



**ROHINGYA CRISIS
CRUNCH AND CONSEQUENCES**

QUICK BYTES

Champions League final annulled in Africa
 An referee Gehad Grisha has been 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 decision comes after the Moroccan Football Federation lodged a complaint at Grisha's decisions during a 1-1 match pitting Wydad against AS Sfax. Grisha ruled out a penalty for the hosts, Wydad Casablanca, but later denied them a penalty after replays.

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 said farmers from Kishoreganj, Narail, Brahmanbaria, Madaripur, Sirajganj and Dhaka 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.

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 win their top flight status before announcing his move permanent the next year. 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 2012.

Games recalled after compassion

Manchester City striker David Silva has been linked with a move to Arsenal, can advance his career with a high-profile move after Arsenal's Euro 2020 campaign with Croatia and Hungary. The winger missed a training session in Portugal following the death of his father but Wales manager Ryan Iwan 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.

Prices of other commodities

Market prices of various commodities including egg, poultry, and fish were stable. Chickens were selling at Tk400, which were Tk400 last week. Chickens, including egg, were selling at Tk400, which were Tk400 last week. Chickens, including egg, were selling at Tk400, which were Tk400 last week.

at Jamdani Fair focus

Lack of buyers for Jamdani saris due to minting of the expo. House owner has not since the fair. The fair is held in Jamdani.

Wanted to cut the ACB

Wanted to cut the ACB 50kg bag of rice has started. The price of rice has started to fall. The price of rice has started to fall.

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ACROSS

- 1 Deeply engrossed (4)
- 5 Agitate (4)
- 10 Ardour for a cause (4)
- 11 Flightless bird (3)
- 17 Showy deed (5)
- 17 Canny (3)
- 18 Cariche (5)
- 18 Followed orders (6)
- 18 Weapons (5)
- 21 Henhouse (5)
- 23 Headwear (3)
- 24 Country (5)
- 25 Consumed (3)
- 27 Garden tools (4)
- 28 Look after (4)
- 29 Requite (4)

DOWN

- 2 Sky-blue (5)
- 3 Female swan (3)
- 4 Tort-clothing (7)
- 6 Beverages (4)
- 7 Obstruct (6)
- 8 Regret (3)
- 9 Norwegian capital (5)
- 15 Version of an earlier printing (7)
- 17 Scold (5)
- 19 Letting contract (5)
- 20 Utters (4)
- 22 Frank (4)
- 23 Domestic animal (5)
- 25 Golfing aid (3)

our CODE-CRACKER grid
 the alphabet. For example, every time the figure 3 appears, the letter 'C' is used.

Control grid to start you off. Enter 'A's in the main grid, then use the control grid to check which letters go in the other squares with the 'A's, and the control grid. Check off as you identify them.

M N O P Q R S T U V W X Y Z

ADDITIONAL SOLUTIONS

ADDITIONAL SOLUTIONS

ACROSS

- 1 DEEPLY
- 5 AGITATE
- 10 CAUSE
- 11 EMU
- 17 DEED
- 17 CANNY
- 18 CARICATURE
- 18 OBEY
- 21 COOP
- 23 HAT
- 24 COUNTRY
- 25 EATEN
- 27 HOES
- 28 TAKE CARE
- 29 REQUIT

DOWN

- 2 SKY-BLUE
- 3 SWAN
- 4 TURTLE
- 6 BEVERAGE
- 7 OBSTRUCT
- 8 REGRET
- 9 OSLO
- 15 EDITION
- 17 SCOLD
- 19 CONTRACT
- 20 UTTERS
- 22 FRANK
- 23 SHEEP
- 25 GOLF

PEANUTS

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THE GROUND IS COVERED WITH SNOW. WE SHOULD THROW SOME BREAD OUT FOR THE BIRDS...

DILBERT

DILBERT

HAS COME TO MY ATTENTION THAT...

ARE ALL LIFE O...

Celebrating

40TH ANNIVERSARY

Dhaka Tribune



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Dear Readers

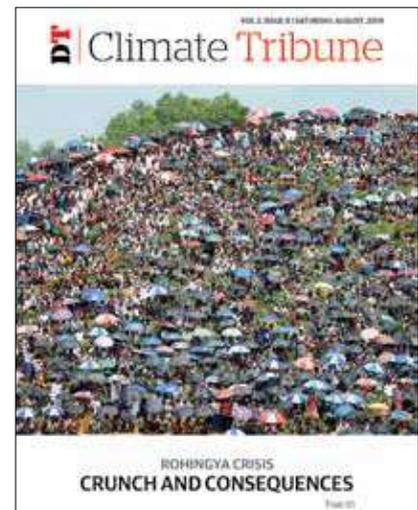
The Rohingya crisis has emerged as one of the worst humanitarian disasters in the world, but it has had other ramifications as well.

One of these is the impact on the ecology and environment because of the mass displacement.

Over a million Rohingya people have taken refuge in Bangladesh. The sudden influx required creating shelters for the refugees, which resulted in ecological imbalance, as well as caused socio-economic disturbances in the Teknaf and Cox's Bazar region.

This issue looks at subjects relating to the refugee crisis and its impact on the environment.

Other related topics are covered including environmentally sustainable fuel solution, COP 24 from Bangladesh's perspective, and



COVER: SYED ZAKIR HOSSAIN

mobility problem in relation to environmental changes.

Overall, the issue functions as a handy guide to the environmental and climate change aspects of the Rohingya crisis. ■

BIOGAS CAN BE A GAME CHANGER FOR RURAL BANGLADESH

A POTENTIAL AND BENEFICIAL RENEWABLE ENERGY SOURCE FOR SUSTAINING RURAL WOMEN'S LIVELIHOODS SUPPORT



Sherpard Zvigadza.

Access to affordable, reliable and sustainable energy is crucial in achieving many of the sustainable development goals -- from poverty eradication, via advancements in health, education, water supply and industrialization, to mitigating climate change. Energy Access however, varies widely across countries and the current rate of progress falls short of what will be required to meet the SDGs. Redoubled efforts will be needed, particularly for countries with large energy access deficits and high energy consumption.

Turning manure like sewer, urban waste and cow-dung into biogas is reaping rich rewards for many people not only in urban and rural communities of Zimbabwe but around the world. Biogas is used to supply power to remote villages for lighting, playing small radios and power television sets.

Far from Zimbabwe but still in Africa, in the Karen district, just outside Nairobi, Kenya, the Magdalene family own a \$300 biogas energy plant on a dairy farm, cutting the amount of time the staff on the farm spend gathering firewood.

The biogas energy plants are helping established beneficial projects and in the process reducing energy costs, as well as limiting their carbon footprint and improving their business value. Speak of the sprawling Mbare Musika (market) biogas digester, situated three kilometres just outside the capital, Harare, the Glen View 7-built biogas energy plant, further to the south-west and the 31 families benefitting from the SNV-supported project in Mungate village in Domboshawa, 25 kilometres to the north of the capital. This speaks volumes of the potential of this alternative and renewable energy source and underscores the fact that 'biogas works and has benefits'.

According to one of the demands of the Sustainable Development Goals (SDGs), renewable energy should be realized by urban, peri-urban and the rural poor. If these groups of people are left out of the energy renewal equation then many of the fundamental SDGs objectives will be missed.

Focus on Women but benefiting all

Biogas as a domestic fuel has been promoted by women's groups at Zimbabwe's agricultural shows and the international trade fairs and is now established in many urban and rural

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“ With robust awareness Bangladesh can learn more from these experiences from countries that have fully embraced the technology ”

communities across the country.

Many farmers have testified that their horticulture businesses are booming because the slurry from the plant is used as fertilizer for horticultural plants. The peri-urban Domboshava group is currently supplying horticultural produce to local shops and the group was named supplier of the year in 2017 at TM/Pick and Pay at the nearby Borrowdale shopping center.

“The project has relieved women and children of traditional chores that have tended to keep women disadvantaged and is also allowing children to attend school more often and participate in other social activities rather than looking for firewood”, Barbra Warikandwa, a member of the group, said in a recent interview. The biogas digesters’ sizes are between 5 cubic meters and 15 cubic meters. The 5 cubic meters produces enough energy for a family of eight, allowing for three meals a day, noted one of the village beneficiaries.

Horticulture business has boomed because the slurry from the digester also functions as liquid organic fertilizer for the production of Napier grass to feed cows and grow vegetables.

This source of power has relieved women and children of traditional chores that have tended to keep women disadvantaged, and is allowing children to attend school more often and participate in other social activities rather than looking for firewood.

Simple technology

Energy specialists note that the bio-gas digester technology is quite simple and can be constructed by both women and men.

