

**Dhaka Tribune** | SATURDAY, OCTOBER 31, 2020

# Climate Tribune

---



In erosion-prone and climate-impacted areas, adaptation must be led by the community

YANN ARTHUS-BERTRAND

## **Communities leading the way**

Real stories of adaptation from vulnerable communities

---





Friendship's hospital ships operate in parallel with satellite clinics and community medic-aides, anchoring them to the communities they serve

Runa Khan

Friendship started its journey 20 years back, since then 100% of its core work has been carried out in the most climate-impacted regions of Bangladesh. Friendship began its activities with a floating hospital—that took healthcare to one of the most marginalized areas of the world, the chars (shifting river islands) of the Brahmaputra River.

Due to its unique geography, it was impossible to build hospitals in these char lands. Whilst working with these vulnerable communities, one important learning has been that the communities need to be the centre and source of all

project designs and core to the success of any project. Moreover, since 2002 communities have been at the essence of the way Friendship works, and they have been committed to empowering local communities and building their capacity to improve their own conditions.

People in these char areas had no access to reliable health services. Yet setting up an international quality, life-changing hospital facility by itself, was not enough. The communities needed to have an understanding of healthcare, and an awareness of the services available to them. People within their communities needed to be trained to act as the first points of contact, and

they needed to be diagnosed and linked to the wider healthcare system.

Friendship expanded their services to satellite clinics, trained Friendship Community Medic Aides, and set up a mobile app that linked the systems together. This three-tier system today serves over 350,000 patients every month along the major rivers and the coastal belt of Bangladesh.

It's not just healthcare. This idea of filling the gaps in the community to ensure preparedness to climate impacts and migration, through training and empowerment is something that Friendship adopted across all their work. Paralegals, solar power technicians, disaster volunteers, para-vets,

theatre artists, etc, from within the communities are integral to all the services. There are no short-term or short-cut solutions when you work like this, making sure to run each platform continuously and dependably long enough for the communities to be able to stand on their own feet without Friendship.

Our Friendship Disaster Management Committees (FDMCs) on each char are excellent examples of how this can be done. The committees, consisting of a cross-section of mostly women from each village, serve as a platform for communities to identify and solve their own problems and also link with the government and its services. The FDMCs undertake to map their commu-





WASAMA DOJA

approach has designed to provide a platform for this kind of holistic action.

The involvement of communities in determining their own problems and having the agency in NGO efforts to solve them is certainly not new. Many organizations have attempted to do this. I believe the thread which underlies the success is the principle of carefully nurturing the dignity of the people who we work with and touch, which automatically leads to empowerment, self-respect, confidence, and enhanced ability.

**Community Guardians**

Communities living in the coastal areas of Bangladesh are faced with continuous disasters, situations that make life and living difficult. Situations brought on by worsening cyclones and floods that strike the coast every year and more than once a year today.

These areas are protected by a network of embankments that were built by the governments in the 1960s and 1970s. The embankments were designed to keep saltwater from flooding villages during the high tides thus destroying agricultural land and contaminating water sources. However, over the years, with the rising sea level, lack of maintenance, and erratic climate events, the embankments have fallen into disrepair, endangering the lives and livelihood of many communities.

Even today, there are unions such as Pratapnagar whose embankments were so badly damaged by Cyclone Amphan, that their villages remain flooded four months later, and repairs cannot be undertaken until winter. However, the FDMC has played a key role in many villages, providing the leadership and initiative necessary for villages to defend themselves in whatever way they can.

In the coastal village of Noyakhali, Satkhira, in the midst of the pandemic with the threat of the Cyclone Amphan, the villagers noticed a weak spot in their embankment one week before Amphan made landfall. If repairs were not done before the arrival of the storm, some 2,000 families would be inundated.

So, Shafiqul Islam, president of the FDMC, contacted the union council and convinced them to urgently help by supplying bamboo, mud sacks, and other materials that they needed. Some 80 people from the community worked together voluntarily to temporarily secure the embankment. For now, Noyakhali has avoided a major disaster.

Leaders within the community can save lives in a way that nobody else can. When lockdowns had been implemented all over Bangladesh due to Covid-19, the people of the most remote areas

lacked access to critical services and were completely disconnected from any kind of help. During this time, Jamirun Begum, our community medic-aide in Mohanganj, Rajibpur, received a call late at night from a heavily pregnant woman who was experiencing extreme pain and had nobody to help her.

Jamirun rushed to help the woman but found that there were complications and that the pregnant women would need assistance at a hospital – the nearest one being the Gaibandha district hospital several hours away by boat and van. There was no transport available to make the distance, and neither was there time.

So Jamirun boldly spent Tk8,500 out of her own pocket to hire a micro-bus, and managed a boat to get to the mainland ghat. She had the confidence that Friendship would support her and reimburse the sum, even though there was no way for her to reach the office at that hour. This radical action, beyond the call of her duty, saved two lives in the dead of the night.

**Humbling leadership**

In this Covid-19 world, if we have learned one lesson, it is that of humility. Those of us who work in the development sector underestimate the strength, resilience, courage, and skills of those who daily need to take charge of their own lives, those who are today facing daily the brunt of the climate impact.

We need to invest wisely and give responsibly, ensuring that we only fill gaps, and NOT try to reinvent their lives for them. They are the real strengths, the front liners who can lead the communities and the millions. We must not with our actions, ever take away their dignity and strength. We must be humble enough to only fill the gaps with our interventions in their ecosystem if we truly want the adaptation solutions to work and have an impact on the climate impacted migratory communities.

The strength of the communities we have worked with for the years has been exemplary and awe-inspiring. Only by giving them tools of training and em-



When lockdowns had been implemented all over Bangladesh due to Covid-19, the people of the most remote areas lacked access to critical services and were completely disconnected from any kind of help

There are countless instances where Friendship Community Paralegals, Friendship Teachers, and so many others have stepped up and taken responsibility for the vulnerable in their villages. They ensured that people who were hungry received government aid when they had no income due to Covid-19. They went door-to-door during the flood to distribute food and stayed up all night safeguarding children and preventing child marriages, they stopped at nothing to help their neighbours. They were able to do these herculean tasks because they were empowered to make a difference.

powerment, and creating a service platform over 20 years, we saw their own self-respect and dignity as individuals and communities flourishing. We saw them being creative, innovative, finding their own solutions, and taking command of their own lives.

We at Friendship only created a platform where they flourished beyond their own expectation and came out as heroes in dealing with this pandemic. ●

Runa Khan is the founder and executive director at Friendship, a Social Purpose Organization. She can be reached at [runakhan@friendship.ngo](mailto:runakhan@friendship.ngo)

# In harmony with nature

## Takeaways from CBA14 for scaling up Nature-based Solutions (NbS) efforts for climate change adaptation

Tasfia Tasnim

Nature-based Solutions (NbS) have been drawing unique attention among the community of policymakers, practitioners, and researchers in all level of discussions in recent times.

