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As extreme heat and wildfires hit Europe, experts look to Bangladesh for climate change advice

The South Asian country is on the front line of climate change – yet it leads the way in learning how to live with it

By Peter Yeung IN BARISHAL

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It was the middle of the night when Cyclone Bhola unexpectedly struck Abdul Jalil Mirdha’s village in 1970, in a flash destroying many of the wooden shack houses and killing dozens of his neighbours.

The then 12-year-old's parents tied him and his siblings to a pillar inside to prevent them from washing away as several feet of water poured into their home and a wall collapsed. They clung on until the next day, but not everyone was so lucky.

“In the morning, there were many bodies floating around,” says Mirdha, now 65, standing beside an estuary in Bangladesh's southern Barishal district. “People were crying. Cattle were dead. You cannot imagine the suffering.”

Cyclone Bhola, a Category 3 cyclonic storm that had winds of up to 150 mph, remains the deadliest tropical cyclone ever recorded and one of the world's worst humanitarian disasters in history, killing up to *half a million* people across the Bay of Bengal.

Super cyclones are becoming more frequent due to climate change (they have increased fivefold since 1970) but Bangladesh has learnt to deal with them in a way that other countries – including many in Europe – have not. Despite its low-lying subtropical terrain, the death toll in Bangladesh from disasters has fallen to less than 1 per cent of what it was thanks to a world-leading defence system.



Abdul Jalil Mirdha became an early warning volunteer at the age of 18 – now, he a unit team leader in Barishal, as well as a farmer | CREDIT: Peter Yeung

The South Asian nation's progress in dealing with disasters is in stark contrast with the situation in Europe, which in recent years has seen 180 Germans killed by flash floods, numerous deaths due to unprecedented wildfires in France, Spain and Greece, and an historic heatwave that killed more than 61,000 people across the continent.

European authorities are now scrambling to put disaster defence systems in place – and they are looking to Bangladesh for advice.

“Many countries are trying to learn lessons from the success of Bangladesh,” says Dr Bayes Ahmed, associate professor in risk and disaster science at University College London. “It has proven to be a world class example.”

‘We saw it coming early’

The latest evidence of Bangladesh’s success came on May 14 when Cyclone Mocha, one of the strongest to make landfall this century, struck southeast Bangladesh and southwest Myanmar with winds of up to 160 mph.

Hundreds are said to have died in Myanmar, but in Bangladesh, despite the fact 2.3 million people were exposed to the Category 5 cyclone and 13,000 homes were damaged or destroyed, there were not any reported deaths.

“We saw it coming early,” says Ahmadul Haque, director of the Ministry of Disaster Management and Relief’s Cyclone Preparedness Programme (CPP). “That allowed us to take the necessary action ahead of time.”

The government began pre-cyclone monitoring in late April, according to Mr Haque. By May 4, communities began to receive warnings. As the depression formed on May 9, still 1,000 miles off the coast, the Meteorological Department declared a cyclone. A red alert was signalled on the night of May 12, two days before Mocha struck, and 750,000 people were evacuated into cyclone shelters and makeshift facilities.

“We have a very good early action protocol,” adds Mr Haque. “There are 71 predetermined actions that combine proper anticipation, timely response and community support.”



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| CREDIT: Peter Yeung

If Bangladesh’s defences had not been in place, a cyclone like Mocha “could have killed millions,” according to Dr Ahmed, particularly given its high population density.

With the support of the Bangladesh Red Crescent Society, the government launched its highly-effective early warning system in the aftermath of Cyclone Bhola in 1972, investing in weather forecasting technology, nationwide communication networks, cyclone shelters, and mass training for frontline, community-based volunteers. The shift was from reactive relief-based measures to a proactive system of using four fundamental pillars: preparedness, mitigation, response, and recovery.

“Over those years we have developed by far the best cyclone warning and evacuation system in the world,” says Prof Saleemul Huq, director of the International Centre for Climate Change and Development, a research institute based in Dhaka.

Before efforts began, Bangladesh had only three coastal radars, capable of tracking cyclones 200 miles from the coast. Now it has 256 local weather stations paired with data from the World Meteorological Organization’s 193 member states to help detect and monitor incoming storms.