Many countries in Africa have sufficient raw materials for this technology in the form of farm animal dung, agricultural and urban waste and industrial effluent. One of the women beneficiaries, Mrs Warikandwa said that her family use cow dung, vegetable waste and chicken waste to feed their 10 cubic meters bio digester.

The biogas option has added advantaged in that the spent slurry from the biogas-generating plant is excellent organic fertilizer for crops and fish farming, another favourite pastime for women and men in rural and urban areas.

Many biogas energy digesters have been used for cooking, lighting and heating. On farms, it is mainly used to heat water to clean the cows’ udders.

Like many rural and peri-urban communities who value their animals as an important source of food and income, families using biogas energy digesters hope to supply green power by expanding the use of biogas digesters in their areas.

With robust awareness Bangladesh can learn more from these experiences from countries that have fully embraced the technology by crossing the cultural barriers and with little investment.

Challenges

The green and renewable energy technologies should not become too expensive and unaffordable to such disadvantaged groups, like women so that the market-led approaches will be meaningfully realized.

Meanwhile, energy and power development experts have said lack of constant feeding of digesters lead to the development of ‘scum’, a thick dirty foam layer on the surface of the liquid manure and this requires a complete renovation of the plant for effective biogas production.

In order to counter that, it is better to provide minimal feed to the plant than completely desist from, said, a Zimbabwean government energy and power development official, in a recent field interview.

She equated biogas digesters to the human body which requires everyday feeding for the survival of the body.

On the issue of packaging gas into containers for sale, she noted that “this was expensive” and the best solution was to connect neighbours into groups at a village or urban level so that they can pool their resources together, including the gas produced and the income generated from sales.

It has been noted that, community involvement, local partnerships in smart biogas design with continued training, maintenance, and renewable energy policy alignment are essential in meeting urban and rural communities’ energy needs. ■

Sherpard Zvigadza is a visiting researcher at ICCCAD and as well as a sustainable energy access advocate.

REFUGEE CRISIS



PIXABAY

2 YEARS OF ROHINGYA CRISIS

INVESTIGATING ENVIRONMENTAL IMPACT IN COX'S BAZAR

Farah Kabir, Tanjir Hossain, and Abdul Alim

It has been almost two years since the arrival of the Rohingya people in Bangladesh. In late August 2017, more than 745,000 forcibly displaced Rohingya people from Myanmar took refuge in Cox's Bazar, Bangladesh. The settlement process in the first few months were unplanned near the roadside forest areas of Ukhiya and Teknaf. The settlement and resettlement process cost 20,000 hectares (around 49,500 acres) of forests alone.

Over the past two years, the population grew rapidly, estimating a current population of around 912,000. The crisis has turned from an emergency response to a long-term protracted crisis in nature. Adverse and irreversible impacts on land, water, air and overall ecosystem of the country due to the crisis impacted the life and livelihood of the people living in the area and beyond.

ENVIRONMENTAL IMPACT OF ROHINGYA INFLUX

A recent report by the Ministry of Environment and Forests (MoEF) supported by UNDP and UN Women identified eleven environmental impacts that have been or could potentially

be exacerbated by the Rohingya influx. Six of these were physical environmental impacts.

Ground water, surface water and aquatic level: In a 2018 study, ICDDR,B and UNICEF reported that some 192 people has access to one water point. This results in the contamination of major water sources and requires immediate measures to decontaminate. Furthermore, due to excessive extraction, water table has gone down as alternatives provided so far has failed to meet the ongoing needs of the community.

Indoor air quality: Due to excessive heat and cooking indoors, the indoor air quality was found to be hazardous in number of occasions. Furthermore, winter, the dust and smog causes respiratory problems for both the Rohingya community and the aid workers traveling everyday to the camps.

Solid waste: The UNICEF and ICDDR,B study also found that an average of 24 people are using one toilet. With 290,000 population density per square kilometer, solid waste management remains one of the key challenges and impacting the environment especially on water and air quality.

Soils and terrain: Due to mass deforestation and constant construction for rehabilitation, soil and terrain are degrading regularly.

THE REMAINING FIVE ARE IMPACTS ON ECOSYSTEMS

Natural forests: The refugee camps are currently occupying 1,625 acres of forestland in Ukhiya and 875 acres of forestland in Teknaf. However, the forest section that has been damaged due to the influx needs decades to restore.

Protected areas and critical habitats: The forest protected areas are critically damaged due to deforestation as well as human interventions that also displaced critical habitats in the area.

Vegetation: Vegetation that protects the soil and terrain as well as support micro ecosystem are damaged. This also leads to potential landslides.

Wildlife: Wild elephants are being hindered in their movement because of the Rohingya camps in Cox's Bazaar, which have been built on their natural habitat and roaming grounds. The elephants have thus been attacking the camps, killing several refugees. According to a survey by the International Union for Conservation of Nature (IUCN), since August 2017, at least 12 people have been killed by wild elephants.

Marine and freshwater ecosystems: This links with the solid/human waste. Every day about a million people are defecating and throwing wastes that is contaminating both marine and freshwater ecosystem.

The report also ranks the risks as high and low. Groundwater depletion; groundwater contamination; poor indoor air quality; poor management of sewer sludge; removal of soils and terrain; and changes in terrain and impacts on ecosystems overall at high risk category.

ENVIRONMENTAL PROTECTION INTERVENTIONS

The agencies working in Rohingya response realized that it is critical to protect the micro environment and its ecosystem as precondition to disaster management in the camp areas as well as protect biodiversity and livelihoods of both host communities and Rohingya communities. The Government of Bangladesh therefore emphasized on restoration of forests by mass tree plantation. The UN agencies and I/NGOs have been working on a number of different aspects such as disaster management, construction of Water, Sanitation and Hygiene (WASH) block, waste management including sludge management plants. Some interventions focus on both environmental protection and security issues particularly of women and young girls - such as solar street lamps and installation of Bondhu Chula (environment friendly cooking stoves) and Compact Rice Husk as an alternative cooking fuel.

“ ActionAid’s campsite management experience suggests that solid waste and garbage management remains the key challenge ”

In recent days, homestead gardening in the camps are becoming popular in order to protect the environment. Some of the innovation includes community based and young people led awareness sessions through interactive theater and camp cleaning in camp site management activities. Number of organisations are also doing slope management as well as plantation of vetiver grass for slope protection continued both for environmental protection and disaster risk reduction.

CHALLENGES FOR IMPROVING ENVIRONMENT

While the interventions have resulted in short-term impact such as reduction of risk of disasters, protection from landslides, reduction in exploitation of forest resources, the growing population and their long-term demand remains the key concern for environmental protection. Unless there is a permanent solution to the crisis (considering repatriation will take a long time) to some of the basic needs, environmental degradation will continue. ActionAid’s campsite management experience suggests that solid waste and garbage management remains the key challenge. Lack of awareness of health and safety within the Rohingya community remains a challenge in establishing a community led environmental protection action.

NEXT STEP

Considering the present situation, existing challenges and opportunities to improve the situation, it is critical to have a long-term strategy and action plan for the entire Cox’s Bazar focusing environment protection and forest restoration. Furthermore, some key actions must be taken in the short term to long term such as:

Immediate Actions: Stopping deforestation completely should be the first step. Introduce alternative fuel for cooking and energy. Also, it is critical to find alternate water sources. Couple of water desalination plants are installed in the camp area; however those are very costly as well as inadequate considering the need of the community. Agencies should consider solar based solutions of using surface water.

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REFUGEE CRISIS

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Short term actions: Rainwater harvesting as well as community-based waste management (including sludge management) is one of the key actions that need to be led by the government. This will require land use planning which also links with afforestation in the area. It is observed that plastic remains one of the key components of the waste that needs to be reduced as well as recycled. Importantly, it is critical to set up an environmental monitoring mechanism across the camps and overall Cox's Bazar.

Mid-term actions: In mid-term, government and other actors must work towards reducing health hazards through interventions that also contribute in reducing stress on the environment. Such actions can include alternative fuel such as solar based cooking stove for communities as well as improving soil condition through mass plantation at community and household level. One crosscutting mitigation measure to address the physical impacts of the influx is to provide alternative fuel and cooking stoves and/or a dedicated space for community cooking. This would improve air quality in the shelters, eliminate the need for fuelwood collection from forests and protected areas, and remove the associated gender-based health and safety risks.

Bamboo is one of the most used materials in the camps. It is critical to look at sources of bamboo in longer term. Bamboo cultivation can be promoted as one of the livelihood options in camp areas and other parts of Bangladesh.

Current experience in managing influxes shows that at the stage when asylum seekers become repatriated or

integrated, funds are scarce for the closure and reclamation of the abandoned camps and associated facilities for the reforestation of degraded lands and the conservation of wildlife habitat. Sufficient resources need to be secured to ensure that reinstatement of the land is adequately supported after the Rohingya repatriation.

