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A GATHERING STORM

CLIMATE CHANGE
CLOUDS
THE FUTURE
OF CHILDREN
IN BANGLADESH

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OF CHILDREN IN BANGLADESH



A family take to their boats after severe flooding in 2017 in the northern district of Kurigram.

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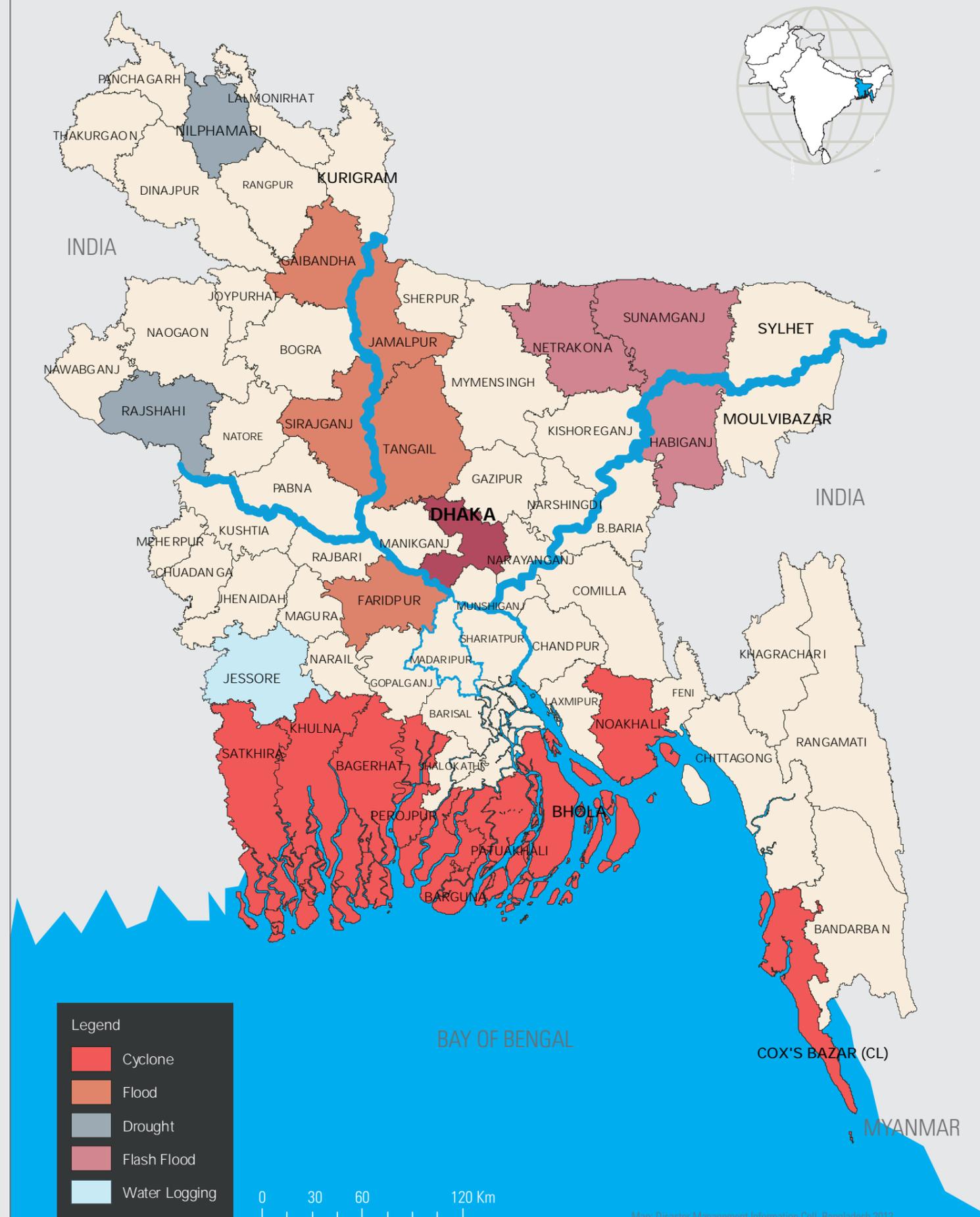
BANGLADESH: 20 DISTRICTS MOST AT RISK FROM CLIMATE CHANGE

Twenty of Bangladesh's 64 Districts are exposed to the greatest risk from climate change-related disasters, such as cyclone, flood, flash flood, drought etc. As seen in the map, the coastline facing the Bay of Bengal

and several more remote inland areas are particularly vulnerable. The estimated child population of each District is shown in the table below.

Disaster-prone Districts		Projected Under-5 Population 2018*	Projected Under-18 Population 2018*
DISTRICT	MAIN RISK		
Bhola	Cyclone	229,660	870,403
Barguna	Cyclone	94,938	365,730
Patuakhali	Cyclone	172,264	674,206
Pirojpur	Cyclone	111,555	452,548
Cox's Bazar	Cyclone	378,154	1,395,360
Noakhali	Cyclone	451,540	1,718,893
Tangail	Flood	386,040	1,482,420
Faridpur	Flood	219,686	862,401
Bagerhat	Cyclone	133,822	551,104
Khulna	Cyclone	200,105	831,287
Jessore	Water Logging	276,411	1,112,531
Satkhira	Cyclone	185,281	772,118
Netrokona	Flash flood	318,463	1,121,414
Jamalpur	Flood	279,345	1,025,598
Sirajganj	Flood	391,315	1,440,772
Rajshahi	Drought	246,764	1,027,032
Gaibandha	Flood	293,269	293,269
Nilphamari	Drought	239,662	888,557
Habiganj	Flash flood	326,517	1,125,993
Sunamganj	Flash flood	424,275	1,408,194
Total number of children at risk:		5,359,067	19,419,829

* UNICEF estimate of child population per district based on results of 2011 National Census



FOREWORD

by Edouard Beigbeder, Representative, UNICEF Bangladesh

“Climate-related disasters pose a threat to the fundamental rights of children and youth.”

Sohanur Rahman, founding member of YouthNet, a network of young people taking action on climate change

Amid the intensifying global debate around climate change, it would be hard to contest the right of the planet’s youngest citizens – represented by youth activists like Sohanur – to have their voices heard. Nowhere is this truer than in Bangladesh, with its overwhelmingly young population and almost unparalleled vulnerability to the repercussions of a changing climate.

The numbers are startling: Today, nearly 12 million Bangladeshi children live in and around river systems that are at increased risk of producing life-threatening floods. Another 4.5 million children live in coastal areas regularly struck by powerful cyclones; nearly half a million of them are Rohingya refugees who have nothing but bamboo and plastic to protect them from ferocious storms. A further 3 million children live inland, where farming communities suffer increasing periods of drought.

