talukder
Research Assistant	Research Assistant
Sanjida Akter Nisa	Khadiza Akter Riya
Research Assistant	Research Assistant
Abdus Salam Shiblu	Sunanda Dewan
Research Assistant	Research Assistant
Md Maeen Uddin	Fatematunnesha Payel
Research Intern	Research Intern
Saira Sadia	Md. Saiful Islam
Research Intern	Volunteer
Muhammad Jamil Uddin	Md. Tanbir Mohiuddin
Volunteer	Volunteer
Abdul Ohab	Savatul Mahi
Volunteer	Volunteer

Location

This research project was conducted in one of the vulnerable coastal areas called Hatiya Island in Noakhali, Bangladesh. Hatiya Island is an island in the northern Bay of Bengal, Bangladesh, at the mouth of the Meghna River. The Island falls under Hatiya Upazila of Noakhali District. The island has an area of 480 km2. It is the most climate-vulnerable island and is frequently subject to cyclones, saltwater intrusion and coastal erosion.

Climate change affects the community in multiple ways as there is crop production damage leading to unstable livelihoods and a shortage and contamination of drinking water. Many people residing in this region are unintentionally consumed higher amounts of salt and harmful contaminants than required which may cause severe health diseases in the long run. People of this Island are suffering from a lack of regular and effective monitoring of water quantity and quality to support necessary decisions and actions when it is needed.

This project was focused on carrying out Climate Change Adaptation practices among school and college students. The application of the systematic model (Youth-led Participatory Sensing) to integrate Youth/Students and Information and Communication Technologies (ICTs) in the Drinking Water Quality Monitor to improve the water security in Hatiya Island.

Project Location
Hatiya Island

Reached people (Direct and indirect)

Direct Reached people:
There are about 300 (three hundreds) peoples are directly reached through this project including government officers, teachers, NGO, and school students.

Indirect Reached people:
About 50,000 (Fifty thousands) peoples are indirectly reached throughout this project by physical publicity, communication, campaign and social media (Facebook, LinkedIn).

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Summary findings

Climate change is a real problem that is becoming devastating every year. Bangladesh is thought to be among South Asia's most climatically vulnerable regions because of its particular geographic setting and socioeconomic circumstances. Being a coastal country, Bangladesh is impacted by several climatic effects, such as severe floods, cyclones, sea level rise, and salinity, which have an influence on food security, coastal livelihood, natural systems, agriculture productivity, water supply, and health, among other things. Millions of people will be uprooted from their homes, places of employment, and sources of income as a result of the potential sea level rise, which might inundate one-third of the land regions along the coastal belt. Coastal areas are the most affected and vulnerable hotspots for climate change in Bangladesh. The peoples of coastal areas are losing their agricultural lands, their livelihoods and socio-economical demands. Alternative approaches are necessary for improving food security and mitigating the socio-economic losses of climate change in these vulnerable areas. Sustainable actions are currently a global concern for long-term environmental planning to combat climate change.

1. Agricultural lands, Natural ecosystems and Biodiversity are gradually losing through flood and coastal erosion in Hatiya Upazila.
2. Local people are facing sufficient safe drinking water, food availability and socio-economic damages.
3. Malnutrition has occurred, especially among children and women.

Describing findings of the project

Describe the progress/findings of your project

This project aimed to meet the safe drinking water problems in coastal areas. Throughout the project, there are lots of problems related to climate change are identified those extreme for communities well-being.

4. The Local people of Hatiya Island are facing safe drinking water scarcity. Even they do not aware of the quality of water that they are drinking every day from sources (WASA, Tube well etc)
5. Lack of proper monitoring of drinking water quality from sources, these people (especially children and women) are suffering from harmful water diseases.
6. Agricultural activities are also affected by climate change through safe freshwater scarcity for saltwater intrusion.
7. Among the local communities, they have no sufficient knowledge on climate change adaptation.