Practitioners are trying to see how nature's services can be explored more to help the indigenous people and local communities for adapting to the changing climate and its various impacts; researchers are trying to investigate how to measure the economic and non-eco-

nomie benefits of services we are receiving from nature, and policymakers are developing nature-driven strategies for responding to the climate crisis.

The recently held 14th Community-based Adaptation (CBA14) conference also discussed NbS as one of the five key action tracks. This year's conference took place online from September 21 - 25 where many sessions were designed on thematic topics related to NbS, which included building community resilience through NbS, community-led nature-based technologies, adaptation through NbS, monitoring and

evaluating ecosystem-based adaptation (EbA), and financing NbS.

### Advantages of Nature-based Solutions (NbS)

Different sessions have captured discussions around multiple benefits of this integrated approach, where the concept is grounded in the knowledge that natural and carefully managed ecosystems produce a diverse range of goods and services for human well-being; and promote sustainable management, protection and restoration of natural habitats and biodiversity.

The advantage of NbS over other conventional approaches is that NbS are more holistic and can produce multiple benefits and co-benefits for people and nature. NbS range from restoring coastal ecosystems or mangroves that can protect people and lands against the impacts of climate change-related disasters, to protecting a wetland, to building green infrastructures in urban areas to reduce heat effects or solving the waterlogging crisis.

When we talk about NbS through swamp forest restoration or protected area co-management, people remain in the centre of these interventions. Hence, NbS is a win for both people and biodiversity which bring good returns for the communities.

### Challenges hindering effective implementation of NbS

The current political economy, lack of political will, lack of comprehensive planning, inadequate finance, limited technical capacities are limiting the large-scale implementation of NbS. Often, we see that built infrastructures are being viewed as being stronger options over natural solutions or mixing green-grey solutions.

Communities are not being involved fully and local voices are not being heard,

and we often ignore local knowledge, culture, and tradition for different adaptation interventions. Hence it has been challenging to mainstream NbS into local and national level policies. It is also very difficult to monitor and evaluate NbS, especially attributing NbS to improved resilience, which makes it even harder to make a strong case for NbS.

### Takeaways for scaling up the NbS efforts for adaptation

In order to mainstream the NbS approach in the national and local level policy planning process and to make the implementations happen, we would need stronger evidence-based NbS for the researchers and practitioners with stronger leadership capacities from both communities and the decision-makers.

Education and awareness can come as key topics here. We need to clarify and enhance the level of understanding about NbS among stakeholders, map out their knowledge and knowledge needs and identify how national and international research could better inform the design and implementation of NbS.

Social capital and collective actions are critical for building resilience for those interlinked societal challenges although it takes time to build. Governments, donors, and development partners need to provide long-term finance and support to build strong, local-based collective organizations to mobilize, support and scale-up NbS for adaptation at scale and in the longer-term.

Indigenous people, women, local communities are already championing NbS and hold valuable traditional knowledge, building on their decades of experiences of implementing those integrated solutions. This traditional knowledge needs to be linked with science and supported by enabling policies.

And the policy should be under-



In order to mainstream the NbS approach in the national and local level policy planning process and to make the implementations happen, we would need stronger evidence-based NbS



22-24 JANVIER 2019, MARSEILLE

# IMPLEMENTATION OF Nature-based Solutions TO TACKLE CLIMATE CHANGE

Los **SOLUTIONS FONDÉES SUR LA NATURE** sont une priorité régionale et internationale

Cet atelier de 3 jours est une étape dans un long processus de collaborations...

Elon LEMAÎTRE CURRI  
Directeur NBP/INMP  
Plan Bleu

WCC  
BARCELONA COP 24  
IUCN 2020  
CDB POST 2020

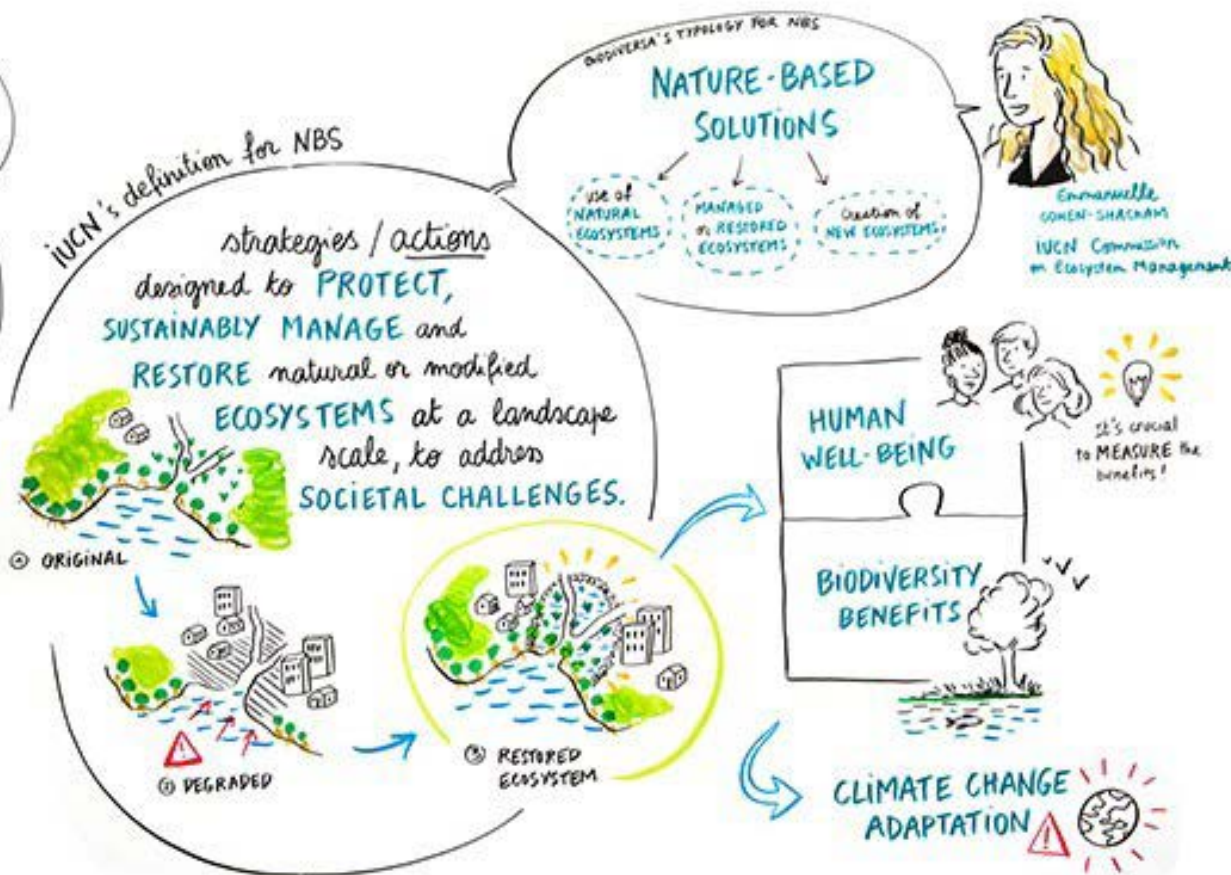
Les solutions fondées sur la nature font partie de l'approche de la Métropole de **MARSEILLE** depuis longtemps...