In total, an estimated 19.4 million children, spread across 20 of Bangladesh’s 64 districts, are exposed to the most detrimental and hazardous consequences of short- or longer-term climate change. Well over five million of them are under the age of five. A changing climate is already undermining their lives and diminishing their prospects for a better future.

To better grasp what this means in human terms, UNICEF has conducted dozens of interviews with children, parents, community leaders and officials in Bangladesh. The interviews are the basis for this report. They reveal, in unique detail, how the effects of climate change are pushing families in many of the country’s poorest communities over the edge, leaving them unable to keep their children properly housed, fed, healthy and educated.

The interviews include troubling accounts of child migrants driven out of their homes and schools – and displaced to overcrowded city slums – as a result of devastating floods or widespread riverbank erosion. For many children and young people, especially those who lack basic skills, survival in these harsh surroundings means taking on low-paid, hazardous, exploitive work. For girls, it may mean becoming a child bride or even a sex worker.

While these and other climate-related risks facing children are escalating, they are not new. The Bangladesh Climate Change Strategy and Action Plan clearly articulated them in 2009. Since then, the strategy has been the framework for impressive progress made by the government, its partners and society as a whole – including a growing number of young people – towards building climate resilience. But much more can and must be done to avert the real danger that climate change poses to Bangladesh and its long-term development goals.

To cite just one example, UNICEF’s call to action in this report (see page 37) includes an appeal to make sure that cash grants and other quality social services reach Bangladeshi families in the immediate aftermath of climate-related shocks. Such support must be available to migrant families when they arrive – often lost and bewildered – in Dhaka and other major cities.

Long years of experience with aggressive forces of nature have helped Bangladeshis develop admirable powers of resilience. Huge investments in disaster preparedness and risk reduction have paid off, but the threat continues to mount. In October 2018, the Intergovernmental Panel on Climate Change released its most extensive warning yet about the imminent dangers that rising global temperatures pose to humankind. In Bangladesh and around the world, we must put the needs of children squarely at the centre of our response to those dangers – before the most destructive effects of climate change are unleashed.

In Siranganj district, a woman and her child wade through floodwaters to find shelter after their home was submerged during the 2007 South Asian floods.



Due to the lack of drinking water on Gabora Island in the southern district of Satkhira, women are forced to go by boat - sometimes several times a day - to a nearby town to collect fresh water for their families. Rising water levels in the Bay of Bengal are affecting the lives of hundreds of thousands of villagers living on the low islands in the south.

ON THE CUTTING EDGE OF CLIMATE CHANGE

In the remote northern region of Kurigram, a tearful young mother clutches a photograph of her child, who drowned during the devastating Bangladesh floods of 2017.

On an island in the Brahmaputra River, a 15-year-old student named Shumi walks to school along a narrow path that erosion is steadily devouring.

In a village beside the Bay of Bengal, 11-year-old Maroof remembers a friend who was swept to his death by a tidal surge.

In the rubbish-strewn streets of a Dhaka slum, Mohamed Chotol, 13, makes a living collecting discarded plastic bottles.

In different ways, each experience underlines the profound and often devastating ways in which climate change affects the lives and futures of more than 19 million Bangladeshi children.

From one end of the country to another - from the flood- and drought-prone lowlands of the north to the retreating coastlines of Barisal and Khulna in the south - powerful, unpredictable forces of climate change are wreaking havoc. They threaten the health, safety and future prospects of the most vulnerable of Bangladesh's citizens: its children.

Some children fall victim to the floods, cyclones and other climate-related disasters that strike with frightening frequency. Others find themselves uprooted - often many times over - by



A family left homeless by cyclone Aila in 2007 wait for assistance in Koira, Khulna District.

© UNICEF/ SHAIKH MOHR UDDIN



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Drowning is by far the leading cause of death among Bangladeshi children, causing over one third of all child injury deaths. According to the Bangladesh Health and Injury Survey, an estimated 14,438 boys and girls aged 0 - 17 years died by drowning in 2016. While it is not clear how many of these fatalities can be attributed to climate change-related factors, the high rate of drowning - equivalent to nearly 40 deaths daily - is a cause of great concern. As part of its effort to reduce the number of child drownings, UNICEF supports the provision of swimming lessons through the SwimSafe programme for children from 5 to 10 years of age. About 130,000 children have completed the course so far.

the insidious effects of river erosion or the encroachment of salt water, which renders farmland infertile. Many of these children end up as migrants, adrift in city slums, their health compromised and educational prospects destroyed. Millions find themselves trapped in exploitive work or, in the case of many girls, early marriages.

The children at the highest risk are from families whose lives are already shaped by poverty and inequality. Such families are often unable to provide their children with basic necessities like protection, nutritious food, clean water and the chance to learn - all due to the inescapable impact of climate change.

Bangladesh is uniquely vulnerable to climate change, with two-thirds of the country less than five metres above sea level. Its flat topography - combined with high population

density and weak infrastructure - renders it acutely susceptible to the destructive storms, river flooding and other dangers associated with a changing climate.

And extreme, violent weather events are on the rise. The 2009 Bangladesh Climate Change Strategy and Action Plan predicted "increasingly frequent and severe floods, tropical cyclones, storm surges and droughts, which will disrupt the life of the nation and the economy." Experience continues to bear out that forecast.

"We feel we are on the cutting edge of climate change," says Assaduzaman Khan, Assistant Director of Cyclone Preparedness in Kulapara. The town is at the heart of the world's largest delta, formed by Bangladesh's three major rivers.



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Maroof Hussein, 11, has vivid memories of the events of June 2017, when unusually strong seasonal floods hit his village, Nizampur, in Patuakhali District on the fringe of the Bay of Bengal. "My school and house were flooded at the same time," he recalls. "I went to bed and woke up to see the floodwaters surging in. It was terrifying." Maroof and his family managed to escape, but his eight-year-old friend, Iqbal, was washed out to sea and drowned.

"For most of the past decade, we would find the seawater surging across an area of about one square kilometre," Khan adds. "But in recent years, we have found that it can cover an area ten times as large."

Scientific findings show a significant rise in sea temperatures in the Bay of Bengal and - as a consequence - some of the fastest rising sea levels in the world.

If that trend continues, the implications for Bangladesh are alarming. According to the World Bank, by 2050 a moderate, one-metre combination of sea level rise and storm surge would lead to the loss of 4,800 square kilometres of land - equivalent to 3.2 per cent of Bangladesh's land mass. In the event of a more dramatic two-metre rise over the same period, around 8 per cent of the country (or 12,150 square kilometres) would be inundated.

SEAWATER CONTAMINATES WATER AND CROPS



© UNICEF/CHAKMA

Former agricultural land in Barisal Division, close to the Bay of Bengal, is now unusable due to water logging and salt water intrusion.

For decades, communities on the low-lying islands and along the estuaries that fringe the north-eastern edge of the Bay of Bengal have contended with an unseen enemy: the brackish water seeping into their drinking water supplies and contaminating the land from which they make their living.

