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**CT** | Climate **Tribune**



**HELP IS ON THE WAY**

## QUICK BYTES

### Champions League final annulled in Africa

A referee Gehad Grisha has suspended after controversy in the final of the African Champions League, where hosts Wydad Casablanca were denied a penalty and had disallowed, the Confederation of African Football said Tuesday. The comes after the Moroccan Football Federation lodged a complaint at Grisha's decisions during a match pitting Wydad against Tunisia. Grisha ruled out a penalty for the hosts, Wydad Casablanca, but denied them a penalty after replays.

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## Rice price fall farmers hard

### UNB

Farmers in Brahmanbaria have been counting about Tk300 loss per mound of rice here in the current Boro season due to fall in rice prices. Visiting Ashuganj rice market, the biggest rice wholesale market of the country's eastern region, the UNB correspondent and farmers from Kishoreganj, Narail, Brahmanbaria, Moulvibazar, Sunamganj and Comilla are buying rice directly from the mill owners. The farmers are counting huge losses as they are not getting a fair price this year. Mill owners are buying maximum rice at a low price produced in the haor areas instead of the government.

The production cost of per mound of rice including the labourer cost is near Tk1,000 while its selling price is only Tk550 to Tk750 in the local markets, they said. Karwan, a farmer, hailed from Sarail upazila, a day labourer, said he is waiting for a day labourer to buy rice. He said he is waiting for a day labourer to buy rice. He said he is waiting for a day labourer to buy rice. He said he is waiting for a day labourer to buy rice.

### st Ham to release Carroll, Adrian and Nasri

Manchester United striker Andy Carroll, goalkeeper Adrian and four other team players set to leave the club when their contracts expire at the end of next month, the Premier League said yesterday. Carroll, who joined Manchester United on loan from Liverpool in 2012, helped the newly promoted side in their top flight status before announcing his move permanent the next day. He scored a total of 34 goals for the club in all competition. Adrian made 150 first team appearances for Manchester United since arriving in east London from Spanish club Real Betis in 2011.

### Games recalled after compassion

Manchester City starlet David Alaba has been linked with a move to Bayern Munich, can advance his career in the Bundesliga. The high-profile move after the success of Wales's Euro 2020 campaign with Croatia and Hungary. Bayern winger missed a training session in Portugal following the death of his father but Wales manager Ryan Giggs will be expecting him to play against World Cup finalist Croatia and Hungary on June 8 and 11 respectively.

### Bayern boss Hoeness says Sane transfer tough

Bayern Munich president Uli Hoeness has admitted that it will be "difficult" for the club to sign Manchester City winger Leroy Sane. Germany international Sane, 23, has been heavily linked with a move to Bayern in recent weeks after reportedly becoming unhappy at a lack of game time in Manchester. Hoeness confirmed last weekend that Bayern were interested in Sane, but suggested it was too expensive for the Bundesliga champion.

# Celebrating

# Z

## 10TH ANNIVERSARY

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## Dhaka Tribune



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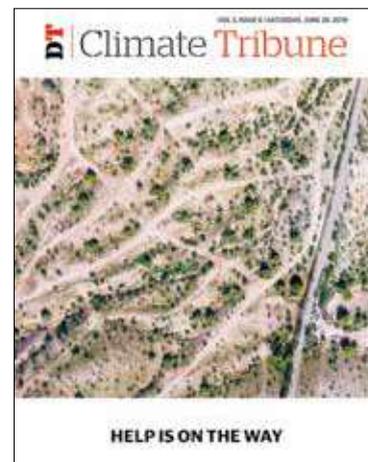
### Dear Readers

This month's issue focuses on a number of different issues. Reading through these reports and commentaries, it soon materializes that they are all connected.

Climate change impacts lives in more ways than readily apparent. As we see in the stories inside, they range from women navigating outside to women having to travel miles for drinking water.

One of the common strands that connects most of the stories is how climate change impacts women. From being the primary victims of natural disasters to the disadvantageous situation they are in when in the shelters, women's struggle is a big part of climate change, as aptly reflected in the articles inside.

The issue of salinity is not exactly underreported, but it still merits more attention, because it is an ongoing crisis. The response to it has been inadequate as thousands continue to suffer. It is not only affecting lives in the most direct manner, ie drinking water



COVER: ADAM MUISE

and agriculture, but it poses further threat to buildings and structures, as reported in one article here.

We hope, these articles and Climate Tribune in general, will help build the knowledge base that will be accessible to the general public and environmental activists, paving the way for creating a better understanding about climate change. ■

# TANNERY POLLUTION



PHOTOS: MAHMUD HOSSAIN OPU

## RELOCATING THE HAZARIBAGH TANNERY INDUSTRY

A "YAY" OR A "NAY" FOR IMPROVING DHAKA'S CLIMATE ?



**Nishat Tasnim**

When addressing climate change issues, environmental hazard involved in the processes of leather industry is often ignored. The leather industry contributes to climate change through the emitting of greenhouse gases as well as the emission of heavy metals, dyes and acids contributing to ecological degradation.

In order to tackle climate change, there is a need to start considering reforming the leather industry. Globally this industry accounts for nineteen percent of greenhouse gas emissions. During the various life cycles on its path to a final product, contributes to the carbon footprint. The major compounds found in wastewater from the production process are greenhouse gases. These compounds are primarily methane, nitrous oxide, sulphur hexafluoride, perfluorocarbons and hydrofluorocarbons.



