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## World - AP Asia

# Asians Invent Ways to Survive Disasters



30 minutes ago



By NEELESH MISRA, Associated Press Writer

NEW DELHI - Home to half of the world's natural disasters and three-quarters of resulting deaths, Asia is devising homegrown methods to fight the fury of its ancient friend and enemy — water.



AP Photo

From India to the Philippines, ingenious devices such as storm shelters on stilts, mangrove forests that slow cyclones and huts anchored by car tires have sprung up in poor communities that cannot afford expensive technology to protect themselves from disasters such as Sunday's tsunami.



AP Photo

When the giant wall of water lashed Asian shorelines, one solid shield was helping save Govindan Raghu's life in India's southern Tamil Nadu state.

[Slideshow: Asian Tsunami Disaster](#)

It was a mile-long barrier — a series of giant triangular structures placed side by side on the coast and extending as far as 300 yards into the sea. The structures, made of loosely packed boulders, are called groynes. The valleys formed by the groynes' sloping surfaces help channel the water churned by cyclones.

They also worked to control the tsunami waves, and as a result, no one was killed in Ennore villages behind the stretch of land protected by the groynes.

"The wall saved my life, my family. These boulders saved us. Otherwise we would have been in a big problem," Raghu, a 38-year-old mechanic, told The Associated Press by telephone from his home 330 feet from the sea. "You go one kilometer from the wall this side, or that side, and hundreds and hundreds have died."

Neighboring Bangladesh was almost untouched by Sunday's tsunami.

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But Bangladesh has learned lessons from a 1991 cyclone that killed 138,000 people.

Since then, about 2,000 multistory cyclone shelters on stilts have been built along the coast for villagers, said Golam Rabbani, an official at the Red Crescent Society's Disaster Management Center in southeastern Chittagong city.

The society's 33,000 volunteers meet once a week to discuss disaster preparedness, and many are equipped with radio and megaphone sets to warn people of impending disasters such as cyclones. In a 1997 cyclone, 600,000 people took refuge in the shelters, minimizing casualties.

In Vietnam, authorities have launched a 20-year "Living with Floods" plan for the residents of the Mekong River delta. That has included the construction of large- and medium-sized reservoirs, dikes, the consolidation of the canal system, and building evacuation havens and storm shelters.

Meanwhile, vast mangrove plantations are also being grown in Can Gio in Vietnam's Mekong delta, in Thailand's Ranong area, in Ulugan Bay in the Philippines and India's southern Andhra Pradesh state. The mangroves help filter the fury of the cyclone's winds and water. Andhra Pradesh has also created casuarina plantations along the coast that have proven effective at weakening the force of winds.

In the Philippines and Andhra Pradesh, automobile tires are placed on top of round-roofed shoreline huts, and strung to hooks on the ground with long ropes. The tires work to anchor huts during cyclones.

"These interventions are working. They often make the difference between life and death," said N. M. Prusty, director of emergency and rehabilitation at the India office of CARE, the international relief organization. "If the community process is adopted, if it is owned by the people, it becomes far more effective."

However, disaster management officials are mindful that phenomena such as Sunday's tsunami don't come with the same advance notice as cyclones, which are usually known 48 hours before they make landfall. Tsunamis can be spotted at sea, but a network of sophisticated sensors is required, a system India doesn't yet have.

"The tsunami is a new phenomenon in India. It is the new reality. Now perhaps we have to change our plan accordingly to handle the new reality," said Special Relier Commissioner R. Balakrishnan of Orissa state, which was hit by a super cyclone in 1999 that killed 10,000 people.



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