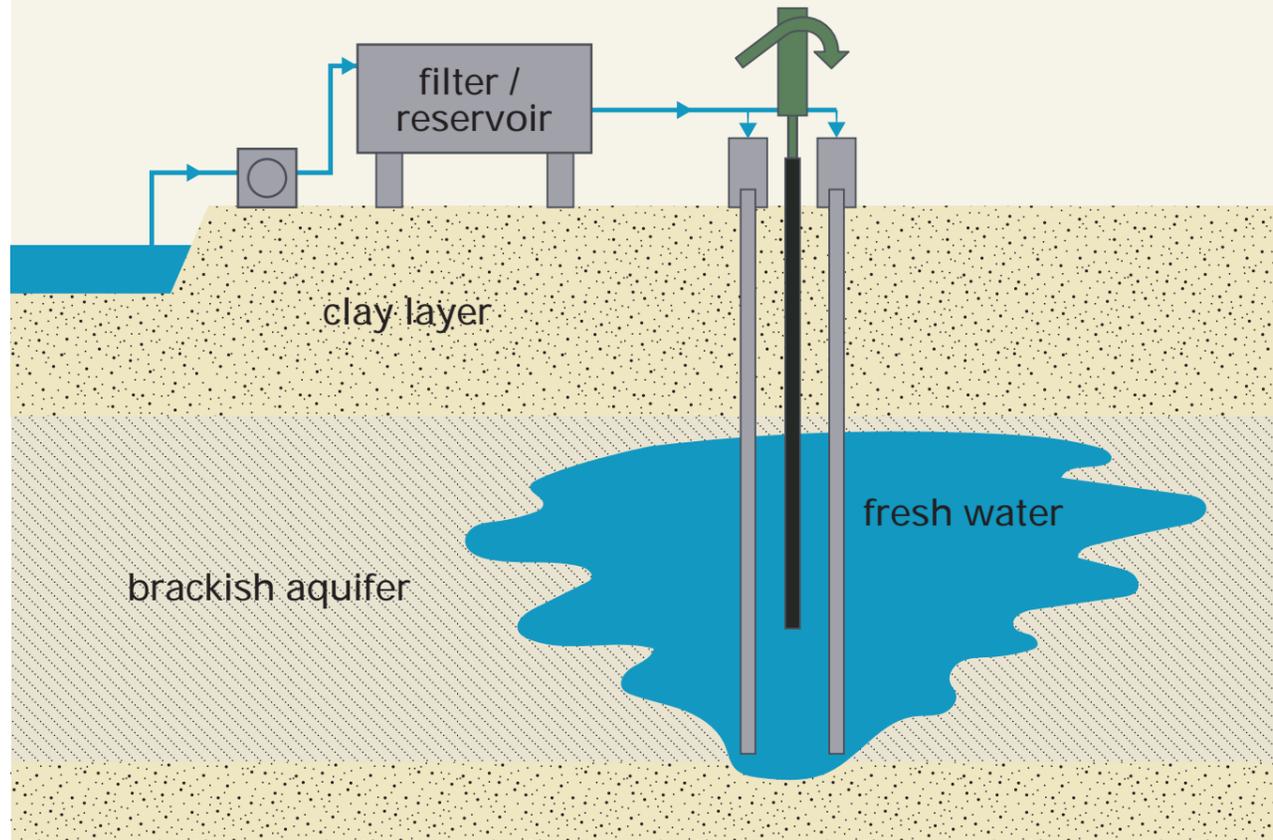
Salt water intrusion is an outcome of rising sea levels and the increased frequency and intensity of storm surges. These surges push seawater into wells and other groundwater sources. They also damage crucial water and sanitation networks. Over time, farmland becomes soaked in salt water and loses its capacity to grow rice or other crops. The result is a crisis affecting some 20 million Bangladeshis who live in

coastal areas comprising more than 10,500 square kilometres.

"Unchecked, salt water intrusion is catastrophic for people living in these areas," says Dara Johnston, UNICEF Bangladesh Chief of Water, Sanitation and Hygiene. "Water supplies become unfit for drinking - and public health, farming, aquaculture and coastal ecosystems are all threatened."

Pregnant women have additional reason to fear the consequences of salt water intrusion. Medical research has linked high salinity in drinking water to an increased risk of preeclampsia and gestational hypertension among women living close to Bangladesh's coastline.

Technology helps address salt water intrusion



A method for storing fresh water and protecting supplies against salt water intrusion is provided by a system known as Managed Aquifer Recharge. MAR involves collecting and treating rainwater gathered from water ponds and roofs and then injecting it underground where it is stored for future use. Partners including the Bangladesh Government, Dhaka University, Acacia Water (Netherlands) and UNICEF have so far installed 100 MAR systems in the south-western region of Khulna, each capable of meeting the needs of several hundred people.



Community members are trained to manage MAR systems themselves.



RURAL COMMUNITIES AT THE MERCY OF THE RIVER

Fulchari, a village in Gaibanda District, is typical of the rural communities scattered along the banks of the broad rivers that funnel through the centre of Bangladesh before spilling out into the Bay of Bengal.

As long as anyone can remember, the fortunes of the 200 or so families living in Fulchari have been dictated by the rhythm of the river and the seasons. But villagers say the weather has become much harder to predict – with alarming results.

“When we plant rice paddy we expect rain but we don’t

see it,” says one woman. “The plants all die. Everything has changed.”

Local people sense that climate change is making the region’s near-annual flooding much more destructive. During the monsoon season, heavy rain and floodwaters sweeping down from the Himalayas turn the river into a dangerous torrent, bringing the risk of heavy flooding across a broad swathe of the country.

The floods of 2017 did massive damage. By late September



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The surging waters of the Brahmaputra river have forced Mufiz el Din and his family to move their home eight times in 12 years.



A boat on the Brahmaputra river in Gaibandha district. The effects of river erosion are clearly visible on the opposite bank.

© UNICEF/BROWN

that year, the floods had affected around 8 million people - including the families of Fulchari - and left more than 2.5 million children in need of humanitarian assistance.

In other years too, floodwaters have spilled over the embankment protecting Fulchari, engulfing dozens of homes, consuming farmland and forcing families to move.

Mufiz el Din, 72, lost his house and most of his rice paddy in 2007, another year of extensive flooding. Since then, he and his wife and five children have had to move eight times, trying to find a refuge beyond the reach of the river. Besides leaving the family impoverished, constant displacement has cost the children their education.

"I had to take my two older sons out of school because I couldn't afford to keep them there," says Mufiz el Din. His two younger daughters, Marufa, 9, and Mariam, 6, manage to attend a local school, but he doesn't know how long he will be able to keep them there. Mufiz el Din's top priority is to replace the family's current house, which - due to ongoing erosion - stands precariously on the bank of the Brahmaputra River.