“ Changing the area of the source does not alter the transboundary nature of these chemicals and the impact of pollutants ”

Bangladesh is one of the world's most climate-vulnerable countries, and its capital, Dhaka, is exposed to an array of climate-induced hazards. All of these risks affect the country's sustainable development. Since, the early sixties, the Hazaribagh area of the capital became widely known for the booming leather industry. According to local communities, approximately two hundred leather industry flourished in the area. This industry is considered too soon to secure the position of the second-largest contributor in Bangladesh's economy. However, exponential economic growth often brings catastrophic consequences to the environment. The Hazaribagh area, along with its surrounding area, suffered from severe pollution and health issues. The river Buriganga, (the major perimeter river of the capital), used to receive 21,000 cubic meters of untreated wastewater from these industries, accounting for forty per cent of the effluent- the second most significant source of pollutants.

As of March 2017, 148 industries have been asked to relocate to Savar. However, the relocation process was prolonged due to the area's central effluent treatment plant not being constructed even after the High Court's verdict of relocating

the industries. Although, as per local information from 2019, the majority of the sector has transferred locations. This relocation process solved the Hazaribagh area's pollution issue. Moreover, the big question is, was it able to contribute to reducing the impact of climate change, or contribute to improvements in sustainability?

We all can guess the answer, and it is negative because this relocation did not even address the critical agent of climate change- Greenhouse gases. Changing the area of the source does not alter the transboundary nature of these chemicals and the impact of pollutants. No matter in which area these industries get shifted, without green-technology and eco-friendly, sustainable practices in the factories, there will not be any positive effect on climate change. Even if these impacts are not showing any instantaneous



effect on Dhaka's climate, slowly they will, and there is no denying that. Sadly, this relocation program did nothing in mitigating climate change. ■

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**Nishat is a fourth-year (final) student at the department of Environmental Science and Management from North South University. She is also a youth participant at ICCAD and a keen environmentalist.**



PHOTOS: MAHMUD HOSSAIN OPU

## ECONOMIC AND ACADEMIC OPPORTUNITIES HERALDING SOCIAL LIBERTY

FACTORS INVOLVED IN  
ENFRANCHISING WOMEN IN  
MONGLA

**Mity Mahmuda**

Gender equality is the fifth of seventeen Sustainable Development Goals (SDGs). To achieve the goal, people need to ensure equal rights of male and female in all sectors. Now the process of obtaining the objectives are becoming wide-ranging through ensuring the equal participation in educational areas, the opportunity of work with equal wages in non-agricultural sectors, and the proportion of seats held by women in national parliaments (Kabeer N. et al. 2010).

Mongla is a town situated in the south-western part of Bangladesh. Since 1954, Mongla town has become one of the busiest cities of Bangladesh due to having one of the busiest ports named the Mongla Port. During that time, females were not allowed to move along due to feelings of insecurity. Even during the day time, they usually avoided going outside of the house without a male accompanying her. The female of Mongla town had no opportunity to delay marriage and had no room to be independent. Due to having a lack of social safety for girls, none of the girls in Mongla town went to school, and child marriage was prevalent in the town.

Since father Regan, a preacher of Christian Missionary came to Mongla, the educational development, especially for girls, has flourished in Mongla town. For the last few years, several NGOs, INGOs, and Government have been working

“ Since father Regan, a preacher of Christian Missionary came to Mongla, the educational development, especially for girls, has flourished in Mongla town ”



to ensure female education through providing awareness trainings for parents and providing scholarship and sub-scholarship for the meritorious girls.

In 1985, the first school for girls established in Mongla name Mongla Girl's school played a vital role in encouraging admittance of girls to school and since 1996, schools and colleges have become more developed.

Now the primary educational facilities of Mongla town are better with qualified teachers. There is also a college for females established in 1994 called Bangabandhu Mohila College. This college offers Intermediate and Degree levels students to study and from this year (2019) Honor's level classes have started.

Previously, there was a lack of opportunity for higher studies for female students. Two-thirds of the female students come from outside of Mongla town, often facing the problem to reach class on time. Their difficulty reaching school is most noticeable during the summer and monsoon seasons, with heavy torrential rain and risks of flooding. Several students have had to inform their teachers that they are only able to attend classes for three or four days of the week. By ensuring accommodation facilities for girls, this will assist and encourage more girls to not only study.

With the help of different NGOs and INGOs, parents have now realized that education is essential for a better future for their children, as farming has a limited prospect in the area. Mother seeks to give their daughters the opportunity that they never had. Twelve to eighteen-year-old children and their mothers are getting training from World Vision on the impact of child labour and child marriage.

JJS, a social and environmental development NGO, also offers vocational training to girls and helps them to get ready to work in Mongla Export Processing Zone (EPZ) and other industries. Workers of EPZ also get training for two months after starting their work at EPZ. In the first week of July, Mohila Vice Chairman of Mongla town organized training for local girls. The Facilitators came from Aarong to teach the girls how to make handicrafts and other products for their brand.

Formerly, women of Mongla town had been permitted to work outside the home only if it was necessary for family survival. But from 1998, the employment rate for Mongla girls increased, especially after establishing the EPZ and aiding the helpless, uneducated or half-educated, divorced and single mothers with an opportunity to earn.

Within two years after creating of EPZ, the females realized the power dynamics that influences their ability to make family decisions. Professional opportunities for women increase the likelihood that women will look after their wellbeing along with that of their family. They are now less likely to suffer from domestic violence, and their decisions influence the spending of family expenses. According to one of the senior officers of Mongla EPZ, 59 percent of the present workers of the Mongla EPZ are female. Among them, around 20 percent of the women workers come from the outside of Mongla Town.

However, students from families with both parents working as labours are raised without love and care; they often adopt drugs and other social crimes. As a result, some of the families don't allow the female to work outside the home. Though a considerable number of women are now engaging with different income generation activities, still women are still prohibited from going outside the house during the night.