... mais nous avons encore beaucoup de défis à relever!

PARC NATIONAL DES CALANQUES

Notre mission: nous sommes très heureux d'accueillir ce workshop!

Didier REAULT  
Adjoint au Maire de Marseille



Nature-based Solutions (NbS): From definition to implementation

PLAN BLEU & IUCN

standable to the local people to act accordingly. Sustainable nature-based adaptation must be locally embedded to ensure structural financing. Promoting payment for ecosystem services can be a means to ensure sustainability. Also, we need to identify best practices in the implementation of NbS across the globe, as well as major obstacles to policy uptake and practice across the different geographical spectrum.

Many strong cases have been presented during the conference on the importance of involving local communities in the intervention and building mutual trusts among local-level actors for successful implementation of any interventions. For example, a case on mangrove afforestation had been presented by Friendship, which is an NGO in Bangladesh.

They have made their afforestation

initiative effective by establishing local cooperation through building a relationship of trusts among stakeholders. The project was designed in such a way that communities themselves ensure the protection of the forest and receive new skills and capacities to gain new livelihood opportunities and empowerment, whereas local authorities with technical support from the national government departments stay in a better position to preserve forests on the longer-term having cooperation from the community.

Therefore, we can see that NbS promote adaptation to address key interlinked societal challenges, including climate change, biodiversity loss; and build holistic resilience to future and unanticipated global challenges like the ongoing Covid-19 pandemic which is a wake-up call on nature.

Nature-based adaptation planning requires transdisciplinary approaches to bring together different actors' efforts and capacities. While political manipulation of local leaders, weak native administration, the collapse of a traditional system, exclusion of women and youth in the decision-making and current policy development process - all these acts as barriers to implement and scale-up the NbS; we must tap into the potential of NbS by ensuring more financial and human resources and capacity development of relevant actors for promoting systematic mainstreaming and sustainable development.

The closing plenary session of the CBA14 also highlighted the urge of the UK minister Zac Goldsmith: "To allocate more finance to NbS to help tackle climate change, as there is no pathway to

net-zero emissions without a major effort to protect and restore nature."

The launch of the 'Global Standard of NbS' in July 2020 also supports to define and identify NbS through standardized definitions and components for ensuring their effective implementation. So, for scaling-up the NbS efforts, we need to ask ourselves - how the voices and knowledge of local people can be used more in policy and planning, how we can draw more money for nature-focused interventions, and how to ensure good governance for formulating and implementing policies to promote development in harmony with nature. ●

Tasfia Tasnim is working as a Senior Research Associate at ICCCAD. Her working domains are nature-based solutions, livelihood resilience and climate finance. Can be reached at [tasfia2507@gmail.com](mailto:tasfia2507@gmail.com)

Alone Rollin

# Is mangrove afforestation the climate action panacea?

Mangrove afforestation along the coastline is a great natural solution that also functions as a natural machine to reverse carbon emission



The mangroves are being planted in the flatlands just outside the embankment to offer protection against the waves.

COURTESY

Kazi Amdadul Hoque

**T**he world's largest mangrove forest exists in the lower reaches of Bangladesh, a small country in South Asia. Called the Sundarbans - literally meaning "beautiful forest," it is not just the home of the Royal Bengal Tiger, and countless other species of wildlife, but it is also an essential component in the lives, livelihoods and safety of communities in and around it, the whole country and perhaps for a much greater area still.

"The Sundarbans is our mother," says Reshma Khatun, a young mother herself, from Mirgang village in Shyamnagar, a sub-district in the south.

"She gives us so much - our whole livelihood. We collect fish, crab, shrimp, honey, different herbs and fruits, firewood, both for us to use, and to sell. Not just that, but she protects us too; shielding us from cyclones, tides and erosion. She feeds us, nurtures us and protects. She is our mother."

Bangladesh is already a small, developing country with an immense popu-

lation of 170 million people - which is to say that the stress on resources is severe. The southern coastal region where the Sundarbans lie is isolated from infrastructure and prone to cyclones, storms, tidal upsurges, flooding, salination and a host of other natural disasters.

In recent years the cyclones Sidr (2007), Aila (2009), Roanu (2016), Fani (2019), and Bulbul (2019), have ravaged lives and property in low-lying coastal areas. Then in May 2020, just as we were feeling the peak of the impact of Covid-19, the super-cyclone Amphan battered the region, killing 80 people and leaving in its path ravaged embankments, countless uprooted trees, power blackout, and losses running into \$1.5 billion (Tk12,744 crore).

Besides the constant threat of cyclones, coastal regions have the added disadvantage of not being particularly fertile. Add to this the increasing salinity, and you get a dangerous reduction of food crop production, and therefore food security. Salinity continues to increase due to the reduction of the flow of freshwater from upstream. In the 19

coastal districts of Bangladesh, inhabited by more than 35 million people, salinity has increased around 26% in the coastal region of Bangladesh over the last four decades.

Salinity and lack of fertility also affect grazing land and fodder crops for livestock. The reduced ability for cattle-raising in Bangladesh has had serious economic and nutritional consequences, especially for children. However, people have also converted freshwater areas through the intrusion of saline water for shrimp culture, increasing the salinity in the surrounding areas and damaging the grazing areas of livestock.

There are many ways to mitigate or overcome the salinity problem. The top priorities are building and strengthening embankments, constructing sluice gates and irrigation mechanisms, establishing rainwater harvesting systems, and introducing salinity-tolerant crop varieties with adequate nutritional content. Our solution was to use mangroves to fortify built embankments.

Mangrove afforestation along the



Besides the constant threat of cyclones, coastal regions have the added disadvantage of not being particularly fertile





## Friendship, jointly with local government and department of forest, engages the local communities in mangrove plantation efforts by training them and subsequently handing responsibility over to them for maintenance and guardianship

coastline is a great natural solution that also functions as a natural machine to reverse carbon emission, reduce storm impact and foster alternate livelihood for coastal dwellers. This unique ecosystem is a great combination of three things; as an embankment protection, source of livelihoods and climate change mitigation.