"For the last ten years we've been struggling here, and we have no means to build anything ourselves anymore," he says.

YOUTHFUL FUTURES ERODED BY RIVER'S DAILY ASSAULT

In fourteen years as head teacher of Kunder Para secondary school, in the rural north west of Bangladesh, Asad Ujjaman has had ample opportunity to understand the menace that climate change represents to his students.

The school is a cluster of neat huts perched on a low-lying sand bank in the path of the Brahmaputra. From here, the river runs southward through the heart of Bangladesh towards the Bay of Bengal. In the dry season, the setting seems tranquil enough. But in the monsoon period, the island - and the school - are in peril.

In 2015, the school was severely damaged in a cyclone.

In 2017, the major floods that affected much of Bangladesh drove many families off the island in search of safer places to live.

And yet, the biggest long-term threat has been gradual. Local residents say ongoing river erosion has eaten away well over a third of the island's total surface area in the past decade. During the last rainy season, the riverbank suddenly gave way, tipping a school building used as a girls' hostel into the water.

"If the direction and force of the river flow continues, then the whole school could be gone as soon as next year," says Ujjaman.



© UNICEF/BROWN

Students from Kunder Para secondary school worry that river erosion could soon claim their class rooms - and their futures.

The signs of erosion are clearly visible along the narrow path that many of the students use to reach a ferryboat to their homes across the river. Deep fissures scar the path as it threads its way along the edge of rice fields, which are themselves crumbling into the fast-flowing waters.

Most families who send their children to the Kunder Para secondary school have been forced to move numerous times to escape the floods that strike the area nearly every year.

16 year-old Rashid ul Islam says he and his family have made eight moves in the past five years, taking them to four different islands.

"I have to move house and sometimes change school as

well," says Rashid . "It really affects my learning, especially my scores in exams," he adds. "One time I missed three or four months of class. I had to go and stay with neighbours because my parents couldn't find a place for us all to stay."

In many climate-afflicted parts of Bangladesh, experiences like this are enough to take a child out of school for good.

"The moment the family is forced to move, children miss class and are eventually taken out of school altogether," says UNICEF Bangladesh Deputy Representative Sheema Sen Gupta. "Parents tell them they are needed to go to work, to make some money to support the family. And the longer they stay out of school, the less likely they are to return."



"The erosion on the island is happening so quickly now," says 16-year-old Shaheen Alam. "I have my final science exams next year, and if anything happens to the school, then my chances of taking my exams and getting the grades I need to join a good university will be destroyed. My dream will not happen."

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Beneath the waves: a school lost to river erosion



© UNICEF/ KHALIDUZZAMAN

One of several former school buildings destroyed by the Brahmaputra river in Jamalpur district, northern Bangladesh.

From the deck of a ferry boat, school headteacher Shakawat Hussain can still pick out the spot in the Ilisha river where his former school is now submerged.

"It was a three-storey building with two acres of land, but when the river took hold of it, it sank in a matter of minutes," recalls Hussain.

The school on Ramdashpur island had 600 pupils when it was lost to the river erosion and flooding that are the scourge of this part of southern Bangladesh. Since that fateful day in late 2010, local people say at least 30 square kilometres of land have been lost to the river.

"Erosion has always been a fact of life in this area, but since 2009 the weather seems to have become much more extreme," notes Hussain. "I'm certain the climate is changing. My fear is that what happened to my school could happen again somewhere else. I don't think it's a problem that's going to go away."

The 58-year-old head teacher has since overseen the construction of a new school eight kilometres south of Ramdashpur. Initially, student numbers were low because many who had attended the destroyed school were unable to travel to the new location.

CHILDREN'S NUTRITION AND HEALTH IN JEOPARDY

Wedged between a flood plain to the north, close to the Indian border, and the Bowlai River to the south, the tiny hamlet of Umedpur in northern Bangladesh is no stranger to seasonal flooding. But the threat has grown in recent years, with damaging consequences for the farmers on whose production the area depends.

"Over the last two years, changes to the climate have caught us by surprise," says villager Mohammed Gulam Sirowar Dalem. "In 2017, the rains suddenly came in March, causing flash flooding and destroying nearly all our rice crops. We had no chance to save anything."

While most of Bangladesh receives sufficient rain during the monsoon season, the north-west of the country regularly suffers from localized drought conditions, causing severe losses in agricultural production.

"At certain times of the year we do not have enough rain anymore," says Dalem. "We plant the same number of seedlings each year for an ever-smaller yield."

Agriculture contributes 14 per cent of Bangladesh's GDP and provides livelihoods to over 60 per cent of the population. Yet farming is highly sensitive to changes in temperature, rainfall and the timing and duration of seasons.



A woman works in a paddy field in Jamalpur District, northern Bangladesh.

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Selling vegetables in a market in the Mirpur area of Dhaka.

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A small boy carries leaves in Ajmeriganj, north-eastern Bangladesh.

© UNICEF/NOORANI

"A reduction in farm production often results in an increase in food prices," says UNICEF Bangladesh Chief of Nutrition Piyali Mustaphi. "This means children from the poorest families are likely to go hungry." Worse still, adds Mustaphi, the nutritional content of food produced under these conditions is often compromised - with a negative impact on children's nutritional status.

Such warnings are not new. As long ago as 2007, the Intergovernmental Panel on Climate Change established a clear link between extreme climatic events and increased levels of malnutrition, "including those relating to child growth and development."



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During the 2016 floods in Kurigram, northern Bangladesh, a girl tries to pump clean water from a standpipe. The contamination of drinking water supplies is a major risk during flooding.

Declining food security is not the only way in which climate change affects the well-being of children and their families. There is mounting evidence that changing climatic conditions are contributing to increased rates of communicable and non-communicable diseases, including waterborne diseases such as diarrhoea.

When the Brahmaputra River burst its banks in mid-2017, at least 480 community health clinics were inundated. More than 50,000 tube wells, which are essential for meeting communities' safe water needs, were damaged or destroyed. And thousands of latrines were washed away. The damage to infrastructure heightened the risk of disease spread by contaminated water.

By early September 2017, the Government of Bangladesh reported 12,370 cases of acute watery diarrhoea and 659 cases of respiratory infection in flood-stricken areas.

"Whenever safe water is in short supply – and that can be during floods as much as during periods of drought – more children are likely to use untreated water for drinking," says UNICEF Bangladesh Chief of Health Maya Vandenant. "And that exposes them to the risk of waterborne diseases such as diarrhoea, hepatitis A, cholera, dysentery and typhoid."

The government's response to these risks now includes the use of mobile clinics and an online health management

information system. Even so, mitigating the impact of climate change disasters on public health is a huge undertaking.