There should be more powerful forces within the policy domain itself that will encourage women's rights, especially laws and policies against violence against women and unjust laws. Ensuring women empowerment and gender equality needs to be a priority of policy-makers, Upazila Mohila Bisoyok Kormokorta, Mohila Vice Chairman, NGOs, and INGOs. Working together, they can provide a quality life for women, quality education for girls and proper working opportunities with equal wages. These actions will help to achieve the goal of SDG 5. ■

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**Mity Mahmuda is a Junior Researcher at the International Centre for Climate Change and Development.**

## CLIMATE CASUALTIES

# THE BLIGHTS OF SUDDEN NATURAL DISASTERS

### HOW NATURAL CALAMITIES CLAIM THE LIVELIHOOD OF WOMEN IN THE COASTS



PHOTOS: MEHEDI HASAN/DHAKA TRIBUNE

#### Shahrin Mannan

Bangladesh is highly susceptible to different natural disasters and climatic hazards as it is located in an active delta. Different slow onset stressors such as salinity intrusion and rising temperature alongside sudden calamities such as cyclone and storm surge have made the life of the inhabitants of south-west coastal belt very challenging.

Women particularly suffer the most from these environmental vulnerabilities. Such vulnerabilities are further exacerbated due to poor infrastructure and other socio-political factors. All these reduce the coping capacity of local communities to fight against different climatic shocks and stresses.

Cyclone or storm surge is identified as one of the most frequent, severe and of high magnitude sudden climatic events affecting the south-western coastal area. Cyclones of high magnitude and intensity such as cyclone Aila had a heavy toll on life and livelihoods of coastal people. Cyclone Aila brought a significant amount of saline water with it, which not only altered the level of salinity in drinking water but made agricultural farming very difficult.

Cyclone Aila in 2009, was reported as the most devastating natural disaster to have occurred in recent history. Not only causing severe damage to life and property but also leading to the significant intrusion of saline content both in water and soil.

Mahmuda, a thirty-three-year-old woman who lives with her family in Garuikhali village of Paikgacha Upazila, Khulna stated that, “The devastating Aila destroyed most of the houses, took away the roof of most of the homestead. The significant intrusion of saline water caused the death of fish, crop damage and destruction of livestock. It also destroyed the embankment which was established after 1971. Besides, some roads were also destroyed.”

Mahmuda had been involved with homestead vegetable production, which not only made her financially empowered but also reduced their family expenditure on food. With this savings, she started her tailoring business, which also strengthened her financial stability. However, due to soil quality degradation as a result of salinity, she can no longer practice homestead farming.

“Now that we do not grow paddy at field and vegetable at home, we need to buy them from the market. I have taken a loan of forty thousand taka from Grameen bank to buy paddy for the entire year. I have to repay fifty taka per week and two hundred taka in total per month. We find it difficult to repay loans with small earnings. Sometimes we take another loan to repay any previous loan.” Regrettably, she is not earning as much as she did in the past from her tailoring business and the economic tension is all but apparent.

Since women are the primary recipient of micro-credit, they have to take the mental pressure of being in debt. Being trapped under the vicious cycle of indebtedness, the propensity for domestic violence, physical abuse and mental stress towards women also increases.

Moreover, increased level of salinity, irregular rainfall pattern and prolonged drought resulted in water scarcity in this area. Besides, large scale shrimp farming has further intensified the situation. As a result, the number of potable water sources has significantly reduced.

“I used to fetch water from the nearby pond for household use and drinking purpose. However, the level of salinity in the water has gone high. Now I fetch drinking water from the only freshwater pond (more than one kilometre away) twice a week. Once we run out of that water, we consume the saline water from the pond.” The extra burden of fetching water from long distance has a heavy toll worsened by the extreme heat.

For consuming and using saline water, her children get afflicted by different water-borne diseases very often. Mahmuda also suffers from different skin diseases all throughout the year. Besides, within the last few years, her blood pressure has increased. She blames salinity and extreme heat for that.

Many contributing factors have reduced the overall well-being of Mahmuda’s family—lack of drinking water, reduced agricultural production, less family income, and increased occurrence of diseases and the ever-increasing burden of debt. While fighting against all these shocks and stresses, she is struggling to save money for her children’s education. The fear that Mahmuda might need to stop their education and not be able to provide a better life for her children is palpable as well as concrete. ■

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**Sharin Mannan is Programme Assistant at International Centre for Climate Change and Development.**



“ Moreover, increased level of salinity, irregular rainfall pattern and prolonged drought resulted in water scarcity in this area ”



# STRUCTURAL ANXIETIES



PHOTOS: COURTESY

## SPLINTERING INFRASTRUCTURE AND RUSTING MEGASTRUCTURES

### SALT DAMAGE AND CORROSION OF REINFORCED CONCRETE

**Sumaiya Binte Anwar**

Bangladesh is going through rapid infrastructural development. We often hear about a 100-year design life of megastructures, yet significant structural repairs are required even before the structure is 20 years old. Annually, considerable expenditure goes to only on repairing existing structures, much of which could be saved if they had been built differently.

Primarily, we are concerned about the strength of the structure and tend to ignore its durability. If we look forward to making sustainable cities in Bangladesh, we need to address the issue of durability and make our structures perform.

The structures in coastal areas of our country are subjected to various types of hazards such as, torrential rainfall, high wind speed, extreme temperatures, cyclone, flood, coastal

inundation and salinity. In order to make climate-resilient structures, it is essential that we keep this geographical diversity of Bangladesh in mind.

“In reinforced concrete, all common forms of serious deterioration due to salt damage are as a result of water ingress. Therefore, if the concrete could be kept inherently dry, most corrosion issues would disappear.”