Long term actions: In the long term, the solutions lie within both programmatic and policy interventions. While the Government of Bangladesh and humanitarian actors are working towards the above and finding a solution, it is important to look into policy level solutions from local to global level to address the problem including the environmental issues. It is important to consider the impact of climate change in the coming days. A recent report by the World Bank suggests that from 3 climate impacted hot-spots - Africa, Latin America and Asia, around 130-140 million people will be migrating in next 30 to 40 years. At least 10% of people will be from South Asia. The coastal region will suffer migration the most.

Lastly, though the influx is not due to climate change however, the degradation of the environment caused by the crisis will by and large contribute to climate change in a number of ways. Furthermore, this can work as a case for the climate migration on how to address some of the migration that will take place in the near future. ■

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Abdul Alim is the Head of Humanitarian Response of AA Bangladesh.

Tanjir Hossain is the Lead - Resilience and Climate Justice of AA Bangladesh.

COP

COP 24: WAS IT STRONG ENOUGH FOR BANGLADESH?

COP 25 NEEDS TO DO MORE FOR BANGLADESH

Tahmina Hadi

Bangladesh is considered as one of the most vulnerable countries to natural disasters and climate change. The country having low-lying characteristics, combined with increasing population and poor socio-economic backgrounds of the people, renders it highly vulnerable to natural hazards such as floods, cyclone and other extreme weather events.

Over the years, the magnitude and frequency of these natural disasters have intensified as a result of climate change

hence contribute to huge economic losses. Since 1980, the country witnessed over 200 natural disasters, contributing to a total death toll of around 200,000 people and economic loss worth \$17 billion. Given the poor economic development and financial support of the developed country, the country experiences difficulty in minimizing loss and damages. For example, the natural hazard events in Bangladesh resulted in economic losses of more than \$10 billion from 2000 to 2013, but the total funding available for relief, rehabilitation and reconstruction for the said period was \$2 billion only.

Every year, the Conference of Parties (COP), which is a



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decision making body, takes place to review and monitor the implementation of the United Nations Framework Convention on Climate Change (UNFCCC). At COP 21, held in 2015, Paris, the developed countries pledged to provide \$100 billion of new and additional finance each year to developing countries by 2020. In the latest report by the Standing Committee of Finance, which was submitted to the negotiators at COP 24, estimated that \$55 billion climate fund was raised by developed countries in 2016. However, the report stated that only around a quarter of this amount was channeled towards adaptation efforts.

This year, the 24th session of the Conference of Parties (COP 24) was held on December 15, 2018 in Katowice, Poland. Bangladesh, being a member country of the convention, has expressed concerns about the climate-induced loss and damage. The said topic has always been a debatable topic at the international climate change treaties. The reason could be attributed to the fact that there is no clear financial mechanism of addressing loss and damage. Also, the developed countries fear that the losses and damages incurred from the adverse impacts of climate change will be entirely borne by them. Climate-induced loss and damage are the manifestations of extreme climatic events as a result of persistent emissions of greenhouse gas contributed by the developed countries over the years. Hence, the developed countries fear that they will have to bear expenses of both current, past and future climate-induced loss and damages.

The provisions on loss and damage in the agreement of COP 24 have not been given due consideration and are not in favour of the vulnerable countries such as Bangladesh. The provision states that “Each interested party may provide, as appropriate, information related to enhancing understanding,

action and support, on a cooperative and facilitative basis, to avert, minimize and address loss and damage associated with climate change impacts”. The provision clearly indicate leniency in providing any kinds of supports to address loss and damage. The rules clearly stated “Each interested party may provide...”which indicates that the member countries or the developed countries have given some privilege to decide on the amount of financial and technological resources. In other words, the developed countries may or may not provide the amount of financial supports required by the developing countries.

At COP 25, which will be held in December 2019 in Santiago, Chile, the Warsaw International Mechanism for Loss and Damage (WIM), which has been established to address climate-induced loss and damage, will be reviewed hence discussions will largely be centered on loss and damage. Now, it is imperative for Bangladesh to strategically explore possibilities and avenues to address loss and damage. Also create an enabling environment to attract climate funds and enhance budgetary allocations to adaptation efforts. Concerns over inadequate climate funds to address climate change adaptation and loss and damage are required to be re-emphasized. Also showcase our mitigation efforts such as adoption of battery-run three wheelers, solar energy, etc across country. Such efforts would facilitate to uphold our image at the international climate change arena.

COP 24 was merely a war of words. It is imperative for Bangladesh to do some preparatory work for the effective implementation of the Paris Agreement and put forward all its claims in an articulated and diplomatic manner at COP 25. ■

Tahmina Hadi is a Deputy Manager at Knowledge Management.

ENVIRONMENT AND MIGRATION

ENVIRONMENTAL CHANGE AND THE PROBLEM OF MOBILITY: UNDERSTANDING THE COMPLEXITIES IN BANGLADESH

MOBILITY MAKES A BIG DIFFERENCE FOR PEOPLE AT THE FRONTIER OF
CLIMATE CHANGE



PIXABAY

Basundhara Tripathy Furlong and Amelie Többen

Climate change is a topic of major concern and debates on international, national and local level. Bangladesh is a country highly exposed to a variety of environmental stresses, such as floods, tropical storms, changing traditional rainfall patterns and droughts (Huq and Ayers, 2007; Rahman and Alam, 2003). The coastal areas of Bangladesh are affected by rising sea levels and riverbank erosion, whereas the Northern and central regions are prone to flooding and riverbank erosion. It is anticipated that climate change will intensify these developments and increase the frequency and magnitude of extreme weather events (IPCC, 2001). Rural households in Bangladesh

build their livelihoods mainly on natural resources and agricultural production and are therefore highly vulnerable to these environmental changes. Many households have lost their livelihoods in recent years due to changing climate (Government of Bangladesh, 2009).

Mobility is a complex and multifaceted phenomenon and comprises a conscious decision by individuals or households to move. Several interacting drivers, such as economic, social, cultural and environmental factors play a role in migration decisions. Migration takes different forms - a distinction can be made between permanent, temporary or cyclical migration, between voluntary or forced migration, and between internal and cross-border migration (Mortreux et al, 2018). With some areas becoming less habitable due to

changing climate, it is anticipated that a changing climate will lead to an increase in human mobility. Over the last decade, there has been a renewed interest in exploring the link between environmental changes and migration decisions (McLeman and Gemenne, 2018).

The relationship between climate change and migration is complex and an ongoing discussion revolves around the nature of the relationship between the two. Few migrants will move because of one single reason, which feeds into the discussion of whether it is useful to consider environmental migration as a separate category from other forms of mobility. Furthermore, studies of environmental hazards present mixed effects on migration outcomes -- some show increasing, others decreasing effects on mobility (Mortreux et al, 2018). Research shows that instead of a single environmental hazards or slow-onset disaster, it is rather their immediate and mid-term effects on people's livelihoods due to unemployment, crop loss or increasing prices, that ultimately influence mobility decisions (Black, Kniveton and Schmidt-Verkerk, 2013; Martin et al, 2013). Climatic events, such as tropical cyclones, can act as triggers leading to forced migration (Webersik, 2012). The mobility process is facilitated by resources that are available to the household, connections, social networks and perceived alternative livelihood strategies. Social networks and connecting social ties enable mobility as information about destinations as well as the benefits and cost attached to mobility are transmitted through these channels (Massey et al, 1993; Greiner, 2011).

While mobility seems to be increasing as a result of environmental change and multiple interrelated factors, the act of mobility itself is not available to all living in climate vulnerable areas. Immobility is prominent in a context where a large population remains in their place of origin, and experiences environmental effects frequently, without any desire and/or capability to move out of these vulnerable areas (Black et al, 2013). The discussion then is about voluntary and involuntary immobility decisions, that enable or obstruct the agency of the stayers. Although studies on immobility have become increasingly popular in migration literature, the outlook in many cases remains limited, where stayers are labelled as "left behind" (Jónsson, 2011).

In the following, we present two case studies from Bangladesh that show how closely climate change, mobility and immobility are interlinked.

Mobility: Seasonal migrant working in the Bhatta

Driving north from Dhaka towards Mymensing, we arrive at a stop named Signboard. Close to it is Rose Brick Field, the brick kiln to which a large group of people from Padmapukur village, 400 kms from their village in Koyra district, have migrated for work. These seasonal migrants come from a climate-affected region in the Southwest, which was devastated by Aila in 2009 and is prone to frequent saline

“The act of mobility itself is not available to all living in climate vulnerable areas”

water ingressions, cyclones, river erosion and breaching of the embankment.