Friendship's participatory approach addresses most of these concerns in a manner that is tailor-made to integrate into all of Friendship's other interventions - climate action or otherwise, and cohesively create a better quality of life for everyone. Health, education, water, sanitation, legal rights, economic opportunity and of course the environment are all part of the actions which start and end with the beneficiaries; in a bottom-up approach that sees to their needs as they define them.

To be specific, Friendship, jointly with local government and department of forest, engages the local communities in mangrove plantation efforts by training them and subsequently handing responsibility over to them for maintenance and guardianship, which fosters ownership. The approach has covered basic knowledge and skills for mangrove plantation and care along with alternate livelihood opportunities. Thus, these holistic interventions are not stand-alone, but overlap with all the other activities of Friendship in the area. Committees and groups are formed, training sessions conducted, and regular follow-up meetings held to keep everyone on the same page.

Historically, NGOs have been unable to sustain standalone plantation projects. Friendship's mangrove plantation project is part of a holistic program that

includes health interventions, water treatment plants, special assistance for fishermen, sustainable economic development programs, disaster risk reduction, climate change adaptation, which have been set up gradually over the years.

Over time we worked to build the community's trust and acceptance. Then, before diving into the project, we worked to enhance awareness and understanding of the benefits of the

mangrove forest towards climate action and against the effects of climate change. There is also a strong focus on women, and though gender parity is the objective, more women are employed as they have little-to-no other opportunities elsewhere. The engagement of the local community means the caretakers are always at hand, and the plantation has the chance to reach maturity without the need for external assistance. The initiative has aligned with the spirit of national and international mandates with close cooperation and networking with the, Bangladesh Forestry Department (BFD), IUCN, and other NGOs.

As this project started in 2018 it is still at a nascent stage, with around 200,000 trees on 100 hectares of land in Symanagar and Ashashoni upazilas of Satkhira district. The signs are promising, to say the least. The model is easily scalable and replicable, given funding is available.

Perhaps newer methods of finding that funding can be explored on a larger, more global scale as mangrove forests can process four times as much carbon as a tropical forest, thereby making them almost necessary to combat climate change. So far the mangrove plantation project has been funded by the Luxembourg Ministry of Environment, from its International Climate

Finance budget adopted after the COP21 summit.

Planting mangrove forests has led to the common good, in this case, simultaneously solving community-level problems, while serving as the most efficient carbon-absorbing machine possible. But for such a project to run sustainably, it's important to bring all the stakeholders together: the communities; technical and logistical support from the local government; and local authorities that provide land and ensure sustainability, guardianship and continuity. Friendship essentially fills the gaps and brings everyone together cohesively in a shared interest towards mutual benefit.

Finally, Reshma is happy to see the mangrove near her house. She is hoping the plantation will one day, save her family from the storm, and that she will join with her husband to find crab, fish, honey, leaves from the plantation areas to sell in the market. She may or may not understand climate change but she can imagine a green shade around her which would bring happiness and security. ●

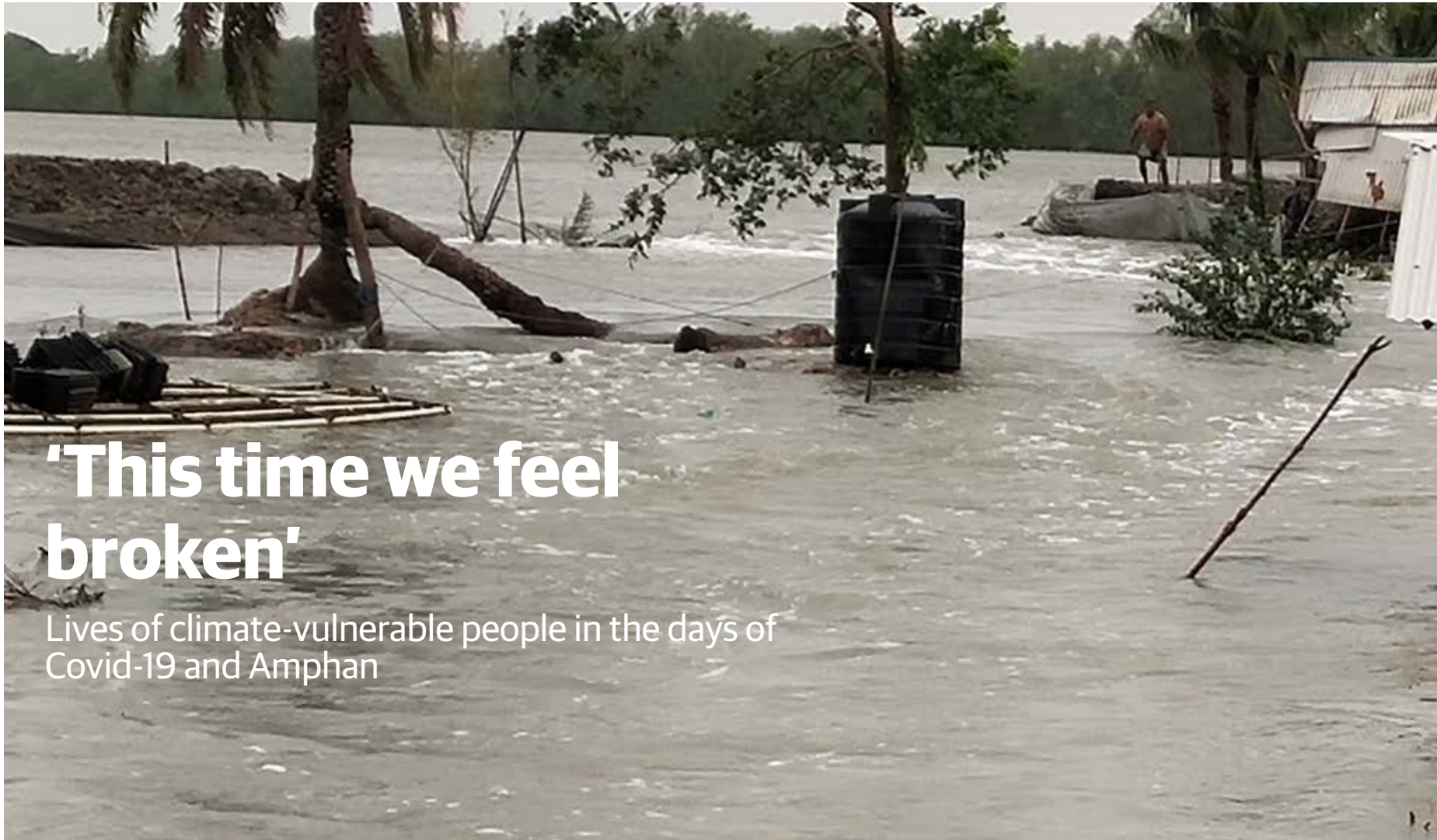
Kazi Amdadul Hoque is the Senior Director, Strategic Planning and Head of Climate Action at Friendship, a Social Purpose Organisation. He can be reached at [climateaction@friendship.ngo](mailto:climateaction@friendship.ngo)



Friendship Mangrove Plantation caretakers at work at the mangrove nursery

COURTESY





## 'This time we feel broken'

Lives of climate-vulnerable people in the days of Covid-19 and Amphan

Fish and crab farms, agricultural lands, roads were drowned in saline water.