In present times, when construction is on the boom in coastal areas of the country, ensuring the durability of structures should be a significant priority. Saline water is hostile to ordinary concrete structures, particularly to the steel inside, making it highly susceptible to corrosion. Unfortunately, in our country, the corrosion factor remains neglected in all infrastructural development projects.

In reinforced concrete, all common forms of severe deterioration due to salt damage are as a result of water

ingress. Therefore, if the concrete could be kept inherently dry, most corrosion issues would dissipate. The externally visible impact of rising damp and salt attack, known as efflorescence, can be seen on the external surface of walls. It causes blistering of paintwork and damage to the wall plaster.

Internal deterioration in concrete structures is due to the combination of various factors. Permeable concrete in the foundation allows salt-water to enter its pore spaces and cause physical damage to it. The periodic wetting and drying of concrete foundations may cause rising of damp where the groundwater is drawn into the brick, stone or cement by capillary action.

Corrosion of steel is the critical cause of deterioration in concrete. When steel corrodes coming in contact with this moisture, the resulting rust occupies a higher volume than the steel. This expansion eventually causes cracking, delamination, and spalling of the concrete material. Once the steel-concrete debonding occurs in critical parts of the structure, it leads to an ultimate capacity reduction.

Mongla Port Municipality gives an alarming picture of corrosion of reinforced concrete. Several concrete structures show clear signs of salt damp. The discarded labour hospital, not even 20 years old, has exposed steel on the structural members. Despite the risk of collapse, it is still in function. Damp patches of efflorescence disfigure the interior walls of most of the houses and government offices.

The port city is undergoing massive development in the present days. This issue needs to be addressed for sustainable planning for the city. Any infrastructural developments must address the corrosion factor for the durability of the structure. Megaprojects like Rampal Power Plant should take adequate corrosion-resistant measures for ensuring long-term durability.

Most often, the use of unsuitable or salt contaminated raw materials like water, aggregate, and cement has been a significant cause behind this problem. Clean water is a vital ingredient of concrete as it actively takes part in the chemical reaction with cement. Lack of freshwater is a significant drawback for construction in Saline prone regions like Mongla.

Typically, locally available saline water is used in concrete mixing, which increases the risk of corrosion in steel. Brick chips are widely used for concrete production in place of stone aggregate in developing areas due to its high availability and low cost. The resulting structures have a lower strength, high water absorption, and high permeability characteristics compared to standard concrete—making it more susceptible to salt attack.

Bangladesh National Building Code (BNBC) refers to various aspects of construction in coastal areas but has a little give away about corrosion of structures in these areas. Therefore, broadening the scope of the building codes, specifically the



zone-specific construction codes by incorporating standards to address the corrosion issues and ensure longevity.

It is essential that we look ahead into long term planning. From the beginning of the construction process, measures should be taken to ensure the durability of concrete in a hostile saline environment. Even though concrete structures cannot be prevented entirely from deteriorating, adequate measures can significantly extend the life of such structures. ■

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**Sumaiya Binte Anwar is a Research Officer at International Centre for Climate Change and Development.**

# CYCLONE STUDY



A ship lies half-submerged after Cyclone Bhola

PHOTO: DR ALFRED SOMMER

## GLIMPING CYCLONE BHOLA

### NEARLY FIVE DECADES ON, ONE OF BANGLADESH'S WORST NATURAL DISASTERS REMAINS UNDER RESEARCHED

**Sam Jaffe**

As a historian studying grassroots activism during the Liberation War, a cyclone was not something that I expected to stumble upon in the field. Cyclonic storms in the Bay of Bengal are famous and, as one Singaporean newspaper wrote in 1924, “for sheer, confused danger there is nothing equal to the tumultuous seas raised by a cyclone in the Bay.” (Amrith, 2013) Last year, while conducting research in the USA and Bangladesh, I stumbled upon one of these cyclones. The following article offers a small glimpse of a powerful story of humanitarianism in the aftermath of Cyclone Bhola, which struck the Southern coast of Bangladesh in 1970. It is not drawn from structured interviews or participant observations, but rather from a different kind of fieldwork - that of a researcher traversing the shifting surfaces of memory while trying to understand the legacy of what happened in Bhola nearly half a century ago.

#### FROM DHAKA TO MANPURA

In the 1960s, a group of American doctors and their families came to Dhaka to work at the Pakistan SEATO Cholera Research Laboratory (CRL, today known as ICDDR,B). While living there, they formed close, often lifelong friendships with Bengalis of all backgrounds. By the end of the decade, the CRL had conducted groundbreaking research into, amongst other things, Oral Rehydration Therapy for cholera, which the UN has credited with saving millions of lives around the world ever since (Nalin and Cash, 2018).

On the night that Cyclone Bhola made landfall in November 1970, there was a torrential downpour in Dhaka. Watching from a friend’s veranda, Alfred Sommer, a young epidemiologist at the CRL, recalled his surprise: “there were whitecaps on Gulshan Lake, how could that happen?” “The news got out very slow because there was no communication,” remembered Dr Henry Mosley, and firm information about the storm took days to reach Dhaka. Little by little, the CRL

group gleaned that the storm had caused extreme damage and killed a horrifying number of people.

The efforts of a committed group of women formed the nucleus of what would become a months-long project to assist cyclone victims. In her moving memoir, *Catalyst*, Cornelia “Candy” Rohde, whose husband Jon worked at the CRL, paints a vivid picture of the moment she and her close Bengali friends, Runi and Putul, decided to do something to aid the survivors:

“Our tea grows cold as we stare at the headline about the death and destruction caused by the cyclone. I blurt out, ‘Let’s do something, anything that helps.’ These few words are like pebbles. Once cast, they cause ripples that expand and expand in ever-increasing circles; ripples that touch many lives and leave indelible memories” (Rohde, 2013).