Siddhartha Mondol, a man in his late forties (he is unsure of his age), has been working for six months every year in this Bhatta or brick kiln for the last three years. Prior to that, he was working in a brick kiln close to Barishal and before that in Chittagong. Being asked, why he migrates seasonally each year and when he first became mobile, Siddhartha answers “River erosions and cyclones are common in my home area. Aila [severe cyclone in 2009] destroyed everything we had in the village. After Aila, our land isn't as fruitful, which makes us look for work outside the village. We are still recovering from the damage that happened a decade ago. There isn't any work in the village and salinity makes it difficult to grow anything other than practicing shrimp farming which requires a lot of capital or land. I first migrated 3 years after Aila in 2012. I was forced to migrate because if I did not, my family would not survive. The situation in the village was not good. No job opportunities in the village and the land does not give us enough income to sustain ourselves.”

He is here with 23 other people from the same village in Koyra district who are accompanied by the sardar or the brick kiln manager. The sardar is from the same village, Padmapukur, as all the migrants. Using personal, family, and peer networks, the migrants have connections with the sardar, who has facilitated this movement away from the village. This reflects how migration decisions are always embedded in social networks (Boas, 2019). The social ties and closeness of people at the place of origin make this transition possible. Spatial mobility is based on the maintenance of social ties and networks directing the choice of destination for the migrants.

ENVIRONMENT AND MIGRATION

Immobility: Women's lack of choice, ability and/or desire to move

It is common in this region to see men migrate, and women stay back. Although there is a rise in the number of women migrating, it is still a very small number in Southwest Bangladesh (Bernzen et al, 2019). Although the conditions in these areas have deteriorated due the increase of natural calamities and disasters, most women stay back in the village taking care of children, elderly members and the household. This climate vulnerable population does not always have a choice or ability to move, while some do not have the desire to move (Black et al, 2013), many are “trapped” in their present condition.

Access to mobility is denied in many cases as women do not have decision-making power and cannot move away from climate risk areas. Rumana, while weaving a mat in the porch, narrates, “I cannot move out of this village. Whether there is storm, cyclone or any other disaster, I will always be here. My husband is out to work but I cannot go. Women's position is at home in our society. Even if I want to go, there is no way I can go and work outside the village on my own. My family [husband, in-laws] decides for me.” The immobility associated with gender can be explained by the lack of financial and social capital and the social and cultural context, exacerbated by the climate risk environment in which they live.

On the other hand, there are also women, who deliberately chose to stay back. They mentioned their attachment to the place and people that kept them from moving out of the village. “I do not wish to move out of this village, whatever may be the situation. Life is tough here, but this is my life, and this is how it has been. I cannot leave my village or my people. This is where I belong”, said one of the many women interviewed. Cultural, historical, social and place attachments make voluntary immobility a reality, providing agency to the women, who make this decision (Farbotko, 2018).

The differing experiences for men and women, and inequalities among them produce distinct experiences of power and powerlessness (World Bank, 2009). It can facilitate or limit the choice of mobility in climate-affected areas. Entrenched gender norms, economic dependency and attachment to place and people makes mobility a difficult

option for women and sometimes a determined choice.

Solution in reducing vulnerabilities

The nexus between environmental change, mobility and immobility remains complex where natural disasters act as triggers for human mobility. Increases in the number and intensity of disasters along with changes in the fertility and availability of land influenced the increasing out-migration from coastal villages in Southwest Bangladesh. Poor and marginalized households lack opportunities to cope with a changing environment, due to their limited mobility and lack of access to networks and resources.

The process of moving out of the climate vulnerable situation is often made possible by maintaining social ties and social networks. Seasonal migrants such as the brick kiln workers in Bangladesh depend on their social networks to financially secure themselves and their families during

migration times. Mobility and monetary gains, which come at the cost of living separated from the family and long working hours, have helped seasonal migrants to recover from the losses they have experiences during disasters.

While mobility is widely studied and remains the core focus in migration studies, aspects of immobility are equally important to understand the nexus between environment and migration in a climate fragile context. Immobility is involuntary in many cases.

As illustrated by the second case study, the cultural milieu, women's role in society and belonging to the land they have grown up in, makes it challenging, especially for women, to migrate.

Policy-makers will need to find solutions that reduce the vulnerabilities associated with immobility – both through climate adaptation plans as well as strategies that recognize the need to move, and move safely. While that aspect is to be further explored, it is also essential to understand the motifs of people, who choose not to move from a place with deteriorating environmental conditions. ■

“ Access to mobility is denied in many cases as women do not have decision-making power and cannot move away from climate risk areas ”

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GROWING UP ROHINGYA: YOUNG MINDS AND THE FUTURE

FOR HUNDREDS OF THOUSANDS OF YOUNG REFUGEES THE FUTURE
LOOMS DARK AND UNCERTAIN



BIGSTOCK

Sobiya Aziz Badat

The Rohingya Muslims are the world's largest stateless people. It is estimated that there are about 500,000 children under the age of 18 living in the camps, with about 300,000 aged 3 to 14. Studies on the health of these young Rohingya refugees suggest emergence of mental health decline. They have been subject to miserable living conditions marked by exposure to violence, local hostility, and various forms of discrimination.

The traumas of the migration and the constant struggle that the families experience, is putting the young minds into turbulence. Research on various refugee youth, in camps around the world, indicates that they suffer from, or are at risk of post-traumatic stress disorder (PTSD), with various investigations revealing rates of PTSD from 50-90% and major depression from 6-40%. When these children are further exposed to daily stressors, the anxiety increases.

For the Rohingya girls going to the toilet is an ordeal, with the fear of sexual abuse. On top of that they are uneducated, malnourished and unheard. The young boys on camp are vulnerable to trafficking and under-age hazardous labor. The unstructured, abundant spare-time and lack of counselling has made the Rohingya youth restless. They are highly prone to depression, drug abuse and organized violence. A UNICEF report published in 2018 warned that teenagers in the camps risked becoming a "lost generation".

Living in overcrowded camps, these bright minds could be healed with targeted educational interventions. However, Rohingya children lack the education system that they need to survive in the competitive future. The curriculum taught in "learning centers" is, in most cases, entirely different from the ones taught in the national schools. This discriminates them growing up in Bangladesh and undermines their learning capability. Since their legal status is unclear, the prospect of higher education, diplomas or documented jobs is a dream. The teaching time also lacks consistency and does not meet the needs of adolescents in particular. The need for persistent, therapeutic interventions is being overlooked. The teenagers are isolated with their inner thoughts and face barriers in the community environment around them. Many of the talented youth are therefore, frustrated and depressed.

Attention must now turn to young refugee's minds and future prospects, in particular, improved quality education, skill development, vocational training and positive engagement for children. A continuum of care with multi-level and cross-sectoral intervention is required to improve their mental health outcomes. After all, Rohingya children growing up will have a deep impact on not only their own families, but also on the host communities and the subsequent generations. ■

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ADDRESSING ENVIRONMENTAL DEGRADATION CAUSED BY ROHINGYA INFLUXES

BANGLADESH SHOULD DEMAND COMPENSATION FROM MYANMAR FOR ENVIRONMENTAL DEGRADATION CAUSED BY ROHINGYA INFLUX

Md Mahatab Uddin

August 25, 2019 will be the second anniversary of the Myanmar Army's attack that sent the Rohingya populations fleeing to shelter in Bangladesh. The attack on Rohingyas conducted by Myanmar Army can be denoted in various political and legal terms. The masterminds behind this attack may also be brought under international criminal justice system. The people who have fled from Arakan state and received shelter in Bangladesh may or may not be denoted as 'refugee' on the basis of the term defined under the 1951 International Refugee Convention. The crisis can or cannot be linked with national and international security. However, although least heard, from the view point of climate change and sustainable development, most essential aspect of the issue concerns the impact of the influx of Rohingya population over local environment and biodiversity of Cox's Bazar region of Bangladesh.

As a result of huge influxes of Rohingya population from Rakhine state of Myanmar, Bangladesh now hosts the world's biggest refugee camp in Kutupalong-Balukhali area of Cox's Bazar which hosts more than one million Rohingya 'refugees'. In fact, including refugees from past as well as the local community of Cox's Bazar, the total number of affected people since the Rohingya inflow that took place in August 2017 is close to 1.5 million. The impact of this large number of population on already degraded environment of Cox's Bazar region actually beggars description.