Palash Sarker, Md Ruhul Amin,  
Mohammad Mahmudul Hasan  
and Mousumi Halder

**T**he coastal region in the south of Bangladesh is exposed to a wide range of climate extremes. This is mainly due to its geographical location at the Bay of Bengal. The daily life and livelihoods of the coastal people are regularly disrupted by extreme climate and slow onset events.

People of these highly vulnerable areas have continuously been fighting against conditions that have been worsening with climate change. But they never gave up. Almost every year they have been facing cyclones, storm surges, tidal floods, riverbank erosion or salinity intrusion. Climatic disaster has become an integral part of their lives.

But this time, in 2020, the Covid-19 pandemic has come on top of climate plagues: People, who have learned to cope with the adverse impact of climate change as much as they could, are now facing an unprecedented pandemic, that has made livelihoods of hard-working man and women even harder. A low point during this tragedy was reached

on May 20, when super cyclone Amphan hit the coastal belt of Bangladesh. It is hard to imagine the impacts of such a catastrophe amid the pandemic when daily life and the economy were completely locked down.

To assess the situation, a team from the Climate Change Program of Christian Commission for Development in Bangladesh (CCDB) was sent to Vamia village as one of the most Amphan-affected villages, located at Shyamnagar, Satkhira district, adjacent to the Sundarbans, the world's largest mangrove forest. The team was tasked to investigate the double impact of Covid-19 and cyclone Amphan at the local level. The investigation aimed, to understand how people have been coping with this twin crisis, and how they could be supported to recover and build back better.

Most of the affected villagers of the area depend on the river and forest resources for their livelihoods. Some others work as day labourers. When the government declared a general holiday at the end of March and imposed travel restrictions due to Covid-19, livelihoods of these people faced threats. The CCDB study team had identified that the locals were extremely worried about being in-

fectured by the virus. At the same time, they were deeply concerned about food security. Children had stopped going to school, normal daily life activities were entirely disrupted and no one could go out unless in case of an emergency. They couldn't even get any health support, because travel was banned and there was no doctor available in the village.

During this dramatic situation, people had to face Super cyclone Amphan, which hit the coast with a wind speed of 150km per hour and devastated 26 districts across the country. A total length of 150km of embankments was just washed away. The embankment protecting the Vamia village along the Chuna River collapsed, too. Many houses were completely demolished, others partly damaged. Fish and crab farms were wiped out. Agricultural lands were severely damaged. Furthermore, saline water contaminated people's freshwater sources.

"Often, when disasters have struck in the past, we felt too weak to start a new vegetable farm. But every time we finally stood up. This time, however, we feel broken," a farmer told the CCDB team.

And in the time of the pandemic, when Cyclone Amphan happened, local people had no other choice than to disregard many social distancing and hygienic rules when they had to take shelter, at the risk of being infected by Covid-19. Locals evacuated their homes and took shelter to save their lives from the immediate cyclone threat.

The sufferings of the Vamia village is just one example of how millions of climate-vulnerable people have been suffering from the terrible double whammy of Covid-19 and Cyclone Amphan, and of which choices they had to make for their survival.

This struggle has been challenging. Fishermen couldn't get the desired price for their fish. Crab collectors couldn't sell crab due to the shut-down of farms. Farmers struggled to get market because of ongoing restrictions. Honey collectors had to sell their stock at a low price. Day labourers remained without work in the lockdown situation. However, life can't be stopped, even in this burdening double crisis. Since then, villagers have tried hard to slowly recover, based on their coping strategies and resources.

While people explored different sur-





COURTESY



During this dramatic situation, people had to face Super cyclone Amphan, which hit the coast with a wind speed of 150km per hour and devastated 26 districts across the country

However, most of the villagers had to take loans from NGOs as well as local money lenders. In the latter case, interest rates were very high. Financial aid and food assistance provided by the Government and NGOs, aided in reducing the sufferings in the pandemic days for some but not all people.

When super-cyclone Amphan devastated the village in the midst of the pandemic, the coping capacity of the people was overburdened. The community people tried to protect the embankment by risking their lives - but finally, they couldn't prevent the embankment's collapse. As a consequence, the livelihoods of most people were destroyed. At that stage, relief assistance provided by the government and NGOs became the major means of survival. Apart from assistance, people sold their remaining resources and took loans again. As a result, they are now even more indebted, which makes them more vulnerable. Some families are changing their sources of livelihoods. Others have tried to regain their occupations through new loans. For this short term, the Government's "Work for Food" programs have been playing a vital role for day labourers to survive the crisis. Altogether, those people who have alternative in-

come to be the worst coping mechanisms, leading to food and water insecurity, as well as to diseases and worsening health status of vulnerable people. However, some freshwater sources have been cleaned from saline water, with the assistance of NGOs and community participation. Also, vegetable gardening has been restarted by some of the community people.

Women have played a vital role in household management during the crisis. They used their savings to ensure their families' survival, generated income from growing vegetables, rearing cattle and ducks, small businesses like tailoring, handicraft making, tutoring and working at crab farms. Such alternative income sources for women have been vital for families to survive during the Covid-19 lockdown and even after Amphan.

It turned out that women who run small and micro-business like tailoring have been less affected by the twin crisis. Nevertheless, gender inequalities continue: Though the workload of the women has been increased in terms of cleaning, maintaining hygiene, taking care of children, managing meals for family members, women are reportedly the primary reducer of daily food

the contrary, they may even deepen vulnerability. Integrated, sustainable and effective recovery approaches are almost absent at the community level. Most of the existing adaptation practices which were initiated in different NGOs projects were overburdened by the twin Covid-19 and Super cyclone Amphan crisis. Measuring the real impact of adaptation activities, without doubt, is extremely important to identify the best adaptation options, given that the climate risks will further rise in future, and that the next disaster will strike.

Most local people believe that comprehensive management of embankments, including local community participation, can reduce disaster risks significantly. The government and NGOs should incorporate climate change adaptation in their development plans and act accordingly. Projects should always assess and seek to reduce the risks of future climate extreme events in the project design and implementation. This is essential to strive for long-term sustainability. If this is not going to happen, the next disaster, like Amphan, will wash away all the investments done so far.

The combination of a pandemic like Covid-19 and climate impact can pose



The embankment protecting the Vamia village along the Chuna River collapsed.