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Measuring Progress

How many project activities you have done? (These might be workshops, focus groups, or performances, etc). Please list all of these

1. Under this project, I've conducted five online workshops and one physical workshop with my research team members to capacity on climate change related issues and solutions.
2. My research team also collaborated with the Department of Oceanography, Noakhali Science and Technology University for technical support.
3. One collaboration also done with Upazali Nirbahi Officer and Assistant Commissioner (Land) in Hatiay Upazila, Bnagladesh.
4. One Focus Group Discussion (FGD) was conducted among school teachers (10 participants and one was among local communities (10 participants).
5. One seminar also conducted among two thousands school students on climate change literacy (Youth Campaign: Climate Change Literacy)
6. One workshop also conducted among two thousands school students on drinking water monitoring (Youth Campaign: Drinking Water Monitoring).

Identifying new skills and where to learn more

What are the most useful skills or practices that you learned? Which do you use most often?

Conducting a research project on a crucial global issues always give me new experiences and opportunities to learn new thing. But as a person, we have limitation and barrier, and we loved to learn new skills. Throughout this project, I have learnt some crucial things that will be helpful in my future long run.

- Leadership is one of important skill to conduct a project or maintain a team.
- Another crucial skill is communication, personally I found it as a strong part of my research team. Because, we have to be collaborate with vulnerable communities and different peoples from different stages.
- Sufficient theatrical knowledge always helpful during communication or research.
- This is our modern technological based era, so to be skilled person on a specific technology site will be helpful for finding new effective solution.

What knowledge or skills do you think would have improved your project?

It's true that I've found some crucial lacking during implementation of my project. And I believe that these can be help project.

- Research and technical skills.
- Leadership, team building, communication and negotiation.
- A professional expert on the field of climate change.
- A professional expert on technology based solution.
- Sufficient financial support

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What are the challenges/Risks you faced during the project activities? How you overcome/minimize those challenges?

It's true that we don't think about the reality without facing it. I've found lots of challenges during my project activities. First of all, maintaining a proper skilful team always challenging and crucial. Secondly, negotiation with local government was always difficult for me. Most importantly, it's not easy anymore to get attention from local communities. Another one is financial issues, I found it as a backbone for any activities.

There were some approaches that help me to smoothly overcome the challenges on my activities. Firstly, I build strong resourceful team under my coordination. And another one was collaboration with the Department of Oceanography, NSTU. Its help me to overcome administrative challenges with local government.

Write down the "lesson-learn" of your project

Bangladesh is one of the most climate vulnerable country in Bangladesh. We have lots of problem and crisis here. Among all of them, safe drinking water availability is the one of the crucial issue. In the coastal area of Bangladesh, our vulnerable peoples have no necessary knowledge on climate change effects, they don't know survive for the better livelihood.
May be it's not possible to completely prevent the global climate change and its effects, but we should take proper nature based or sustainable technology base approach to adapt with this global changes.

Add most relevant photos of your activities with captions (not more than 4).

Write a feedback on this innovation fund. (Write a paragraph within 400 words)

I'm a young researcher and climate activist, always love to work for vulnerable communities who affect climate change. I've completed my bachelor's degree in Oceanography from Noakhali Science and Technology University. After completing my bachelor, I worked as an "ICCCAD Youth Fellow 2023" at International Centre for Climate and Development (ICCCAD). Throughout this fellowship program, I've learn some important lesson on global climate change scenario and actions. And got the chance to submit my proposal for the "Youth Innovation Fund", and got opportunity to execute my project.

This project was amazing experience for me, because I've able to apply my climate knowledge and leadership skill through this project. As I love to work on climate related issues and vulnerable communities, this was helped me to meet my passion. It's true that we don't think about the reality without facing it. I've found lots of challenges during my project activities. First of all, maintaining a proper skilful team was always challenging and crucial. Secondly, negotiation with local government was always difficult for me. Most importantly, it's not easy anymore to get attention from local communities. Another one is financial issues, I found it as a backbone for any activities. I want collaborate with ICCCAD and want to apply this innovative idea with boarder range where a large number of peoples of Bangladesh will be benefited through this innovative adaptation approach.