Along with Martha Chen and Peggy Curlin, two other Americans also associated with the CRL, and key Bengali allies including a young Fazole Hasan Abed, the group decided to gather whatever supplies they could and establish a private humanitarian relief organisation. One week after the cyclone struck, the first supplies were distributed and the group soon decided to base their efforts in Hatiya, calling themselves the Hatiya Emergency Life Project (HELP).

Heading in search of a distant char named Manpura on one of the group’s early relief missions, Jon Rohde later wrote:

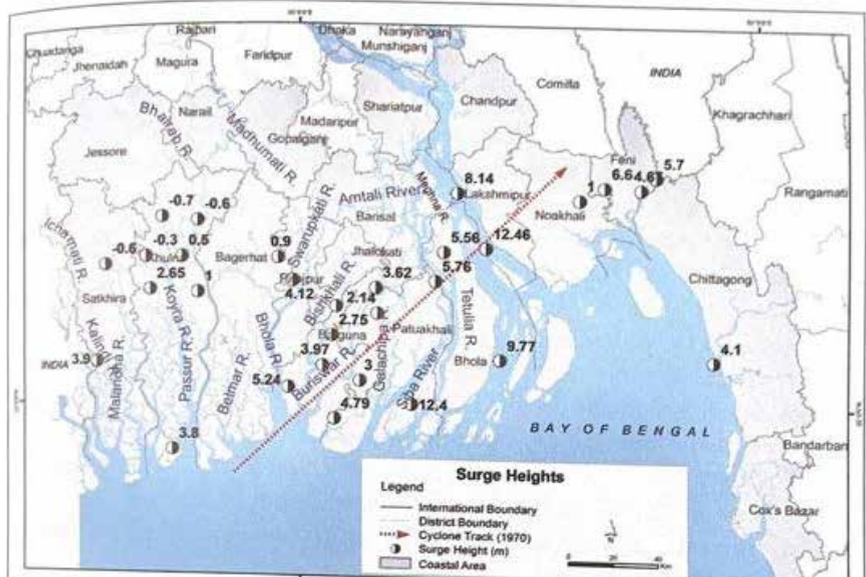
“I’d been assured Manpura was off there somewhere—almost twenty miles long and two wide, it couldn’t have disappeared entirely in one night. The smell came first, then the tops of coconut palms, floating on tiny stalks above the placid bay—at last the low mud bank with its horrendous burden of decaying bodies...I scrambled up the slippery bank, nearly retching, and stood on a dirt mound that only last week had been a home. There before me was a beautiful, golden, flattened and utterly desolate land” (Rohde, 2013).

Alfred Sommer, too, recalled his feelings of shock upon first seeing the island: “we didn’t know where we were going...and then we got off...I’ll never forget...the beach was...just filled with dead human bodies [and] dead cattle... that’d been washed back onto Manpura.”

The horror of this landscape was matched only by the group’s determination to help the traumatised survivors and they quickly set to work distributing supplies. Dr Richard Guerrant, who medically examined survivors, later wrote in his diary that many of them were understandably shaken but relatively healthy, besides one common symptom:

“I ended up seeing a number of people that had deep gouges in the inner parts of their thighs and their arms. I finally asked this poor old...guy who had this really deep gash wound that didn’t look good...where on earth this had happened. He pointed to a tall palm tree. He said, ‘that tree is my life.’ It was only then that I realized that however many feet or meters of water literally made the top of those trees the only thing to hold onto for life.”

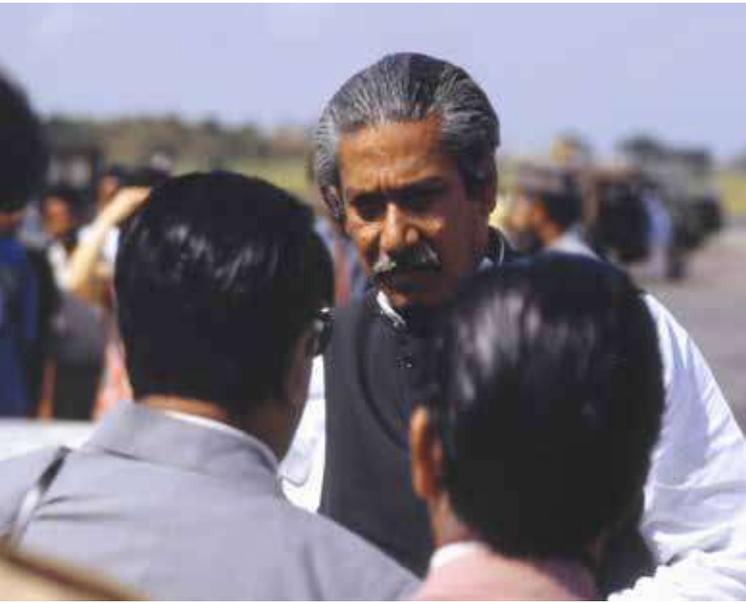
In the weeks and months following the cyclone, HELP’s volunteers worked tirelessly to arrange supplies from Dhaka, set up an emergency food and clothing distribution programs, provide medical assistance, and rehabilitate the survivors. Alongside these efforts, Henry Mosley and Alfred Sommer conducted epidemiological surveys of the cyclone-affected areas for US officials to guide humanitarian relief efforts,



Cyclone Bhola Track and Storm Surge Heights (Ali and Choudhury, 2014)

estimating that around 224,000 people had been killed (Sommer and Mosley, 1972). The months that followed the cyclone, however, were perhaps the most momentous in Bangladeshi history: the 1970 elections which delivered a resounding victory to the Awami League, the tense negotiations with Yahya Khan’s military regime, and the eventual crackdown that sparked the Liberation War. Although the conflict prematurely curtailed long-term rehabilitation programs, HELP’s staff (many of whom were evacuated with other foreigners from Dhaka in April), remained concerned for the fate of the cyclone survivors and worried about the prospect of a famine. From a distance as activists, they supported Bangladesh’s liberation struggle with the same energy that had characterised their humanitarian relief efforts. Many returned to Bangladesh after the war as doctors, development practitioners, and researchers, and they are still close with friends in the country that they grew to love five decades ago.