Vector-borne diseases such as dengue and chikungunya fever (which are carried by the *Aedes* mosquito) have emerged as a further consequence of climate change and other factors including unplanned urbanization, environmental deterioration and increasing population mobility. Figures from the Directorate

General of Health Services show 10,148 recorded cases of dengue infection and 26 fatalities from the disease in 2018.

"The problem is exacerbated by changes to the climate," says UNICEF Health Specialist Margub Jahangir. "Mosquitoes have thrived in recent warmer temperatures and untimely rainfalls. Dengue is likely to be a major health challenge over the next decade."



© UNICEF/CHAKMA

Kameena Islam blames freak weather for the death of her infant son, Shahnawaz, in May 2018. After the baby fell ill with a fever, she wrapped him in a plastic sheet and battled through an intense downpour towards the local hospital in Umedpur, northern Bangladesh. The journey took more than an hour. When she arrived, she discovered to her horror that Shahnawaz had died in her arms. Islam and her family still don't know what caused the child's death, but they say the weather conditions were at least partly responsible.

DEEPENING CLIMATE CRISIS TRIGGERS EXODUS TO THE CITIES

By 6 a.m., Dhaka's main Sadarghat boat terminal is already a hive of activity. Large passenger ferries dock every few minutes, disgorging streams of people and mountains of luggage. This bustling port on the Buriganga River is where many families fleeing the effects of climate change in rural areas of Bangladesh get their first sight of the city that will be their new home.

Migration, both within Bangladesh and abroad, has long been a way for people to cope with the country's susceptibility to extreme weather. The daily flow of people into Dhaka, Chittagong and other big cities helps drive one of the highest urban population growth rates in the world - estimated at 4 per cent in 2015.

Climate change is playing an increasing role in pushing people to abandon their homes and communities, and to rebuild lives elsewhere. According to some estimates, between 50,000

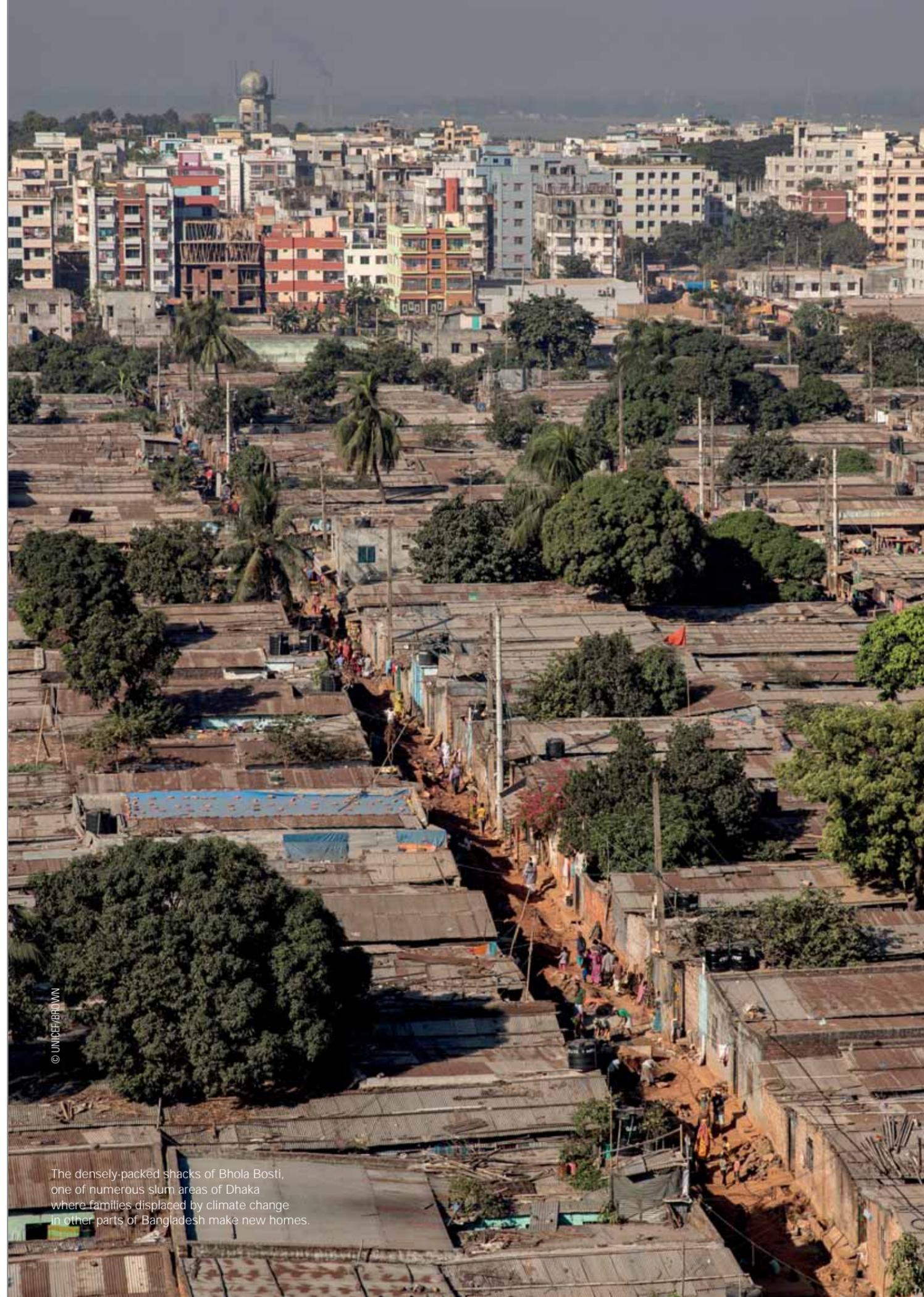
and 200,000 people are displaced annually by river erosion alone. Already, 24 of Bangladesh's 64 coastal and mainland districts are producing climate migrants, and research carried out by the Association for Climate Refugees finds that 6 million individuals have so far been displaced by climate hazards.

That figure looks likely to increase sharply in the years ahead, as the impacts of climate change intensify in Bangladesh. A recent World Bank report said the "highly climate vulnerable" country could see as many as 13.3 million internal climate migrants by 2050.

"When families migrate from their homes in the countryside because of climate change, children effectively lose their childhoods," says UNICEF Bangladesh Representative Edouard Beigbeder. "They face danger and deprivation in the cities, as well as pressure to go out to work despite the risk of exploitation and abuse."



In Dhaka port, passengers disembark from overnight ferries arriving from coastal areas of southern Bangladesh.



© UNICEF/BROWN

The densely-packed shacks of Bhola Bosti, one of numerous slum areas of Dhaka where families displaced by climate change in other parts of Bangladesh make new homes.

HARSH REALITIES IN DHAKA'S SLUMS



© PATRICK BROWN

A climate refugee from southern Bangladesh, Shafiya married at the age of 14. Four years later she is expecting her first child.