COURTESY

come sources which are less vulnerable to climate change have been in a comparatively better condition.

Amphan forced many affected families into starvation, who had already reduced their food consumption due to Covid-19. People were scrambling for food, water and for assistance from each other. Consuming less food with inadequate nutrition, starving, drinking less water, or using saline water for domestic purposes have been and contin-

consumption to adjust with this peril. Many of the school-going children were becoming addicted to the internet, mobile phone, or even smoking, which are adversely affecting their mental and physical health. Furthermore, our team also found cases where children became engaged in income-generating activities on demand of their families.

While these coping strategies may decrease the pain for a while, they can't end the suffering in the long haul. On

the risk to dampen the development aspirations expressed in the Bangladesh Delta Plan. Avoiding such risk and build back better should be the top priorities of all our recovery efforts - from the local to the regional, national, and international levels. ●

The authors are working in the Climate Change Program of Christian Commission for Development in Bangladesh (CCDB). Can be reached at palash@ccdbbd.org

vival and recovery options, the spending of savings and taking loans have been the predominant strategies to ensure survival in the Vamia village, according to our team's assessment. At the initial stage of Covid-19, people who had personal savings tried to meet the daily needs by spending these savings.



# Mother Nature can mend our maladies

Adding a gender lens could expedite implementation of nature-based solutions

Afsara Binte Mirza

The devastating impacts of climate change are disproportionately experienced by women, as they face higher risks and greater burdens than men. Women's unequal participation in decision making, economic exclusion, exploitation, marginalization and gender-based violence often act as barriers

from fully contributing to climate-related planning, policy-making and implementation.

Nonetheless, women play a significant role in response to climate change due to their local knowledge and expertise in sustainable practices and resource management at the households and community levels. Moreover, women are recognized to ally with nature to adapt to climate change by harnessing

the power of Nature-based Solutions (NbS). NbS are actions that protect, sustainably manage, and restore modified ecosystems, and address societal challenges.

NbS have been present for thousands of years now, and women's traditional and indigenous knowledge tends to enhance existing nature-based solutions and practices (WfWP, 2018). Most of the time, women (particularly rural

and indigenous women) are motivated to learn new methods that will integrate with old approaches.

NbS assists in the functioning of a circular economy that is restorative and regenerative by construction and promotes greater resource productivity by targeting to reduce waste and avoid pollution, through reusing and recycling. Women support this.

For instance, a green entrepreneur





in Chile, Maria de la Luz Barros has established a company, VerdeActivo, that installs green roofs. Green roofs are roofs that are attached with living plants. Maria utilized the mechanism of Ecosystem-based Adaptation, which is a nature-based solution method that uses biodiversity and ecosystem service to aid people to adapt to climate change.

Maria emphasizes that green roofs are NbS that can help in accomplishing Sustainable Development Goals and can be an effective climate change adaptation strategy in urban areas, as 88% of Chileans reside in cities (IIED, 2020).

As NbS has the dynamic attribute to improve livelihoods and contribute to land conservation and climate adaptation, it encourages poor communities to implement NbS more widely. Sarshen Scorgie perceives this phenomenon more often. She joined Conservation South Africa, an affiliate of Conservation International, to coordinate a partnership of NGOs working on climate change, and is currently working with farmers in the Namaqualand district of South Africa's Northern Cape Province to restore dryland rangelands and water supplies and conserve biodiversity (IIED, 2020).

Looking at NbS with a multidisciplinary approach, and involving multiple stakeholders could aid to invest more in women and girls like Maria and Sarshen and lead to climate change adaptation.

Particularly, in small island developing states (SIDS) women are the most vulnerable to the effects of climate change. Yet, many women take the lead to accelerate the implementation of the nature-based solution by arranging local and community-based solutions. For example, the Jamaica Environment Trust, initiated in 1991, by a group of female friends, conducts environmental education and advocacy programs to save Jamaica from the effects of climate change (Devex, 2020).

Other than that, the organization has assisted to gain protection for an area of wetlands in Jamaica through advocacy, safeguarding, and supervision of the Pedro Bank fish sanctuary and organized large-scale coastal cleanup events annually.

In Papua New Guinea, the Pari Women's Development Association has guided successful mangrove reforestation efforts, protecting the greenhouse gases that are emitted from mangrove deforestation. The women in the association play a crucial role in executing the idea of mangroves protecting communities from flooding and rising sea levels. The organization has planted 500 seedlings by launching several awareness campaigns (Devex, 2020).

The impacts of climate change can be further worsened at the intersection of race and gender, thus impacting the lives of indigenous women differently. For instance, indigenous women in West Pokot, Marsabit and Narok counties of Kenya, are self-organizing and educating themselves to demand their land rights in their communities.

Women are aware that their contribution towards halting climate change and increasing resilience can be earned through securing their land rights. Women are planning the restoration of traditional food practices such as traditional seed varieties, rain-water harvesting to support farming and planting, conducting post-harvest preservation and storage, agroforestry with fruit trees and sustainable management of livestock pastures.

Without the full exercise of women's rights, leadership and participation in decision-making there can be no meaningful progress in achieving sustainable development goals; and acceleration of obtaining benefits from the implementation of Nature-based Solutions.

Women and girls bear the burden of increasing climate-related disasters but are rarely in a position to influence change. At the United Nations Climate Change Conference COP25, only 21% of heads of the delegation were women (Data Hub UN Women, 2020).

Increasing women's political status particularly, through representation in national government has a progressive effect on state environmental protection efforts. Therefore, acknowledging and realizing women and girls' roles in protecting nature is a requisite to strategically expedite the implementation of nature-based solutions.

Uplifting women and girls can be a win-win situation for everyone, as they have practised nature-based solutions generation on generation, with little exposure to modern technologies and schooling. Hence, this is the right moment to harness the generation Equality campaign that "demands equal pay, equal sharing of unpaid care and domestic work, an end to sexual harassment and all forms of violence against women and girls, health-care services that respond to their needs and their equal participation in political life and decision-making in all areas of life" (UN Women, 2019). ●

Afsara Binte Mirza is working in the International Centre for Climate Change and Development as a Junior Research Officer, her research interest lies in climate justice and gender equality. Can be reached at [afsara.mirza@icccad.org](mailto:afsara.mirza@icccad.org)



**Maria emphasizes that green roofs are NbS that can help in accomplishing Sustainable Development Goals and can be an effective climate change adaptation strategy in urban areas**



PIXABAY

# Dhaka sitting on an invisible bomb

## Climate change accelerating risk of groundwater contamination

Md Nadiruzzaman, Afsana Afrin Esha

Plastic, an offer of modernity, has become one of the largest and significantly important parts of our everyday life. Due to its ability to withstand the effects of the environment, adjustable characteristics, and also being untouched by time itself, plastic has become fuel for all development.