# CYCLONE STUDY



Bangabandhu Sheikh Mujibur Rahman Visits the Cyclone-Affected Areas  
PHOTO: DR ALFRED SOMMER

## Remembering Cyclone Bhola

For history students, research often comes down to engaging with documents written by people who have long since passed away. Rather than the soft kada of the Sundarbans or the bustling energy of an NGO's office in Baridhara, our field usually consists of a reading room with air conditioning, a finding aid, and a tall stack of papers. The living history that inheres in people's memories is rarely accessible to us and, when it is, we are not trained in how to deal with it. But my experiences engaging with such living histories in Bangladesh have taught me that it is often the stories drawn from speaking with ordinary people which make the significance of an otherwise obscure aspect of the past much clearer.

Nearly half a century after it made landfall, the destruction wrought by Cyclone Bhola in 1970 has long since passed. Yet, although it caused one of the highest ever recorded storm surges, impacted nearly 5 million people, and killed anywhere from 200,000-500,000 (estimates vary) across Southern Bangladesh, this cyclone is not as well researched as its recent counterparts Sidr and Aila (Ali and Choudhury, 2014). Certainly, the English-language scholarship about what occurred in 1970 seems limited to either the political or meteorological significances of the cyclone. Yet as the title of Cornelia Rohde's book, *Catalyst*, suggests, it also engaged a wide range of relief groups, spurred substantial humanitarian activity, and underpinned the motives of a key set of pro-Bangladesh activists in the USA and UK in 1971.

As the 50th anniversary of the cyclone approaches, the need for research to unearth the presently understudied aspects of its history remains strong. Amidst other commemorations for Bangabandhu's 100th birthday and the

“Certainly, the English-language scholarship about what occurred in 1970 seems limited to either the political or meteorological significances of the cyclone”



"Cyclone Syndrome"

PHOTO: DR ALFRED SOMMER

50th anniversary of independence, however, such research may be sidelined in favour of nationalistic scholarship that emphasises the event's significance on the pathway to independence. While commendable, this would also be a great shame because it would leave a fuller appreciation of the cyclone absent from the historical record. Like the Liberation War itself, the living history of Cyclone Bhola is still with us and researchers interested in understanding the nature of environmental disasters in Bangladesh must act to engage with and understand it.

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**Sam Jaffe completed a master's degree in international history at Columbia University and the London School of Economics. His research examined grassroots activism in the USA during Bangladesh's Liberation War. He can be contacted at: [s.jaffe@columbia.edu](mailto:s.jaffe@columbia.edu).**

## SALINITY INTRUSION



PHOTOS: COURTESY

# HUNGRY TIDES, SALTY LIVES

# SALINITY INTRUSION

**Raka Sen**

To get to the Bangladeshi Sundarbans, I usually drive from my grandfather's home in Calcutta to the Vomra Border. Inevitably, I get stuck at the border as foreign passport-holders travel over land so rarely. This year the head officer on the Bangladeshi side bought me a coconut full of water. He remembered me from my last visit and, while I still had to wait for hours, he wanted to be hospitable.

Next, I took a CNG to Satkhira, a micro down to Shyamnagar, and a rickshaw van to the ghat, where I stumbled clumsily over uneven concrete tiles into a bhotboti. Chugging along steadily to the rhythm of the engine as we navigated the tides, I noticed that the boat had special pillars installed which you could drape fabric over to create a small pocket of shade. When a woman on the boat asked the driver why the fabric wasn't there this time, the man shrugged and said that it didn't matter, it was only for tourists anyway. "Well, what about the people? Do they not feel heat too?" she replied. Silence, a glance, and his eyes glazed over and returned to the river.

Next and finally, a motorcycle ride to the village. The motorcycle drives along one long edge of an embankment, or bandh, parallel to another identical embankment. These embankments are dotted with large shrimp fields and then clusters of mud houses that sit right at their base and enjoy the protection that these massive earthen berms offer. Once in a while there is a small, wooden structure right on the embankment that sells biscuits and tea. Next to these makeshift shops, there is always a single wooden bench that two or three men perch upon so comfortably that it is impossible to imagine them ever moving anywhere else. Crossing over from one embankment to another in most places means crossing about 15 feet over two long bamboo sticks that are precariously secured on each end. The motorcycle drives to the one real bridge, has the passengers disembark, and then slowly drives over. As we crossed, I noticed that, while it was pristine last year, this year it was in much worse shape. The driver attributed this to the bandh being broken during Cyclone Fani. Ten more minutes on the motorbike, and finally, Gabura.



“These displaced populations are still living in inadequate highly vulnerable makeshift infrastructure only their landscape has changed from rural to urban”



Every time I make this journey I stop and think, this is the most remote place I have ever been to. What I saw last year as the Sundarbans' natural beauty, this year I saw as hints of the complicated relationship between salt and this landscape. Before beginning my research in the Sundarbans, I don't think I had ever thought about salt so much. I'd never thought of salt as the force of nature that I now know that it is. One of my best friends often tells me that he's 70% water, so if I like water I automatically like 70% of him no matter what he does. But what happens when that water is salty? This is always one of the first things that crosses my mind when I go to the Sundarbans and try to grasp what it feels like to live with salty waters. In the Sundarbans, as the climate changes, the salt water

from the Bay of Bengal seeps slowly into the villages that inhabit the forest. Cyclone Aila catalyzed this change, swiftly bringing in salt that has intruded on people's water, homes, land, and bodies.