With a sigh, 18-year-old Shafiya Aktar bends to stir the pot of rice bubbling on a tiny stove. Then she returns wearily to the double bed that occupies most of the dark, airless room she shares with her husband, his mother and another relative.

Six months pregnant with her first child, Shafiya spends much of the day alone in Bhola Bosti, a densely packed warren of tin and bamboo shelters wedged between tall apartment blocks in a Dhaka suburb. Since the first inhabitants arrived here some 20 years ago, the slum has grown to accommodate around 1,800 poor families.

The area takes its name from the coastal region of Bhola. Shafiya and most of her neighbours have migrated from Bhola because climate change renders life virtually impossible on the vulnerable margins of the Bay of Bengal.

"My parents were farmers. I came here with them and the rest of my family when I was about ten," Shafiya recalls. "I

remember the water rushing into our house and sweeping everything away. It took our land as well."

That was when the family made the overnight ferry journey to Dhaka, bringing a few bags of belongings.

Adjusting to life in the slum - the only place they could afford - was not easy. As her parents looked for work, Shafiya was left to fend for herself. The family could not afford to send her to school, so at the age of 14, she married her 18-year-old neighbour, another climate refugee from Bhola. Four years on, she frets over the life her unborn child will have in these harsh surroundings.

"Like any parent, I dream of him or her growing up and getting an education," says Shafiya. A more immediate concern is how she will be able to keep her baby healthy, since there are few medical services in the slum.

Sharmin Akhter, a social worker with the non-governmental

organization Surovi, a UNICEF partner, says stories like Shafiya's are common in all the slum areas scattered around Dhaka. "These families come to a place that is barely habitable. They pay extortionate rents to live in squalor," she asserts. "They've lost everything so they are forced to come here to make a living."

Akhter adds that it is children who are most at risk in the slums. The parents go to work each day and come back late, and the children must fend for themselves.

In Bhola Bosti, some of the more fortunate children attend one of three informal learning centres that operate with support from UNICEF. The centre is a cramped room, but its walls are decorated with bright crayon drawings and carefully scripted multiplication tables. Its four female facilitators teach 15 boys and 15 girls in two separate shifts. Classes cover the Bengali language, maths, English, life-skills and general science.

"The centres accept children up to age fourteen. But by the time they are eleven, they're gone," explains Akhter. "The girls end up in the garment factories and the boys find jobs in any of the shops or small businesses. It's hard to keep them here."



© PATRICK BROWN/PANOS PICTURES

Bhola slum, Dhaka.



© UNICEF/CHAKMA

Children attending a UNICEF-supported informal learning centre in the Dhaka slum of Chalandika.

A changing climate heightens the risk of child marriage

Nazma Khatum, 14, lives with her mother, three sisters and a brother on Kablagunj, a river island in northern Bangladesh that has repeatedly suffered the effects of extreme weather.

Nazma attends a local school, but her hopes of becoming a nurse one day look uncertain, at best.

The recent death of Nazma's father means that her mother, a day labourer, is raising the family on her own. And climatic changes that have damaged farm production in the region mean work is scarce.

"Because it is so hard for my mother to earn a living, I am never certain she will have enough money to continue paying for my education," says Nazma. "I would like to

go to university in Dhaka, but I'm not sure my mother can afford that."

The connection between changing climate and child marriages, child labour and access to education is evident in various parts of Bangladesh.

Gyas Uddin is a specialist on child protection issues in Dahl Char, in the far south of the country. He says that local NGOs have made progress in countering practices such as child marriage in recent years. But this success is now at risk.

"Climate change makes people poorer," says Uddin, "and poverty is a major factor behind child marriage."



Fourteen year-old Nazma worries that climate change will turn her into a child bride.

RISKS FOR CHILDREN PUSHED INTO THE WORKPLACE



Mohamed supports his family by collecting plastic bottles for recycling.

Mohamed Chotol, 13, understands the reality of child labour all too well. For the past two years, he has collected discarded plastic bottles from the streets of Dhaka's Bola slum district for recycling. It is dreary work, and not without its dangers.

On a good day, Mohamed can collect up to 15 kilogrammes of plastic in the sack that he slings over his shoulder - enough to earn 300 Taka (US\$3.50).

"I give the money to my parents," says Mohamed, although he sometimes keeps 50 Taka to buy himself a snack. "I would prefer to be in school, but I don't hate the work," he adds. "I'm with my friends, and in the afternoon we go to play cricket after we finish our shift."

Mohamed Lokman is the dealer to whom Mohamed brings his bottles. "There are about eight or nine businesses like mine in this neighbourhood, all employing kids," says Lokman. A one-time rice farmer, he has lived in Bola for more than 20 years. "It would have been better if I'd stayed in the south," he laments, "but I lost my farm due to river erosion."

According to UNICEF Bangladesh Child Protection Specialist Kristina Wesslund climate change is one reason why an estimated 3.45 million Bangladeshi children are involved in child labour.

"Climate change is undoubtedly increasing the number of children who are pushed into the workplace, where they miss out on an education and are terribly exposed to violence and abuse," says Wesslund.



16 year-old Mohamed Shajib came to find work in Dhaka after flooding swept away his family's home.

© UNICEF/BROWN

The physical hazards facing many Bangladeshi child workers are obvious in the bustling shipyards that occupy part of Dhaka's riverfront. The incessant sound of hammering echoes as labourers – many of them young, wearing no masks or other protective equipment – scrape rust and layers of old paint from the hulls of battered cargo ships hauled up on the dockside.

Mohamed Shajib, 16, is about to start a 12-hour shift. His work involves using a heavy blowtorch to cut and shape steel plates used for ship repairs.

"It's hard work, but I earn the money my parents need to live," says Mohamed. He takes a day off only if he is sick, staying in the bare room that he shares with six other workers, including an elder cousin.

Mohamed arrived in Dhaka, alone, 18 months ago. He was

determined to support his family after they lost everything to river floods in their hometown of Rajbari, to the west of the capital.

"I remember the ground giving way beneath my feet," Mohamed says, recalling how the powerful current swept away his family's home along with those of more than a dozen neighbours. "I kept on thinking that if we had been inside, we would have been drowned."

The family moved repeatedly to escape floods. Each time, they ended up in another vulnerable spot on the riverbank, the only land they could afford to rent.

"We knew it was just a matter of time before we had to move again," says Mohamed. Now, with the wages he sends them, his parents can afford a safer place to live.

Of all the Bangladeshi children and young people driven to big cities by the force of climate change, girls run the highest risks.

Sonia, 15, used to live in Barisal, on the country's southern coast. After river erosion destroyed their home, she and her family left their village and headed for Dhaka. They settled in a slum district where relatives were already living.

Two weeks after they arrived, Sonia's father died suddenly. Under pressure to find income to cover their rent and other costs, Sonia's mother took a job as a domestic servant while Sonia went to work in a garment factory.