A study conducted by the United Nations Development Program (UNDP) and the UN Women published on Sept 18, 2018 reveals that Ukhaia and Teknaf of Cox's Bazar lost a total of 4,300 acres of hills and forests, which were cut down for the purpose of accommodating temporary shelters, facilities, and cooking fuel. Around half of the total natural forest land (793 ha out of 1502 ha) of the area has been invaded. Around 3,000 to 4,000 acres (1,200-1,600 ha) of hilly terrestrial in the Teknaf-Ukhaia-Himchari crisis area have been cleared of plants. These happened as a result of collecting 6,800 tonnes of wood each month as household fuels, and using on an average 60 culms of Bamboo to construct temporary shelter for a Rohingya family.



BIGSTOCK

The indiscriminate hill cutting increases the apprehension of landslides in the area during monsoon. Thousands of shallow tube-wells dug to meet the needs of drinking water of the 'refugees' pose threats to aquifers. Increased vehicular traffic and smokes generated from firewood burned by 'refugees' result in air-pollution and increases the risk of air pollution borne diseases. Since there is no recycling system, polyphone bags and plastic bottles in the area also cause environmental pollution and put the Bay-of Bengal under threat of increased plastic pollution. All these created a mammoth threat to the biodiversity of this ecologically critical area of Bangladesh. The UNDP Report (2018) expresses its deep concern that if no appropriate measures are taken immediately, the negative impacts over biodiversity of the areas will be irreversible.

Bangladesh government is obliged to address the above-described environmental degradation issues as per concerned national level environmental law and policies. But, these environmental degradation and threat to irreversible loss of biodiversity has been resultant from a trans-boundary issue behind which Bangladesh as a state did not play any role. Besides, Bangladesh with its limited resources and a large number of populations is also not capable enough to address and resolve the problem on its own. Although some steps of pro-

viding with alternative fuel solid waste management system and replantation etc have been introduced by the Bangladesh government and other development partner organizations, the initiatives for 'eco-restoration' in the region are still far less than the necessity. For these reasons, this write up argues that the issue of such an unexpected degradation of environment and biodiversity that might also play a role to accelerate the ratio of global climate changes and pose a threat to local and global sustainable development should be seen in the light of international and multilateral environmental laws.

Among various international and multilateral environmental agreements, the most important one which has direct relevance to conservation of biodiversity is 1994 Convention on Biological Diversity. First of all, as per objective clause of the Convention, it is Myanmar which is responsible for the environmental degradation of Cox's Bazar region because the degradation was an end result of their activities which led Rohingya population fleeing from Myanmar's territory to Bangladesh's territory. This is inferable from objective clause of the Convention that clearly stipulates states' responsibility 'to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction'. (Art 3, CBD)

However, being a Party to the Convention, Bangladesh is also responsible to address and prevent the damage happened to local environment and biodiversity, as the incidence took place within Bangladesh's territorial jurisdiction. (Art 4 of the CBD) It is important to note that to fulfill Bangladesh's obligation of addressing the issue, government of Bangladesh can seek international cooperation. This is clear from Art 5 of the CBD that requires each contracting Party to 'cooperate with other Contracting Parties, directly or, where appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity'. Based on a broader interpretation of the meaning of this article, Bangladesh can arguably seek global cooperation not only in restoration of local environment and biodiversity, but also in obliging Myanmar to compensate for the environmental degradation that took place in Bangladesh due to Rohingya influxes. Myanmar's obligation of compensating Bangladesh government is not only derived from objective clause of the CBD, it is also justifiable in the light of 'polluter pays' principle of international environmental law.

While the damages towards environment and biodiversity that took place in Cox's Bazar region will also accelerate the adversities posed by climate change in the region as well as threaten the promotion of local sustainable development, the issue can and should also be considered by global community in the light of global climate change agreements. In this regard, the 1994 United Nations Framework Convention on Climate Change (UNFCCC) and the 2015 Paris Agreement both

“ The UNDP Report (2018) expresses its deep concern that if no appropriate measures are taken immediately, the negative impacts over biodiversity of the areas will be irreversible ”

require all countries to cooperate with each other in attaining Convention's objectives that include climate change adaptation and mitigation related activities as well as promotion of sustainable development. In fact, protecting environmental and biodiversity related degradation in the ecologically critical zone of Bangladesh is not only essential for climate change adaptation and mitigation but also important for local sustainable development. Apart from obliging all countries or member states to cooperate with each other, both UNFCCC and Paris Agreement require industrially developed country Parties to provide financial and technical assistance to those developing and least developed country Parties who need such assistance most.

Hence, Bangladesh is arguably entitled to receive international cooperation for bringing ecological and environmental harmony back in the Cox's bazar region from both global biodiversity conservation regime (CBD) and global climate change regime (UNFCCC). However, no global cooperation can actually ensure 'eco restoration' process of the affected region, if Rohingya populations are not successfully repatriated to their own land. In this connection, it is possible to comment that pressures from above mentioned two global platforms might facilitate successful repatriation of Rohingya population. Whether repatriation process successfully takes place through diplomatic initiatives or not, technically Bangladesh has all liberty to claim compensation from Myanmar for the environmental degradation caused by Rohingya influxes as such make it a potentially successful case instance of international environmental law. ■

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INTEGRATION MATTERS

LEARN ABOUT THE WORK PRACTICAL ACTION IS DOING IN THE ROHINGYA CAMPS TO ESTABLISH AN INTEGRATED APPROACH FOR ADDRESSING ENVIRONMENTAL RISK



COURTESY

Farhana Shahnaz

It has been two years of the recent Rohingya crisis in Cox's Bazar and its associated impacts have only increased exponentially over the course of this time. Sprouting into multidimensional issues, environmental degradation has been at the heart of it all. Since the recent crisis emerged in mid-2017, over 700,000 displaced people from Myanmar (commonly known as Rohingya people) sought refuge in different areas of Ukhiya and Teknaf sub-districts of Cox's Bazar in Bangladesh (UNHCR, 2018). The presence of such a large human settlement has had a dramatic effect on the ecosystem of Ukhiya and Teknaf, putting a strain on the already stretched resources in the region.

The immediate environmental impacts were manifested in the form of deforestation, loss of vegetation, consequently increasing the risk of landslides and flooding, accumulation of enormous volume of all kinds of waste without adequate disposal and management facilities, and the risk of fire hazards. An analysis conducted by the International Centre for Climate Change and Development, ICCCAD, shows that a total of 1,684 hectares of vegetation coverage has been lost from February 2017 to November 2018. Changes in the terrain due to the removal of soils and terrain have been ranked as high risks among the physical environmental impacts. What were almost undisputed stretches of mud hills and vegetation have now been reduced to undulating terrain with soft soil, after

being indiscriminately cut back to create rudimentary terraces for temporary shelters. Trees have also been cut down to serve as cooking fuel and for timber usage. Nevertheless, the report also forecasts that most of the physical environmental impacts might be reversible, while those on soils and terrain would take extensive time to be restored to their former glory (MoEF; UNDP; UN Women, 2018).

Rapid Environmental Assessment Study conducted by the Ministry of Environment and Forest (MoEF) of Bangladesh, UNDP and UN Women detected that soil and terrain along with the conditions of groundwater, surface water, acoustic levels, indoor air quality and solid waste management have been severely impacted after the Rohingya influx. The crisis has also set Bangladesh behind in their stride towards combating climate change. The Teknaf peninsula is an ecologically critical area. The protected Teknaf Wildlife Sanctuary, one of the oldest reserved forests in Bangladesh, plays a pivotal role in combating climate change.

Water and sanitation situation in the camps have been particularly appalling. More than six thousand water points and fifty thousand latrines have been installed so far. However, water scarcity is still present and the available water does not always meet the safety standards, exposing the inhabitants to the risk of frequent outbreaks of water-borne diseases. More than 30% of latrines installed were located less than 10 metres from a water source. Poor solid waste management practices have added to the list of already pressing environ-

mental issues. Open waste disposal is also widely prevalent at the camps and the lack of proper waste management and the drainage system has further aggravated the situation. Physicians for Human Rights (2010) reported an alarming situation from their on-foot observation, with accounts of children playing and crawling next to raw sewage. Due to the absence of a proper waste management mechanism in place, the camp dwellers bury or burn their wastes, leading to residual toxic components being added to the soil and the emission of hazardous gas when wastes are burnt in an open environment. There are a number of organizations which are trying to address the situation such as UNHCR, Oxfam, BRAC, and UNDP but there is a lot that remains to be done and can only be achieved through integrated efforts.

Cox's Bazar is inherently a disaster-prone area and with the incumbent environmental crisis, the risk of disasters has increased by manifolds. Due to the high number of people living in such close proximity, there is a greater need for fast and effective assistance in the event of a disaster as well as assistance to reduce vulnerability and risk exposure through preventative approaches. Poor and marginalized groups within the communities are particularly vulnerable to hazards and less able to cope.

