Bangladesh has saved thousands of lives from a devastating cyclone—here's how

June 8 2020, by Professor Ilan Kelman and Dr Bayes Ahmed

Charipara village is flooded by the sea as Cyclone Amphan destroyed embankments in Kalapara Upazila in Patuakhali District, Bangladesh. Date: 3 June 2020. Credit: Md. Johirul Islam

The Atlantic and Caribbean hurricane season has just begun, with the world worried about the prospect of providing humanitarian relief in the context of a pandemic and lockdowns. But Bangladesh recently experienced one of the most powerful Bay of Bengal cyclones on record and saved thousands of lives through forecasting, warning, and evacuation.

This is in stark contrast to the November 1970 cyclone, which killed around 500,000 people in Bangladesh (then East Pakistan), making it one of the deadliest known storms in human history. Around 11,000 died in a 1985 cyclone, and one in 1991 killed 140,000. More recent strikes, such as Cyclone Sidr in 2007 and Cyclone Alia in 2009, had over 3,400 deaths and about 190 deaths respectively.

All these far exceeded the recent Cyclone Amphan's total of 26 deaths so far. Understanding the generally declining death toll offers lessons on how the rest of the world could prepare better for such events. Part of it is forecasting, warning, and evacuation.

But another part is local action, which we research. Much of this science is participatory, directed by the people who are vulnerable in order to balance and meld local and external ideas and approaches.

From vulnerability to resilience

Cyclone Amphan made landfall in Bangladesh on May 20 2020. It inundated over 4,000 sq km of land and destroyed homes, polders (low-lying areas of land surrounded by dikes or levees), embankments, roads, electricity poles, mobile phone towers, bridges and culverts, with the exact costs still being tallied. Many agricultural fields and fish farms were overwhelmed by the saltwater storm surge.

The low death toll can be largely attributed to Bangladesh's long-term efforts to reduce vulnerabilities, including at the local level, which is always the key in preventing disasters. In 1970, the country had only 42 cyclone shelters, whereas now over 12,000 functionally active cyclone shelters dot the coastline, serving nearly 5 million people.

A diverse system of warning messages tailored to local needs keeps people informed about evacuation, ranging from social media to people

on bicycles with megaphones. Training in school means that the announcements are trusted and the population knows how to react and why.

Bangladesh has invested in constructing numerous polders to reduce the force of storm surges, although water retention has sometimes damaged agriculture and infrastructure. Local leaders, organisations, and authorities collaborate to implement tidal river management and nature-based approaches such as mangroves. This helps to deal with storm surge and rainfall, as well as reduced freshwater due to India's Farakka Barrage, built across the Ganges River to keep the water in India since the 1970s.

We assessed one local programme funded and supported by the British and Swedish Red Cross for implementation by the Bangladesh Red Crescent. This "Vulnerability to Resilience" programme ran between 2013 and 2016 in the coastal villages of Pashurbunia and Nowapara in Kalapara Upazila in Patuakhali district.

Cyclone Amphan affected areas in Shyamnagar Upazila, Satkhira District, Bangladesh. Credit: Taifur Rahman, HMBD Foundation, Bangladesh

This was the first time that people there had been involved in such resilience-building work. They installed flood-resistant tubewells, raised latrines above expected flood levels, trained for improved hygiene and first aid, distributed safety equipment, improved local early warning and evacuation systems, and were trained as local volunteers to continue these activities.

Diverse and alternative livelihood opportunities were also promoted. Household-level businesses and shops were encouraged, alongside local markets for the products.

This included people growing and selling garden vegetables and rice, producing crafts through quilting and sewing, rearing cattle for milk and beef, and investing in ducks, chickens, and aquaculture for fish. If any one of these livelihoods is interrupted or ruined, then people would still have options for earning income.

These initiatives are clearly not about cyclones only and move far beyond forecasting, warning, and evacuation. They improve livelihoods, living conditions, community interaction, health, and safety irrespective of a storm. Our calculations immediately after the programme demonstrated that every dollar invested in the programme produced a quick payback of almost five times that amount through enhanced income and local activities.

Local success

The real test, though, remains what happens during a hazard. Three weeks after the programme ended, Cyclone Roanu ripped through the south coast of Bangladesh on May 21, 2016. Pashurbunia and Nowapara reported successful warning and evacuation, no casualties, livelihoods with limited interruption, and a water supply and latrines that functioned afterwards.

Similar success is now repeated with Amphan. Despite the cyclone's devastation, the people are alive and are returning home to rebuild. In Pashurbunia and Nowapara, seven kilometres of polder length were destroyed while the villages and agricultural lands were inundated.

The local population is repairing the damaged polders, houses, and latrines while restoring the drinking water supply and resuming their livelihoods. This is mainly through self-help, without much external assistance so far. It is not easy, but much better than before.

It required nearly 50 years from the 1970 calamity to achieve this state of disaster risk reduction and readiness. Plenty of work remains since Bangladesh faces many other hazards, including human-caused climate change, sea-level rise, earthquakes, and landslides. The country is also coping with one of the largest current refugee crises following genocide against the Rohingya.

Any cyclone could change the fatality trend. But Bangladesh's efforts to date, from the national to the local level, show what any location experiencing tropical cyclones could and should do.

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