A ramshackle home in the disaster-prone Barishal region | CREDIT: Peter Yeung

When necessary, warnings are disseminated through TV and radio broadcasts, SMS notifications, and a 24-hour helpline. But crucially, to reach the most remote and vulnerable, an army of more than 76,000 local volunteers take to coastal villages with megaphones and sirens, raise warning flags in key public areas, and even go door-to-door for the most isolated homes. Evacuees are taken to Bangladesh's 15,000 cyclone shelters – up from the 44 that existed in 1970.

As soon as Mirdha turned 18, back in 1976, he became a volunteer. Now he is a unit team leader in Barishal as well as a farmer. “That’s why I started doing this: to save people,” he says. “Many died because we weren’t prepared or aware of the risk.”

Between them, community volunteers are tasked with disseminating initial warnings, accompanying villagers to the nearest shelter, rescuing those in need, providing first aid, and distributing emergency supplies like dry foods during and after the cyclone.

Abdul Hossen, a 33-year-old farmer working with Mirdha, helped carry three elderly people out of their homes when Cyclone Citrun, the last major storm in their area (it avoided Mocha), hit in November 2022. “God will help me if I help others,” he says.



Rice paddy fields in Faridpur | CREDIT: Peter Yeung

Bangladesh's world-leading disaster management could provide important lessons. Last year, 387 natural hazards and disasters were recorded worldwide, resulting in 30,704 deaths and affecting 185 million people, according to the [Emergency Event Database](#).

Hurricane Ian killed 130 people in the US, floods in Pakistan led to 1,739 deaths, an earthquake in Afghanistan resulted in 1,036 fatalities, and Tropical Storm Megi caused the loss of 346 lives in the Philippines. The UN [projects](#) that if no action is taken, there will be 560 medium- or large-scale disasters a year by 2030.

“It's a very serious challenge,” says Prof Huq. “Even for rich countries like the US, when you think about disasters like Hurricane Katrina. We are very happy to share our learnings and knowledge. We know how to protect lives.”

At the UN Climate Change Conference in November 2022, the UN Secretary General António Guterres set out a [plan](#) to protect “everyone on Earth” with an early warning system by 2027.



An army of volunteers take to coastal villages with megaphones and sirens to raise the alarm of an incoming disaster | CREDIT: Peter Yeung

The World Meteorological Organization says nearly half the world's nations do not have an early warning system. A report by the Global Commission on Adaptation estimated spending \$800 million on such systems in developing countries would avoid losses of up to \$16 billion a year.

Yet as Italian health officials warned of a brutal heatwave expected to reach 48C this week and Spain battles with a wildfire on the Canary island of La Palma that has burned 4,600 hectares of land, there are fresh concerns Europe, the fastest-warming continent, is underprepared for climate disaster – just as Bangladesh was in the 1970s.

The consequences will be deadly and costly. Some 68,000 Europeans will be killed by extreme heat each summer by 2030 if more effective adaptation plans are not implemented, according to research published last week by the Barcelona Institute for Global Health. The European Environment Agency estimates disasters caused €13 billion in economic losses a year from 1980 to 2021, with the cost set to rise.

“Early warnings and anticipatory action of extreme weather events associated with this major climate phenomenon are vital to save lives and livelihoods,” says Petteri Taalas, secretary general of the World Meteorological Organization, a UN body.



Salma Akter, a volunteer in Faridpur | CREDIT: Peter Yeung

Thankfully, some progress has been made in future-proofing the continent. In April, the UK tested a system for broadcasting emergency messages about extreme weather for the first time. In May, the Greek capital Athens announced its new chief heat officer, an innovative role aimed at boosting the city's defences against deadly heat. Other cities such as Paris, Milan and Rotterdam have rolled out an extreme heat app.

But experts warn more is needed to prepare Europe for the looming climate-related disasters. Bangladesh, which is now developing warning systems for earthquakes, landslides, fires and flash floods, has shown what difference a smart, sophisticated alert system can make, according to Tamanna Rahman, lead for the international nonprofit Practical Action's Flood Resilience project in Bangladesh.

“This model has been proven to save lives,” says Ms Rahman. “Now we need to properly invest in it.”

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