Arriving in Gabura, I look around and I see simple mud homes with an outhouse and small ponds. The homes with bigger trees and plants tend to be cooler, and I've noticed that the villagers guide me almost naturally to these homes. This year, there was a brand new concrete road that everyone was excited to tell me about within moments of my arrival. They said that next year there might even be street lights. Meanwhile, there were six little boys on the side doing flips and tricks into the pond, showing off and curiously seeing if I remembered them from last year.

## SALINITY INTRUSION



These ponds are essential for daily life. They belong to each house or are sometimes shared with a neighbor. The functions of the pond include providing drinking water, water for bathing, water used for the bathroom, a place to raise freshwater fish, doing laundry, and washing dishes. When Cyclone Aila hit the Sundarbans in May 2009, it irreversibly salinated these ponds: immediately killing off the freshwater fish and drinking water supply as well as posing continued health challenges for those who use this water for their bathrooms and bathing. A villager in Gabura explained to me that, “When you bathe in that water, you ruin your body. In that water, a lot of people’s eyes have gone bad.” The salt accumulates on their skin even after bathing. The villagers describe how one small cut turns into a salty mess from being washed endlessly in salt water. And how when they are sick, bathing in salt water keeps them in poor health for even longer.

To adapt, the villagers have had to find new access to fresh

water. Usually, this results in women walking an average of 5-10km round trip to access fresh water almost daily. These walks have their own set of troubles such as placing women in areas they usually would not have to go to and exposing them to additional risks from tiger attacks, snake bites, slipping off embankments into crocodile infested waters, and unnavigable muds. Because they are carrying it home each day, this water is reserved for drinking. Therefore, washing dishes, clothes, bathing, etc, all take place in salty waters.

One of my respondents explained that “[Fresh] water is very far from here. 25 or 30 minutes distance. I go by walking but many people go and bring them by cycle. Usually I can just go once but on hot days I have to go at least twice.” The women of her village recounted tales of digging a tube well with the hopes of finding sweet water and still finding salt water. They talked about how crushing it is to live in a place that used to support their lives in many ways, and now because of the salt that support is quickly disintegrating.



“These displaced populations are still living in inadequate highly vulnerable makeshift infrastructure only their landscape has changed from rural to urban”

Now, they use a mixed system of walking to fetch water and rain catchments. When their rain catchments run low, the women have to walk at least three kilometres (almost two miles) to get water and a lot of it spills out of their large drums on the walk home. Some do not have childcare so they hold their child in one hand and their water drum in the other. Some people have given up on the daily struggle for water and just drink salt water with chlorine pills to kill of the possible diseases. Another villager explained that though she has to trek an “hour each day to get water, [it is still] a little bit salty.”

Traditionally, there is a season where homes are built, it is the season right before the hottest months. The underlying logic being that the hot months will ‘bake’ the mud homes into a hardened brick like structure. Without the drying process, the homes exist in a perpetual wetness and are significantly less sturdy. Homes in the Sundarbans are usually made of mud. These types of home can be built rather quickly and are usually built during the spring to give the mud the summer to harden enough to weather the winter and rainy months. The villagers conveyed that the salt in the mud changed the way it dried. They added that the additional rain each year, made it so that during the monsoon season their homes were perpetually damp. Aila occurred during the summer and many families had to rebuild their homes during an inopportune time. A few of my respondents stated that their homes never really dried because of this, which made them worry about the stability and longevity of these new homes. The women of Gabura speak of a type of muddy labor that is involved with cleaning and repairing their home each day. Since the cyclone, since the salt, more people have been putting their resources into building concrete homes.

“The vegetables are okay, but it is not as good as before Aila. I don’t get it, the plants just kind of want to die.” Aila uprooted the gardens and salinated the land such that nothing would grow back correctly. The absence of traditional crops and fish dispirit residents. Sundarban residents are deeply connected to the land, which is unmistakably marked in their attachment to the traditional fish and vegetables of the land. One woman explained that with all the changes to the food, the fish and the land, “home no longer felt like home”.

Now when I think about salt, I have a powerful mental image of how the salty residue that leaves cracks in the dirt leaves the same effect on people’s skin in the Sundarbans. How usually people in the Sundarbans don’t need to cook with salt because it is already embedded in their lives. How salt traps heat, and makes everything feel hotter. How it affects health in many ways. How salt, something that in my life is mundane, is a natural force to be reckoned with in the Sundarban. ■

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## FIELD VISIT

# ENGAGING YOUTH WITH THE LOCALS IN CLIMATE ACTION

### CFTM LEARNING VISIT



Fishing boats docked at the island Union of Gabura

PHOTOS: FAISAL BIN ISLAM

#### Faisal Bin Islam

On the 12th of May 2019, thirteen students from five different universities packed their bags, boarded a bus and headed to Satkhira for a week out of the bustle of Dhaka City. A team of researchers from ICCAD accompanied the students. Their destination was Shyamnagar, a coastal region on the outskirts of Sundarbans, well known for its vulnerability to the impacts of climate change. In the course of the following five days, they wanted to know two things. Firstly, what were the pre and post-disaster events when cyclone Fani hit the region. Secondly, how people are surviving extreme climatic events like cyclones, flooding and salinity intrusion, living with poverty, superstitions and fear of tigers at the same time.