The Rohingya crisis presents diverse challenges, however, isolated approaches may not be the solution here. Even a comprehensive approach within a sector, such as integrated waste management, does not offer an integrated solution if not combined with efforts addressing the issues of deforestation, knowledge and practices on addressing different types of disasters with access to reliable information and forecasts. Due to the unique nature of the issues at hand, the solutions must be integrated, in that, the coverage of services pertaining to every sector are widespread. Integration needs to be ensured to the level that every sectoral need for Rohingyas in each camp is equally met.

Practical Action has been implementing a multitude of interventions with a multi-sectoral approach, where the overarching objectives are to protect environmental health and minimize the risk of damage due to different types of hazards such as landslides, floods, and fire. Currently, Practical Action is working in six camps in the Ukhiya (camps 7, 8E, 8W, 9, 13 and 15) and the Leda Makeshift Camp in Teknaf with being the WASH focal for camp 8W. Because of their unique integrated approach in faecal sludge management (FSM), organic and plastic waste, they have garnered a widely accepted presence within the WASH sector and are in regular coordination with ISCG, UN agencies, government and other NGOs.

The work Practical Action has been doing in the camps has been unique in that they all have a context-specific, integrated approach. To address the need for a proper solid waste management mechanism, they have devised context-specific FSM units, adopting "up-flow filtration technique" to ensure safe collection, containment and disposal of faecal waste,

with added components such as co-composting for non-food agriculture at the camps. This removable, rainproof technology has proven to be a much-needed solution for safely managing faecal sludge in these densely populated camps. Through this technology, raw faecal sludge is converted into compost and the liquid portion of the sludge is discharged into soak pits having sand envelop after a certain level of treatment. Practical Action has also pioneered barrel composting where the compost is produced from organic solid waste and used for vertical agriculture in boxes next to the shelter houses.

As a part of Integrated Solid Waste Management, Practical Action has installed a plastic waste recycling plant in the Leda makeshift settlement to reuse plastic waste, focusing on the 3R (reduce-reuse-recycle) strategy, to combat the plastic pollution in the camps. The most important rationale for the plastic waste management site is to tackle the health crisis and nuisance created by plastic wastes and for the protection of the health and environment of the population of the Leda makeshift settlement. The plant turns plastic into alphabet blocks that serve as learning materials for children residing in the camps. This has just been one of Practical Action's strides towards a plastic risk-free environment with a vision of a better future.

Due to the mass deforestation, the thousands of Rohingyas sheltered in these hilly areas of Cox's Bazar are living in fear of mudslides during the monsoon season. The government, site managing NGOs, local administration and other agencies had been looking to protect the Rohingyas during the monsoon season, especially the ones living on the hill slopes in Ukhiya and Teknaf upazilas. As part of it, Practical Action has found an innovative way to prevent slope erosion by using vetiver grass, locally known as "Binna Grass" with added protection through layering the soil with geojute.

Based on the camp context and the underlying needs, Practical Action developed a model of youth volunteers from the communities to raise awareness on basic disaster knowledge and disaster drills during an emergency. The training was based on a comprehensive, context-specific module covering the potential hazards- landslides, fire hazard, cyclone and flood. They have installed Digital Information Board in the camps to disseminate critical information in times of emergency and other essential information during non-emergency times. They have been disseminating advisories such as disaster-related early warnings of all sorts, education, entertainment and awareness-raising contents for the camp dwellers as well as the weekly weather updates.

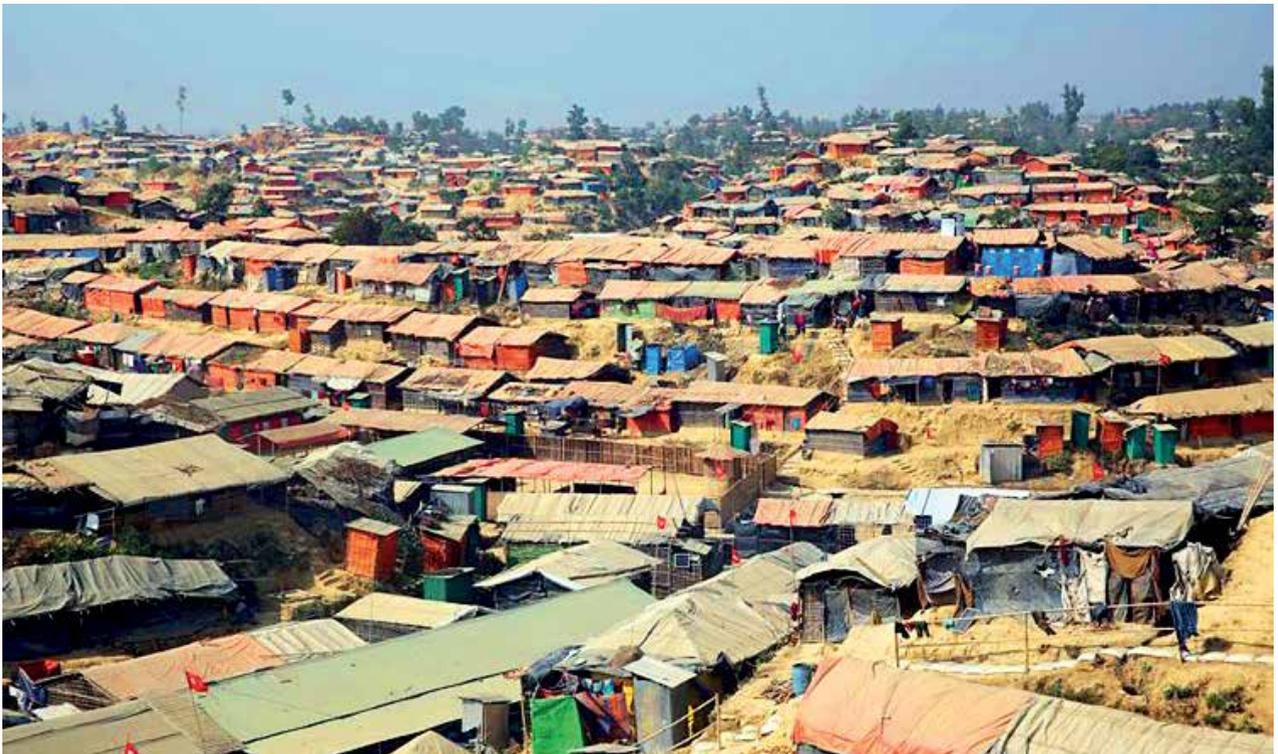
Practical Action's work has focused on bringing a comprehensive solution tapping into the multidimensional problems of the camp dwellers. They have strived to broaden their horizon, avoiding tunnel vision, but rather innovating to carve their niche even in uncharted territories. ■

Farhana Shahnaz is an Assistant Officer, Fundraising at Practical Action Bangladesh.

CRUNCH AND CONSEQUENCES

ROHINGYA INFLUX IN A CLIMATE VULNERABLE COUNTRY

THE ROHINGYA REFUGEE CRISIS IS PUTTING A GREAT AMOUNT OF PRESSURE ON A COUNTRY THAT IS ALREADY IN PERIL



SYED ZAKIR HOSSAIN

Ambalika Singh

The geographic and socioeconomic characteristics of Bangladesh makes the country particularly vulnerable to the impacts of climate change. Around 77% of people in Bangladesh depend on natural resources and the degradation of the natural resources and biodiversity has a direct impact on the livelihood of the people. Further, sea level rise and extreme weather conditions as a result of climate change impacts will be more perilous. Threatening food security, agriculture and affecting the livelihood of the communities, as well as economic impacts would be stronger; Dhaka the capital, attracting people around the country in search of better work opportunities, would be one of the most climate vulnerable cities in the world.

A combination of factors--poverty, oppression, safety and better opportunities--lead to displacement of people and crossing of the national border. Migration of people to a country, which is already climate vulnerable, expands a number of problems, including the environmental concerns that eventually affect the livelihood of people. Rohingya refugees are stateless and one of the most widely persecuted minorities in the world. The violence in Myanmar led one million Rohingya refugees to Bangladesh in 2017. Though, the displacement of people from Myanmar has started since the 1990's. From time to time environmental consequences make the safety and protection of people as well as sustainable use of the resources a massive task. The large influx of Rohingya refugees in the Cox's Bazar District has been putting enormous stress on the local resources and the livelihood, challenging the development, infrastructure, and health care.