"The factory was far away, and at night I came back very late," she says. "One night as I was leaving the factory, three boys

followed me. They tied my hands with a towel and raped me."

Sadly, Sonia's mother then told her daughter to leave the house. Sonia found her way to a large railway station, where she met other destitute girls who introduced her to a world of drugs and prostitution. Sonia says she hates her current life and would do anything to return home to Barisal.

"If the river had not taken our house, we would have lived happily in our home, and I could have studied," she says.

The number of children working in Bangladesh's sex industry is unknown. But NGOs working on the issue confirm that women and girls who migrate to urban slums are often forced into sex work and prostitution because they have no alternative way to make a living.



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Poverty can drive young girls arriving in the cities into sex work.

DIRTY AIR DEEPENS HEALTH RISKS FACING CLIMATE MIGRANTS IN THE CITIES

Besides driving the rapid growth of Bangladesh's cities, climate change-induced migration from the countryside has helped fuel another problem: rates of air pollution that are among the most hazardous of any in the world.

Around the outskirts of Dhaka, an estimated 1,000 brick kilns spew plumes of white smoke into the air. Much of the production is destined for building sites employing large numbers of migrant workers – many of them children.

During the dry season, especially when brick production is at its peak, dust and other particles from the kilns combine with fumes from factories, construction sites, garbage dumps and road traffic to produce a dense, eye-stinging smog that envelops the entire city.

A global report by the World Health Organization (WHO) recently concluded that air pollution is having “a vast and terrible effect on child health and survival.” The report said the issue was especially acute in low- and middle-income countries in Asia, including Bangladesh.

WHO cited data showing that globally in 2016, ambient and household air pollution contributed to respiratory infections that resulted in the deaths of 543,000 children under the age of 5.

The problem in Bangladesh has been widely recognized. A decade ago, the Institute of Asthma and Allergy estimated that there were 7 million asthma sufferers in the country – 4 million of them children. Doctors say the figure is much higher today.



The burning of garbage – here in the Buriganga area of Dhaka -- is a significant contributor to hazardous levels of air pollution.

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FRAGILE ENVIRONMENT IMPERILS ROHINGYA REFUGEES



© UNICEF/CHAKMA

Almost nothing is left of the vegetation that covered the area now occupied by the camps sheltering Rohingya refugees.

The sudden and dramatic influx of more than 700,000 Rohingya refugees from Myanmar in the latter part of 2017 wrought terrible environmental damage to a region that was already battling some of the severest effects of climatic change.

In the hills south of Cox's Bazar town, several thousand acres of forest and vegetation were cleared to make way for bamboo and tarpaulin camps needed to accommodate the refugees (more than half of whom are children). The exposed sandy soil has left them at risk of landslides and flash flooding, especially during the monsoon months.

“The woodland and vegetation are essential for stabilizing the sandy and undulating terrain,” says UNICEF's Nazzina Mohsin, who specializes in environmental issues. “Over time, the loss of so much green cover could also affect the amount of rainfall the area receives.”

In one corner of the sprawling Kutapalong refugee camp, a solitary Banyan tree towers above a sea of plastic shelters, a poignant remnant of the forest that used to dominate the area.

The coastline of Cox's Bazar District - whose 120 kilometre beach is one of the world's longest - has been under assault from rising sea levels and salt water intrusion for years. Along the coastal road leading to the southern town of Teknaf, teams of labourers are often at work, stacking concrete blocks in an attempt to hold back the encroaching waves.

Local residents also say weather patterns have noticeably changed over the years, with shorter winters and warmer summers. And while the authorities have made efforts to provide cyclone shelters for the Bangladeshi population, the shelters are insufficient for the needs of the refugee community during the lengthy monsoon season.

YOUTH JOIN THE BATTLE FOR CLIMATE ACTION



Sand bags ready for placing along the banks of the River Jamuna to help protect against erosion.

We have to do something,” says 17-year-old Abid Hossain Raju. “We are hit badly by river erosion every year. Crops are spoilt, families fall into poverty, teenagers drop out of school and parents marry off their daughters out of desperation.”

Abid is a climate activist from Bhola on the southern coast of Bangladesh. He is a member of YouthNet for Climate Justice, an organization set up in 2016 to address the climate crisis and prepare citizens to be more climate-resilient.

One of YouthNet’s first actions was a visit to Andar Char, an island that is extremely vulnerable to climate-linked disasters. The young activists wanted to document the particular vulnerabilities faced by children there. They concluded that children and women suffered the worst impacts of climate change, which disrupted their lives and livelihoods, as well

as their access to health services, education, and water and sanitation.

“Climate-related disasters pose the greatest threat to the fundamental rights of children and youth in different aspects of their lives and well-being,” says YouthNet Coordinator Sohanur Rahman. “Many children are getting displaced as climate refugees. There is no development in living standards, and they fall prey to various diseases, violence, exploitation and oppression.”

In February 2017, more than 500 young people from remote islands in Barisal Division, southern Bangladesh, attended the country’s first youth conference on climate change. Another 10,000 took part through side events and social media. Experts, lawmakers, academics and climate change activists presented research papers and held three capacity-building sessions for participants.

In a declaration delivered at the conference, YouthNet members demanded greater budget allocations to address climate issues affecting children and youth. They also called for a special programme for children in coastal regions.

YouthNet has developed a one-year action plan for community mobilization, advocacy, capacity-building and monitoring of disaster risk reduction and climate change adaptation. Implementation of the plan has begun in 10 slums in Barisal city and other marginalized districts in the division, reaching 10,000 people.

Members of YouthNet also work directly on the ground, spreading messages on a range of issues related to the climate crisis: including disaster preparedness, water and sanitation, menstrual hygiene, health care, sexual and reproductive health, gender-based violence and child marriage.

Some 1,200 young people from more than 100 organizations are now working with the YouthNet, which is expanding its activities into other coastal and climate-vulnerable regions across the country. The network also plans to organize a youth parliament and a hub for innovation and youth empowerment.

“The time for talk has been over,” YouthNet members said in their 2017 conference declaration. “Let’s go for action.”

A CALL TO ACTION

Shielding children from the effects of climate change

The Government of Bangladesh produced its first Climate Change Strategy and Action Plan in 2009, declaring that the needs of the poor and vulnerable - “including women and children” - would be a priority in all planned activities. Since then, under the government’s leadership and with the full involvement of civil society, the country has done much to make vulnerable communities more resilient to climatic shocks. One measure of its success (and of other efforts that predate the 2009 action plan) has been a dramatic reduction in mortality rates during cyclones in recent decades.

As Bangladesh embarks on the plan’s second phase in 2019, it is imperative to devote greater attention and resources to keeping children safe and ensuring that child health, education and other services are shielded from the effects of climate change. To that end, UNICEF calls for concerted and sustained efforts - led by the government with the active participation of the international community and other partners - including the following actions:



Local people in Padma Pakur, Khulna Division, form a human chain to build a new flood barrier after Cyclone Aila in 2009.