#### Are safe Shelters not safe for all genders?

On the first day of the learning visit, students went to see a newly constructed cyclone shelter/primary school with the local youth volunteers of CSRL in Datinakhali village. It was a

two-storied building with an open ground floor. A water tank which harvested rainwater connects with a hand pump on the first floor. Ramps are installed on the ground floor for the mobility of people with disabilities. However, the ramps only gave access to enter the shelter, as if they were never meant to go to the upper floors (which are only accessible by stairs). There were segregated toilets, but no designated separate rooms for male and female. After a while, when the students interviewed the locals in the vicinity, the men did not bother about the situation, as for them, keeping their family together is their most significant concern when a cyclone is imminent. However, when the females were interviewed separately, they told a different story. They feel really embarrassed in front of hundreds of people in the shelter to express their needs out loud. Even if they are drenched by flood/rain at the critical moment and need a change of clothing, they could not do it to save themselves from rude mutterings and stares. Shelters may withstand the storms to come, but people's stigma towards gender and the disabled will not change without proper education.



Students talking with one of the 'Bagh Bidhoba' from Gabura

### The Tale of Gabura

Gabura is an island union at the outskirts of Sundarbans. For hundreds of years, people of Gabura worshipped their forest gods to protect themselves from tigers and natural disasters. All their worship is now coming short in front of climate change. Severely affected by Cyclone Aila in 2009, the union has lost all its fresh water sources. They are facing salinity intrusion which they have not faced before. They are experiencing extreme disasters which they have not seen before. The devastation of Aila left them in despair for years. Aklima Begum (35) is a "Bagh Bidhoba" (widow of a tiger victim) in Gabura. Financed by Oxfam, she traveled to more than five countries to tell her story and her struggles during Aila and how she managed to adapt to the adverse situation being a widow in a conservative, superstitious community. According to her, "When you ask people how many children they have, they will only count their sons, not the girls. Because girls are only a burden to them".

In Gabura, devoid of any livelihood options, people are migrating seasonally to different labour jobs and brickfields of Dhaka, Barisal and other major cities. A system of 'middlemen' has grown over the years surrounding these labour movements. Also, when they come back, they search for work in crab farms. As crab farming is growing day by day in the locality, people returning are reluctant to bring their old way of livelihood, making it almost impossible to restore the ecosystem.

However, there is still hope for these people. Children in the islands go to school, even if it means crossing the river every day. Some of the children even tried to talk to the students and shared what they thought about their village. Unlike their parents, they do not want to end up being farmers and fishermen. Instead, they want to become teachers, doctors or visit countries they have not been to before.

### Talking with the locals

In two separate focus group sessions, students tried to understand the living condition of the local villagers and the power relation between male and female. In the female group, all the women were facing severe levels of anxiety, sexual and reproductive health issues. The village has only one doctor appointed to them (for all matters). In the male group, participants were ignorant about the health issues of their female households. "Safe Water" was their most crucial problem. Women and children walk two kilometres every day to fetch water from the neighbouring village. Some of them use drums to store rainwater, which is expensive, and most of them cannot afford it. They sometimes access microfinance to try alternative livelihood options, but most of their initiatives failed for lack of knowledge. During Cyclone Fani, even when people from the village were getting text messages periodically about the situation of the storm, they only resorted to the shelter at the last moment. When there was no space for people to get into the shelter, they tried to reach the embankment to find high ground, unknowing of the fact that a lightning strike can be fatal. However, in all of these, even if they are illiterate, they did not forget to educate their children. One of the participant's son was an undergraduate student at Dhaka University, which shows how much they care about their children's education.



A student interacting with the local villagers at Datinakhali

# FIELD VISIT

## Meeting the Young Climate Volunteers of Shyamnagar

On the third day, students visited the Jalabayu Parishad office of CSRL to meet the climate youth volunteers of Shyamnagar. It was amazing to see a diverse set of youths working together without any monetary incentive to become the voice of their community. One of the volunteers worked under UNICEF as a young journalist, and another was a village police volunteer (raising her voice in child marriage issues). They told stories of how they execute social media campaigns, raise awareness of youth and women on the importance of women education, disaster management and sanitation through cultural programs and utilize print media to spread both concerns and positive news of their locality. Although they are young, they regularly face climate-induced disasters in their locality. In cyclone Fani, they played an active part in organizing volunteers, receiving and delivering early warning signals and taking people to the shelters. In this interactive session with the youth, students learned that even the youth from the disaster-prone areas could play a significant part in climate advocacy and campaigning.

“ Financed by Oxfam, she traveled to more than five countries to tell her story and her struggles during Aila and how she managed to adapt to the adverse situation being a widow in a conservative, superstitious community ”



Students with the young climate volunteers of Shyamnagar



With the chairman of Buri Goalini Union, Satkhira

“ Students felt concerned that both the politicians promoted crab farming as a vital source of employment in the vulnerable region of Satkhira ”

#### Engaging Students with Local Politicians

One of the significant activities of the learning visit was to engage the students with the local mayors and government officials. Students met with the Satkhira municipality mayor and the chairman of Burigoalini union. Local level politicians have in-depth knowledge about the problems and opportunities of their locality. Students saw how enthusiastic they are to make a master plan for their union and seek funding from the climate change trust fund. In the face of

these problems, they want to promote tourism, health and income opportunities to promote climate resilience and better livelihood opportunities. The recently developed Satkhira Medical and the construction of Padma bridge will make Satkhira town an economic focal point in the southern region, which will promote income generating activities for the youth and the overall economy.

#### Are we compromising the environment for development?

Development is necessary to improve the condition of the people who are facing the adverse impacts of climate change, but obviously, we need to consider the environment while developing our economy. Students felt concerned that both the politicians promoted crab farming as a vital source of employment in the vulnerable region of Satkhira. Nevertheless, it is generating income for the poor in the locality.

The next step for the students is to share their learnings in policy dialogue with the national level politicians and policy makers of Bangladesh and learn about national policy issues and development agenda to reduce climate vulnerability of Bangladesh. ■

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