Crunch and consequences

Rohingya influx in the world's largest and growing refugee camp in the climate vulnerable country has accelerated the pressure on social protection and environmental concerns. Rohingya influx into the Cox's Bazar area has occupied most of the forestland, clearing mostly the hill areas, which is around 6000 acres of forestland in Ukhiya and Teknaf. The camps are accommodating the majority of the population in this particular area. The rapid destruction of forestland for the settlement of people disturbs the overall environment specially the ecological balance. The forest area of Cox's bazar is also home to protected forest and wildlife habitat. Cutting down of trees for fuel wood and making shelters has been critical. The fuel wood collection was a part of the local community's livelihood survival, but ever since the Rohingya influx, deforestation became rampant. Also, the locals have been affected by the loss of the land and cutting of forest has transformed the hill land. The loss of forest increases the threat of flood, soil erosion, fewer crops, and more importantly, loss of habitat for the variety of species.

Aid agencies are struggling to provide assistance to around 1 million Rohingya population and also the needs of host communities to improve poor conditions, provide safety of women and children, and fulfil the basic needs of all. The major issues are regarding social protection, economic assistance for sustenance and health care services. The weather changing conditions, floods, landslides, contamination of water and damages to the shelter do not put the communities in a safe spot. The World Bank announced grant figure of half a million to provide support to Bangladesh for addressing the needs of Rohingya refugees with health, sanitation, disaster risk management, sustainable use of forest, coastal area safety and rural development. Health care of the people due to the conditions of floods, landslides and the following outbreak of waterborne diseases are at a higher risk. Subsequently, the need to educate the vulnerable refugee youth and children is another important factor.

Finding balance amidst the challenges

In the climate vulnerable countries with the influx of people it becomes quite challenging to provide social, economic protection and fulfil basic needs at times. In the disaster prone areas where multiple risks are attached, it requires several agencies, both the public and private sector to work together in making the communities climate resilient. Also, monitor changes closely for effective strategies and execution for minimum effect on the livelihood. Making people climate resilient through policy interventions and mainstreaming the major risks is helpful in preparing for the conditions that may arise from time to time. Bangladesh is the first country to have developed a climate resilience program with national level planning and guidelines. The need is to strengthen the institutions with adequate funding arrangements, appropri-

“ The rapid destruction of forestland for the settlement of people disturbs the overall environment specially the ecological balance ”

ate execution and fulfilling the human resource requirements for effectiveness.

Policy changes and adjustment in the national level planning, that support the well-being opportunities to support both communities in tourism, salt production and fisheries and promote the sustainable development goals are necessary. Public and private sector's inclusive strategies for development of both communities; from financing for livelihood improvement, education, investment in the various sectors, planning and enhancing the mobility of labour are crucial. Also, conservation management plans for the protection of the environment and continuous improvement of institutional mechanism should be implemented. Improving the economic benefit, as the people are consumers, climate financing for development, provide labour and also skill training etc. The new projects with the climate finance to aim at increasing resilience and also, explore financing opportunities for Green climate fund.

International organizations including UNHCR, IMO and UNDP are helping countries to focus on the issue of migration in the national development to enhance community based integration, environmental monitoring, and building capacity at local level. The focus should be equal on the host communities with the refugees for overall mobilizing effort--handling the tension between the host community and the refugees for the resources, land and opportunities. The need is for multiple stakeholders to collaborate and coordinate for improvement of the social security, in a way the needs of both; the host communities and the Rohingya refugees are considered as well as providing alternative options to put less pressure on the natural resources, which considers both the environment and the people. ■

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DISPOSAL AND RECYCLING

SOLID WASTE MANAGEMENT IN ROHINGYA CAMPS AND HOST COMMUNITIES IN COX'S BAZAR

A LARGE NUMBER OF PEOPLE LIVING IN SQUALID CONDITIONS AND IN NEED OF PROPER SOLID WASTE MANAGEMENT

The highly dense population due to the Rohingya influx in Cox's Bazar district generates about 10,000 tons of waste per month, resulting in adverse impacts on health and environment.

Considering the pressure caused by the over-population and the massive volume of waste produced daily in the cramped area, solid waste management (SWM) is now an urgent need in Cox's Bazar. SWM is a necessity for environmental protection, prevention of diseases, promotion of hygiene and proper sanitation standards. This will also generate income for the host communities through engaging them in waste collection, reduction and recycling.

In partnership with development partners particularly with UNDP, BRAC is working in the refugee camps and host communities to remove solid waste from the settlements, carrying it to the waste disposal sites followed by setting up a system to maintain the cleanliness of the coverage areas to prevent critical public health problems and environmental issues.

For effective solid waste management, the activities are designed based on the detailed assessment and community consultation conducted in 32 refugee camps, 5 Unions and 1 Poroushava. Exact locations and waste to be cleaned are being identified and a cluster approach has been adopted for establishing a network for waste collection, transportation and disposal in the landfill sites.

Cash for work (CfW) approach is being adopted involving both Rohingyas and host community households for quick impact waste removal, waste pits construction, establishing and maintaining the solid waste management system.

This initiative ensures the health and safety issues by providing personal protective equipment (PPE) and proper training to the workers. This initiative is also contributing in promoting gender equality since we are engaging both men and women as participants in the temporary employment.

Following the clearing campaign for quick removal of waste, BRAC is also working to establish a solid waste management system in the camps and host communities. This includes the distribution of waste bins in the household levels and collecting waste regularly, maintaining the rehabilitated areas, transporting the waste regularly and improving the



PIXABAY

waste disposal sites.

There are also some identified challenges in managing this huge amount of waste generated by the large number of population. The main challenges in waste management include jeopardized situation in the camps, congested settlements, lack of adequate space for communal pit, inadequate landfill sites, inadequate and poor roads and networks, heavy rainfall in the monsoon season, inadequate storage and transportation facilities, informal dumping sites, collection frequency, poor infrastructure and technology, and overall lack of public awareness on good sanitary practices, etc.

To address the challenges and facilitate the behavioral changes, BRAC is raising awareness in the camps and host communities through promoting reduce, reuse and recycle principals and proper use of recyclable materials.

BRAC has planned to facilitate organic fertilizer and bio-gas production from solid waste and establishing value chain with local scrap dealers for collecting recyclable materials from the host communities and camps. BRAC, along with other government and CSO organization is showing its commitment in ensuring a better living condition for the Rohingyas and host communities. ■

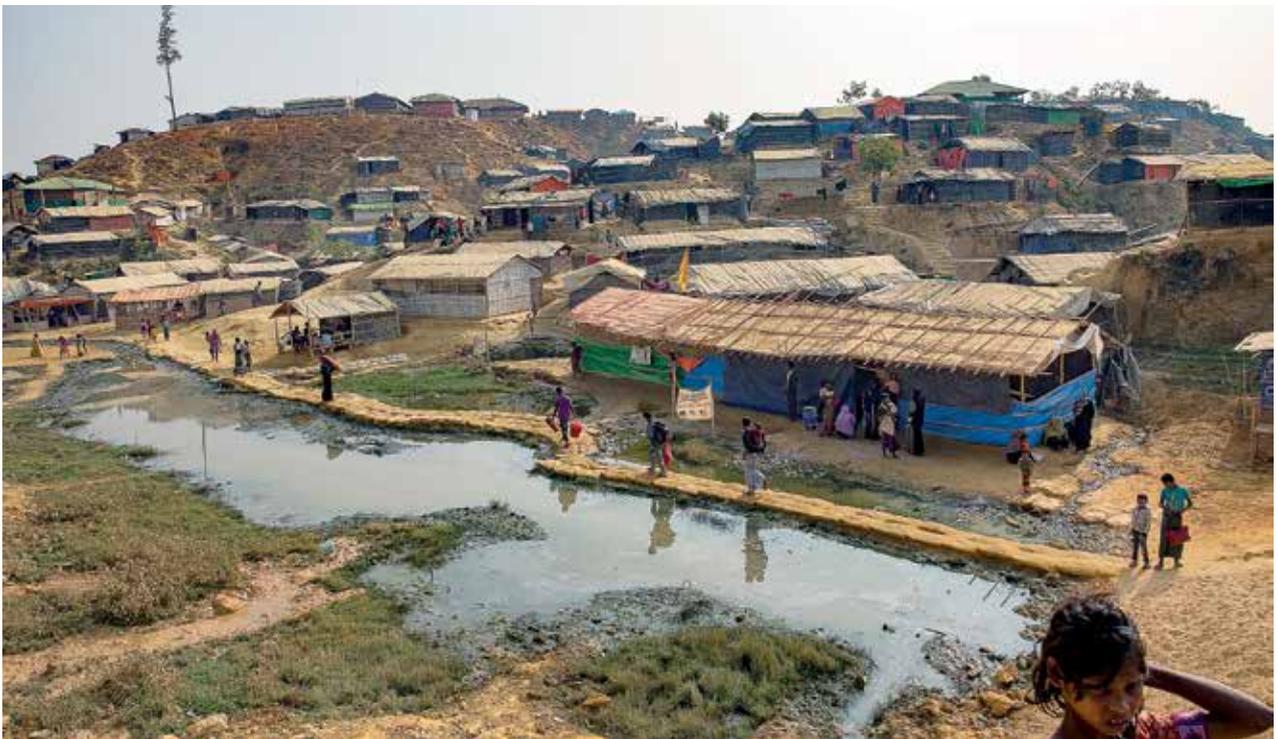
Md. Ashaduzzaman Asad is the Senior Manager of the Climate Change Programme, BRAC.