UNICEF calls for the following actions in:

Education

- Strengthen education planning to improve the climate resiliency of schools and their local communities.
- Integrate disaster risk reduction and risk management skills into the curriculum at all levels of the education system.
- Ensure that children who are threatened by climate disaster, or forced to migrate by climate change, have continued access to education.
- Educate children about climate change, earthquakes and other risks so that they can make appropriate choices about their lives and livelihoods.
- Implement a programme to retrofit schools that are vulnerable to predictable flood, cyclone and earthquake risks in urban and rural areas.
- Help all schools adopt environmentally friendly practices and emergency response strategies in their School Improvement Plans.
- Install renewable energy technology in schools to facilitate lighting, air pollution monitoring, digital connectivity, extended operating hours and lesson preparation for teachers.

Nutrition

- Advocate for investment and concerted efforts to bolster the food and nutrition security of rural areas that are most threatened by climate change.
- Strengthen food and nutrition security surveillance, and develop early warning systems, for timely preventive action in the face of climate shocks.
- Encourage existing community associations, such as adolescent clubs, to help raise awareness and advance innovative solutions to nutrition challenges raised by climate change.
- Adopt an integrated approach to nutrition programming in chronic crises or pre-crisis situations, using seasonal forecasts and monitoring to trigger implementation - and to avert the need for a later humanitarian response.
- Develop preparedness for nutrition in emergencies by strengthening the systems needed to cope with climate-related shocks and seasonal hardship.

Health

- Work with development and humanitarian partners to introduce policies and practices supporting continuity of health services, especially for children and pregnant women, during seasonal hardship, other disruptions and chronic crises.
- Build the Climate Change and Health Promotion Unit's capacity to map climate change and health trends in Bangladesh, and strengthen the monitoring system used to feed data into evidence-based, climate-sensitive planning in the health sector.
- Advocate for policies building the resilience of resources and infrastructure to climate and non-climate disasters - such as floods, cyclones and earthquakes - to ensure minimum disruption of health services.
- Advocate for green health facilities, including renewable energy technology installed in health centres for lighting, hot water, vaccine storage, medical equipment and digital connectivity.

Water, Sanitation and Hygiene

- Take managed aquifer recharge (MAR) technology to scale in all suitable locations.
- Advocate for policies and standards strengthening the resilience of water infrastructure to climate change, thereby minimizing the disruption of health, education and other services.
- Pilot solar or other renewal energy sources to power MAR pumps as a means of reducing their cost and environmental impact.
- Promote the concept of 'safe schools' to include climate-resilient water and sanitation facilities.
- Explore options for latrine design that are more resilient to flooding and tidal surge.
- Research the impact of saline agriculture and aquaculture on local water supplies, and work with natural resource management stakeholders to seek equitable solutions for all.

Child Protection

- Reinforce efforts to protect children caught in climate-related disasters, preventing boys and girls from being pushed into hazardous forms of work and preventing girls from being forced into child marriage.
- Advocate for child- and adolescent-safe cyclone shelters and increased psychosocial support for children & young people affected by climate shocks.
- Implement child-centred social protection measures as a vital component of Bangladesh's climate-change adaptation strategy, funded through climate finance.
- Help children become more resilient by deepening their understanding of the impact of climate change and what to do in emergency situations.

Social Protection

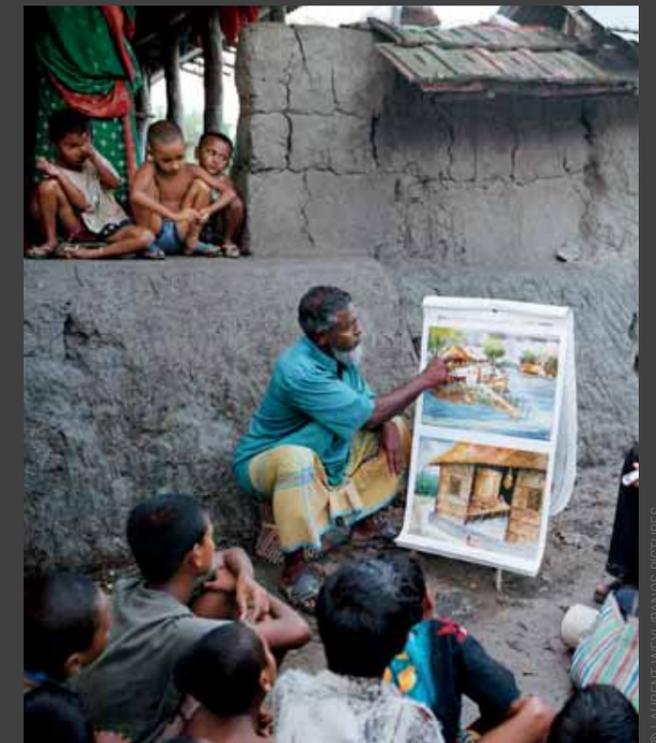
- Develop scalable, flexible and climate-responsive targeting systems for child grants, with investment in transforming livelihoods.
- Establish a social protection system that can both mitigate the impact of climate shocks in advance and make resources available in a timely manner if assistance is required after the fact.
- Research options into the compounding effects of multiple vulnerabilities and deprivations faced by women and children in poor and excluded communities - including those most affected by climate change.

Youth as Agents of Change

- Strengthen youth participation and engagement in climate change issues using existing initiatives (e.g. U-Report, Generation Unlimited, youth parliaments, adolescent clubs and the YouthNet platform) to support the role of young people as agents of positive change.
- Foster partnerships with the private sector to stimulate youth-driven innovation, helping to scale up climate-resilient services and climate adaptation efforts.
- Maximize links between climate change and other issues affecting young people, such as skills development, employability and the green economy.

Communication, Community Engagement and Accountability

- Conduct regular assessments of social norms and practices that increase or mitigate risks related to climate change, and facilitate climate resilience at the community level.
- Build broad national and community-level awareness about - and promote public discourse on - the risks of climate change and the need for action to mitigate those risks.
- Foster resilience and social cohesion among communities, and reinforce climate-responsive behaviours and practices, through multiple trusted channels of communication.
- Promote demand for, and utilization of, climate-resilient or adaptive services, technologies and facilities.
- Mobilize local leaders, and key community influencers to create an enabling environment for climate-responsive behaviour change.
- Establish accountability to affected populations through community engagement and feedback mechanisms addressing the impact of climate change.



Explaining the dangers of climate change and rising water levels to fellow community members.



Villagers on the island of Padma Pakur in the Bay of Bengal are forced to use temporary shelters on an embankment after Cyclone Aila flooded or destroyed many homes in May 2009.

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March 2019

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