Imagine spending a day without any use of plastics in our everyday lives, it seems almost impossible. According to the Environment and Social Development Organization, Bangladesh produces around 87,000 tons of single-use plastic waste annually and 86% of these waste is dumped in landfills.

Bangladesh has now encountered difficulties in coping with the vast amount of plastic waste similar to other nations. Encountering polluted landscapes, ocean pollution, clogged drains, bags fluttering in the wind, masses of plastic piled in dumps, and road corners is very common in the country. But the impact could be accelerated by climate

change, at a scale that is yet to be understood.

Plastic pollution is not only limited to the surface environment, freshwater, and marine ecosystems, even groundwater could be contaminated by the toxic elements released from plastics as that percolates down the surface into groundwater, which we often use as our 'safe' drinking water source. The plastic-water nexus is essential to understand the linkages between plastic contamination in groundwater, health risks, and future uncertainties.

Dependency on groundwater began with the introduction of shallow tube wells in the 1970s. Use of groundwater protected small children from water borne diseases, dramatically dropped child mortality, moreover it increased the resilience of the Bangladeshi people from such diseases.

Despite other solutions such as boiling and filtering being available, shallow tube wells were patronized by international donors like UNICEF and popularised through local politicians, who capitalized on this opportunity as a means of winning votes by distributing them to their potential vote banks.

And now, millions of people depend on groundwater resources for drinking, domestic, agricultural, and industrial use. This is how the entire governance infrastructure of groundwater and state-sponsored 'safe drinking water' campaigns could contrarily produce a 'risk society' in the global South due to the dependency and use of plastics. This shows human choices, values, interests, and relationships have a greater influence over the production of a 'risk society' (Beck, 1992).

Such high dependence on the plastic-water nexus, imposes a great risk to human health. Over time, plastics break down to microplastics namely Low-Density Polyethylene (LDPE), Polyvinyl Chloride (PVC), Polystyrene (PS), Polyethylene Terephthalate (PET), and a range of reinforcing fillers, plasticizers, antioxidants, UV stabilizers, lubricants, dyes, and other polymers.

These carry toxic chemicals in the ecosystems serving as vectors of transport, and they are themselves, on the other hand, a cocktail of hazardous chemicals that are added voluntarily during their production as additives to increase polymer properties and prolong their life.



Mosaic of single-use plastic making thick layers on Dhaka's surface. The pictures are taken at an urban slum

They have adverse effects on human health- with localized effects such as increased cytotoxicity at the cell level, visual impairment, cardiovascular deficits, endocrine deficits, risk of premature birth, allergies, rhinitis, asthmatic reactions, direct toxicity, and even cancer.

These are only direct impacts on human health from groundwater consumption. There are various other ways of increasing toxicity in humans through food chains and even air. These are the future inevitable risks we will have to face through and these surely will aggravate over time.

The trouble is worsened by climate change (ie excessive heat, heavy pouring). One of the main processes of the plastic breakdown in photodegradation. Factors such as temperature and light (UV radiation) heavily impact the molecular structure of long-chain polymeric molecules.

This global issue alters temperature levels and causes erratic changes in weather patterns, additionally increasing the toxication rate of plastics through waterlogging and groundwater infiltration.

We face a global climate emergency, and now added to the list of battles

is the increasing decay of plastics and accumulation in our bodies and the environment. The relationship between the two is highly under-researched and requires a complete plan of action, especially for Dhaka city, where millions of lives are at stake.

Though the gravity of the problem is still unclear, plastics along with, several other toxic organic compounds and heavy metals such as arsenic, iron, chromium, nickel, lead, mercury, cadmium are leaching into the city's only freshwater supply every second, creating suitable solvents for polymer breakdown.

What these chemicals do to the existing toxicity of plastics and the human body remains unexplored. For what we can assume, these only make matters worse. Plastics itself, layered with climate change and further layered with such toxic compounds is a burden yet to cause chaos.

The way ahead is rough. But there is still hope amidst the doom. No single solution will stop plastic pollution and its consequences. The key to defusing the bomb will have to begin within us. We have brought this upon us and we, collectively can make efforts to stop it. No matter how small the action is, the



In Singapore, a single-use plastic reaches to the incinerator within 24 hours of being dropped off to a waste bin, which produces energy for the country and the ashes are used to expand lands into the sea





n in the city.

NADIRUZZAMAN

ripple effects of the action can be rewarding.

Beginning with self-awareness following the three R's- reduce, reuse, and recycle, to steps taken at a national level, everything matters. Facilities and infrastructure must be developed for recycling with proper training given to the formal and informal groups associated with plastic waste management. Alongside recycling and incineration, there are numerous ways of preventing these plastics from reaching the landfills.

Countries such as Sweden, Germany, the UK, and Singapore are efficiently managing their plastic waste through strategies that can be replicated in Bangladesh. There is a large scope of using monomers of plastics in the construction sector.

In Singapore, a single-use plastic reaches to the incinerator within 24 hours of being dropped off to a waste bin, which produces energy for the country and the ashes are used to expand lands into the sea.

In Bangladesh particularly, the addition of small amounts of properly selected polymers to conventional cement-based structural material could protect the infrastructure in flood-affected areas, which in turn would save



**Now added to the list of battles is the increasing decay of plastics and accumulation in our bodies and the environment. The relationship between the two is highly under-researched and requires a complete plan of action, especially for Dhaka city, where millions of lives are at stake**

huge revenue every year.

We see lots of innovative small projects in Bangladesh, such as extracting liquid fuel from plastics, which needs right patronisation to flourish. On the other hand, since some areas may already be contaminated by microplastics, innovative technologies such as membranes, electrodeposition, and coagulation can be used to remove them.

Other innovative tertiary treatments, such as rapid gravity sand filters and dissolved air flotation provide removal rates of microplastics are also at use. There are also other innovative technologies targeting the removal of different polymers.

Proper development of the policy concerning chemical exposure caused by plastic must be set in place while

encouraging research about developing nations like ours. Development of smarter and more recyclable plastics materials and making recycling and wastewater treatment processes more efficient must be investigated thoroughly.

The mass population of Dhaka city needs to be made aware of the severity of the dual impact of climate change and plastic contamination. With proper knowledge and collective acknowledgment, it is possible to tackle any challenge, even the ones we cannot see. ●

Dr Md Nadiruzzaman is currently working as a Senior Researcher at the Institute of Geography, Hamburg University. He also affiliates with the International Centre for Climate Change and Development (ICCCAD) (Bangladesh), Humanitarian Advisory Group (Australia), and Flowminders (Sweden). His research interests are on migration, climate change adaptation, and livelihood resilience. He can be reached at md.nadiruzzaman@uni-hamburg.de.