Abu Sadat Moniruzzaman Khan is the Programme Head of the Climate Change Programme, BRAC.

Md Bodruddoza Zion is the Deputy Manager of the Climate Change Programme, BRAC.

'THE REAL RISKS ARE CYCLONIC STORMS AS THERE ARE NO CYCLONE SHELTERS FOR THE REFUGEE TO BE EVACUATED TO'

DILRUBA HAIDER SPEAKS ABOUT THE DISASTER PREPAREDNESS OF ROHINGYA WOMEN



Fishing boats docked at the island Union of Gabura

FAISAL BIN ISLAM

Rukhsar Sultana

Dilruba Haider is a Program Specialist, heading the Disaster Risk Reduction, Climate Change and Humanitarian Action programs of UN Women Bangladesh. On this issue of Climate Tribune, Dilruba Haider will give her reflections on the disaster preparedness of Rohingya women while providing a glimpse of UN Women's interventions in the camps in Cox's Bazar since late 2017.

Based on your experience what are the main concerns of Rohingya Women in Cox's Bazar?

Rohingya women in Cox's Bazar face three main issues: a)

protection, b) livelihood, and c) empowerment and leadership.

Most of the Rohingya women and girls in Cox's Bazar have faced extreme violence in Myanmar, either experiencing it directly or witnessing it done to relatives, friends and others. These women fled the violence, travelling hundreds of miles, during which they were exposed to further abuse and exploitation on the way. Some were separated from their husbands, sons, and brothers, often leaving them in more vulnerable positions. Even after reaching the refugee camps in Cox's Bazar, the trauma of violence, exploitation and separation remains.

INTERVIEW



Things have improved since the initial days. I remember this old woman, probably in her late 50s, who came two to three times a week to see the paramedics, complaining about pains in her chest and head. What seemed like a physical discomfort was actually her mental anguish. She had been separated from her son while fleeing Myanmar, and though she had heard that her son was staying at another camp, she did not know how to find him. This was just one story, but there are many more like it in the camps.

The camps feel like a huge slum, they are congested with very little privacy except within the shelters. Women do not feel safe, and there is mistrust amongst the refugees. The women often prefer staying in their shelters, and they are encouraged by their male counterparts to do so. In fact, there have been reports of intimidation by some groups to further limit women's mobility. The shelters in which the refugees reside are flimsy and unhygienic. To avoid using the communal latrines and bathing spaces, which offers them little privacy and safety, women have put up sheets of tarp inside their sheds to create make-shift toilets and bathing spaces. Many of them cook indoor, which leads to excessive heat and smoke inside the shelters, as there is a lack of windows or ventilation. As a result, many women have reported respiratory and eye ailments. Those who cannot afford LPG gas for cooking must collect firewood from the forest, exposing them to further violence and abuse.

Polygamy, which is socially acceptable in these communities, is another protection issue. In this emergency situation, it has exacerbated family crisis and given rise to domestic violence. Women coming to the UN Women's Multi-Purpose Centers have shared their stories, of survivors of rape abandoned by their husbands who marry a second wife. Rohingya women and adolescent girls are also marrying married men from host communities, often as a way of assimilating, creating social unrest. Another major protection issue is trafficking. Although there is no exact data, it is understood that a vast number of trafficking activities are taking place in the camps. Though the government has attempted to limit the refugees' movements out of the camp, its sheer size and lack of fence protecting its periphery makes it near impossible to limit the movements in and out of the camps by refugees or outsiders. As humanitarian actors are not allowed in the camps past 5pm, we have little idea of abuse and violence that may be happening after dark.

To address these issues, UN Women and other agencies have set up 52 women's centers in the camps. These centers offer lifesaving information, psychosocial support, legal aid, clinical case management, basic sanitation facilities and livelihood training. The centers also provide women and girls with support to prevent, mitigate and respond to gender-based violence. Each day, hundreds of women visit the centers. In addition to the wide range of services and support, these centers give women a space to meet, talk and build a social network, a place for them to feel safe. Agencies have also been installing lighting on roads and around wash facilities to enhance protection for women and girls.

The government of Bangladesh does not allow refugees to engage in livelihood activities. In reality however, the Rohingyas are often employed by the host community as cheap labour. The majority of refugees working are men. Due to conservative norms the very limited mobility of Rohingya women means limited or no work opportunity. These women and girls often had little access to education and training, further limiting their employability. This has made female-headed households, who account for 16% of all households, particularly vulnerable. The government and UN agencies provide basic amenities, but there are many other needs for which they require money.

For women to be empowered, they need to work and they need to be trained. To that end, UN Women, in collaboration with the Ministry of Women and Children Affairs, was the first agency to initiate livelihoods training for women in the camps, in December 2017. We started training Rohingya women and adolescent girls on tailoring skills. The trained women are now earning an income by sewing dresses for other community members. UN Women has expanded these courses, and now has 5 multipurpose women's centers (MPWCs) placed around different camps, training women on various livelihood skills. UN Women and other agencies are providing

work opportunities to Rohingya women as Community Outreach Members (COMs), Safety Unit Volunteers, and Community Health Workers to undertake community mobilization initiatives and provide support in disaster response.

The *Majis*, traditional Rohingya leaders, are all men. They often have little understanding or concern of women's needs, rarely discussing these with the Camp in Charge, and reports of abuse of power have been noted. To ensure women's voices and needs are heard in the weekly meetings with Camp in Charge, UN Women has been preparing and supporting women's groups to attend the meetings and take on a greater leadership role. At Nayapara, a refugee camp in Teknaf, UNHCR organized camp committee elections in mid-2018. Out of the 12 leaders elected, half were women. However, there has been some backlash to women's empowerment, with some groups in the camps challenging women's mobility by threatening and intimidating female volunteers and workers from going door to door. This is to be expected, the oppressors will always try to stop the oppressed from gaining more power and freedom. Livelihoods and leadership activities must continue to support Rohingya women.

How vulnerable are the camps to natural disasters, can you share some of your experiences from your camp visit?

Since the camps are located in hilly lands and many shelters are built on slopes, mudslides during heavy monsoon rains are a grave concern, leading to injuries and damages to roads and structures. However, since April 21, 2019, the Inter Sector Coordination Groups (ISCG) has recorded only injuries, mostly minor, from accidents due to slope failure, highlighting the effectiveness and soundness of the disaster preparedness system that has been put in place. The camps are far inland, away from the beach, which makes them relatively safe from tidal surge. The issue of waterlogging due to heavy rains has been addressed by the humanitarian community, through substantial work undertaken to improve the drainage system.

The real risks are cyclonic storms as there are no cyclone shelters for the refugees to be evacuated to. The houses in the camps are built of plastic sheets and bamboo mats, leaving them extremely vulnerable to category 4 cyclones and other severe weather conditions, despite efforts from UN agencies to secure the structures (such as tying the roofs down to the ground and putting sandbags on roof-top). The cyclone shelters in Cox's Bazar are closer to the beach, and inadequate in number for the host community population. Refugees would not be able to travel that far, and the existing shelters would not be able to accommodate them.

What are the gender roles in terms of disaster preparedness for Rohingyas?

The government has recruited Cyclone Preparedness Program (CPP) volunteers from the Rohingya refugee population and host community to support warning and evacuation ac-

“The real risks are cyclonic storms as there are no cyclone shelters for the refugees to be evacuated to”

tivities for the Rohingya refugees. Half of these volunteers are women. However, more women refugees need to be trained on disaster preparedness and how to support women and girls during any evacuation. In a disaster situation, women's safety and needs are seldom a concern to the community. Many humanitarian actors also overlook specific needs women may have. For instance, the lack of privacy faced by Rohingya women in the camps can lead to life-threatening issues due to the conservativeness of this community, as they may avoid seeking medical assistance or using public sanitation facilities. It is vital that all sectors have sex, age and disability disaggregated data to support them in designing disaster response programs that meet the specific needs of women, men, boys and girls.

As Rohingyas are refugees, how applicable is the Standing Order on Disaster to them?

The Standing Order on Disaster is for the Bangladeshi population, and therefore is not applicable for the refugee crisis management. The Refugee Relief and Repatriation Commissioner along with the Inter-Sector Coordination Group are responsible for managing the disaster response in the camps and have devised elaborate disaster preparedness and management mechanisms unique to the camp situation. ■

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