Afsana Afrin Esha is an intern at International Centre for Climate Change and Development (ICCCAD). She obtained an MSc in Climate Change and Development from Independent University, Bangladesh (IUB).



## **Education for girls is in a crisis amid a crisis**

Education in the time of Covid-19 pandemic





COURTESY

Faiyad H Rishal and Adiba Binte Kamal

**B**ithi, a ninth-grader, and Shajib, a seventh-grader, are siblings. They come from a low-middle income family from a rural area in the southern belt of Bangladesh. Their father, Bodrul Mia, runs a small business and somehow has managed their cost of education till now.

When the COVID-19 pandemic started, the cost of education and managing the cost of two children. When Cyclone Amphan affected the area where they lived the situation became impossible. Bodrul Mia was still trying to survive using their land and pond, but the recent floods stopped their way to cultivate rice and fish as well. Now he is thinking about marrying Bithi off since it has become almost impossible for him to continue to bear the basic cost of two children, let alone education and other basic needs.

This scenario might seem familiar to you as well. Not only in a rural area but education in urban areas has also been affected heavily during this dual crisis, especially when it comes to a teenage girl's education.

A family I know personally, who are currently living in Mirpur, Dhaka has also displayed such behaviour of favouring one child's education over the other. The parents are prioritizing their son's education over their daughter's. This is why when both of them have class at the same time they let their son use their device to join the online class depriving their daughter. From their perspective, if you invest in the education of the son in the family, he will later take care of you when you are old; but the girl will likely be gone to her husband's house.

This kind of discrimination become more visible during moments of crisis. Climate-induced extreme events like floods, cyclones, and storm surges have become more frequent in recent years. Bangladesh is one of the major hotspots for climate change due to its geographical and hydrometeorological setting. Consequently, our socio-economic vulnerability to climate change also increases since the majority of livelihoods are dependent on agriculture.

The current pandemic compounded by Cyclone Amphan and the recent floods has made life for those living in rural parts of the country more difficult, as people are having to recover from multiple shocks. Education is one of the many sectors that has been seriously affected during this dual crisis moment.

Education institutions have been



## Recent flood water has seriously affected 3,472 schools and washed away 20 government schools

closed since March 17 due to the pandemic. Recent flood water has seriously affected 3,472 schools and washed away 20 government schools according to the directorate of primary education. Many institutions have been destroyed by riverbank erosion; many have been utilized as shelters for those who have been displaced.

The government has taken initiatives like broadcasting classes on television, making the internet more accessible and internet packages more affordable. However, some areas are out of cell-phone coverage, many families have uneven access to the internet and many just can't afford the added cost.

Almost 8 hundred thousand students are facing learning losses (Care Bangladesh, 2020) and young girls are more likely to drop out of school in such a moment of crisis. Socially constructed roles and responsibilities, uneven distribution of power and resources, low economic opportunities make people

vulnerable to any crisis. The two scenarios that we explored at the beginning of this article are just an insight into the gender inequality that exists in our society.

Men and women, boys and girls are facing this dual crisis differently and it is needless to say that girls are the ones who are most vulnerable. For instance, communication to local roads (which can be affected due to extreme events) can heavily influence the challenge for teenage girls to access education, with families not allowing girls to travel alone in fear of their safety, where boys are allowed to go as it is considered they can manage.

Displacement of families in river-dominated areas is one of the major reasons for girls dropping out of schools and studies show that a large proportion of the migrated people are women. Not only physical or infrastructural settings make it harder for women to access education, but also the mental or social construction of our communities which heavily influences it. In a telephone survey, Manusher Jonno Foundation (MJF) found that the child marriage rate is likely to increase during moments of shocks.

As the intensity of extreme events is increasing each year and causing infrastructural damage, thus societal issues related to these crises are making women more vulnerable in case of access to education. In order to build a sustainable, climate-smart and disaster-resilient educational system in our country where 49.4% (World Bank, 2019) of the total population are women, we should not overlook mainstreaming gender dimensions in Climate Change Adaptation (CCA) and Disaster Risk Reduction (DDR) framework.

Faiyad H Rishal is an undergraduate student studying Geography and Environment at Jahangirnagar University. He is currently affiliated with ICCCAD as a participant in RISE youth leadership program.

Adiba Binte Kamal works as a project associate at ICCCAD.

# How to ensure youth voices in climate policy

It is their future that is at stake

Shohail Bin Saifullah

**B**oth youth voices and actions are vital in the process of advocating for adaptation when tackling the impacts of climate change. As a society, we need to look past the mass individualism and come together as a community, as one person may possess skills that another does not.

Greta Thunberg's lone initiative, for example, has set in motion a set of events that have cascaded, one of which is the climate movement known as Fridays for Future. Before we address youth in policy and climate change adaptation, we need to first assess the barriers that the youth face in policy dialogues and policy-based adaptation and how they can be addressed.

If we are to quantify the barriers that youth face in trying to take part in policy dialogues, they can be summed up in four points.

## Education

Proper education for youth is necessary, as young people may have the drive/passion for participating in policy dialogues, but they lack the prior knowledge required to take part in it. Resulting in their energy being misguided in many scenarios.

## Institutional barriers

Even though many youth have access to education they may not have the support from a proper institution. Albeit trying to take part in stakeholder meetings may gain them some foothold, the access they have may be due to an ulterior agenda. The youth are accepted into the discussion panel to meet certain criteria or quota, which may give them some form of access to a relevant platform but does not fully allow them to take part in active policy designs.

## Lack of credibility

The youth lack the credibility to have their voices heard. If we are to address the previous two points, we need to al-



SYED ZAKIR HOSSAIN

low the space where youth can undergo capacity development to form the necessary credentials and effectively engage.

## Lack of finance

Financing has always been a struggle, even if youth may have the institutional backing to engage. Most of the financing or money is controlled by the governmental agencies or donor organizations, which requires the youth to jump through a lot of hoops to gain access to.

It is of high importance that donor organisations and governmental agencies start taking the concerns of youth when drafting policies, otherwise there is bound to be a gradual decrease in youth engagement when it comes to community development.

Given the current landscape, decisions are taken by the older cohort, although the implementation and groundwork are looked after by mostly



It is of high importance that donor organisations and governmental agencies start taking the concerns of youth when drafting policies, otherwise there is bound to be a gradual decrease in youth engagement when it comes to community development

those from younger generations. Steps need to be taken to allow young people to take initiatives in social ownership and social leadership.

We need to start pushing youth into community-based participation and community-based policy dialogues and allow for better youth engagement. After all it is the younger generations moving forward who will have to deal with

the impacts of climate change and those whose futures are dependent on the decisions made today. ●

Shohail Bin Saifullah is working in the International Centre for Climate Change and Development (ICCCAD) as a Project Associate, his research interest lies in understanding the internal migration of Bangladesh.