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## TSUNAMI PREPAREDNESS

The wall that Taro built

After two devastating tidal waves, a small town decided to act

By Winston Ross

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**EDITOR'S NOTE:** *Reporter Winston Ross traveled to Japan in August and September as a World Affairs fellow, sponsored by the International Center for Journalists. This is the second of three parts on how Japan prepares for tsunamis.*

**TARO-CHO, JAPAN** - Tabata Yoshi was 8 years old when a tsunami took her mother's life. That was 72 years ago. She says she still remembers every detail.

"It was dark," she said, pouring green tea in a living room walled with rice mats. "I was sleeping in the back room with my grandmother. I was wearing only a kimono."

Then the earth shook with such force that Yoshi thought that her house would fall. A relative came by, and assured the family that there would be no tsunami. But her grandfather did not believe it.

"Let's run away," he told the girl.

It was 3 a.m. on March 3, 1933. The 30-foot-high Showa tsunami was minutes from rushing into the narrow opening of a small bay that borders Taro-cho, in northern Japan. It was so dark that the 900 people who were killed by the wave never saw it coming.

They could only hear its roar.

Kato Shuichi was three weeks from graduating from primary school, asleep in his bed, when he felt the ground rumble.

"I got up and went outside," he said. "The power was cut, but after some time, the lights came back on. I felt relieved. Maybe the earthquake is over. It was very cold outside, so I went back in."

What happened next led to the construction of the largest seawall in the world, and a system of disaster preparedness unrivaled even in a country that geologists and emergency managers everywhere hail as a shining example of how to prepare for a tsunami.

But why here, in a town of fewer than 3,000 residents? Why does one of Japan's smallest, most rural cities stand as the country's model of readiness?

In some ways, the answer is simple: Villages such as Taro-cho have been hit the hardest by past tsunamis. The wall was built with little or no debate about the aesthetics of concrete or the science of its true effectiveness against the massive waves. There was an urgent need to "do something," and a natural instinct to dominate nature, rather than simply bow to its wrath and rebuild elsewhere.

But the answer also lies in the indelible tales of Yoshi and Shuichi, and the people who banded together with them when disaster struck, resolved never to let it devastate their town again.

This is the story of Taro-cho.

### **"Like a cannon"**

Huddled in her simple home, Yoshi heard a noise, "a great sound, like a cannon going off."

She and her grandfather ran toward Mount Akanuma. "But there were so many people. I found myself on the ground, with people jumping over me. I prayed 'Manzaraku, manzaraku,' a Buddhist chant to protect myself. Eventually we were able to get to Hatake, a field on top of a hill. Families called out the names of their relatives. I said 'Oji-san! Oba-san!' I could hear the sound of the wave, and buildings were being destroyed."

Yoshi's mother was struck by the wave, her legs crushed, and then burned in a fire. From the hilltop, Yoshi watched more blazes start at the mouth of the bay. She could hear the voices of people crying for help. She waited there until dawn.

When the sun rose over the ocean again, Yoshi looked across town. All but the temple, the shrine and the school were destroyed. The volunteer fire corps arrived, carrying casualties.

"I could hear people moaning," she said. "I saw people sitting on the ground, weeping. I put my hand on something black. I didn't know what it was. My grandmother said, 'That's someone who's been burned. Take your hand off of it.' "

The family loaded Yoshi's mother onto a stretcher. They carried her nine miles across the mountains, on foot, to the closest hospital in Miyako. The trip took half the day. Her grandfather injured his back, carrying his daughter. He never walked again. Her mother died at the hospital.

"I held back my tears," Yoshi said. "I felt very angry. I shouted at the sea, 'How stupid! How stupid!' many times."

### **"Everything was destroyed"**

Shuichi went back inside after the earthquake stopped, and had just gone back to sleep on his futon when he heard a loud crash. Older villagers had warned him what this meant.

"I knew a wave was going to come. I packed up my younger brother and headed for high ground," he said.

Thick brush impeded their climb. Eventually, the brothers made it to safety - just in time to hear the first 30-foot wave meet land.

"It was a good thing I was able to escape without even getting my boots wet," Shuichi said. "But on top of the mountain, I had no idea what had happened in town. Everything was destroyed. I had nowhere to go."

When the water pulled back, Shuichi climbed down from the hill and went to the school. There was no food. The fuel that villagers had stored in case of emergency was useless, full of insects.

His grandfather was dead. "He had been sick for years. He couldn't escape."

### **After 23 years, a wall**

In the days and weeks that followed, the villagers of Taro-cho-cho pondered leaving forever. Some older residents had lived through two massive tsunamis.

The first was in 1896, known as the Meiji tsunami. It followed a magnitude 7.6 earthquake. But it only measured a 2 on Japan's Seismic Intensity Scale. Villagers didn't feel it. All they heard were loud noises on the ocean, moments before the water rushed ashore. Taken by surprise, 22,000 people along the Sanriku coast perished - 1,900 in Taro-cho alone. Only three dozen residents survived.

After Meiji, villagers did little to prepare for the next threat, said Masayuki Yamazaki, senior staff member of the crisis management section for the merged cities of Miyako and Taro-cho. Educational standards in Japan were quite low, he said, and what little schooling there was focused on the war effort. There was talk of building a wall, even some money collected and divided among the villagers. But the people spent it on more pressing needs.

When the Showa tsunami hit Taro-cho in 1933, attitudes changed. The town split into two camps. Most villagers argued that they should move to Manchuria, which was occupied by Japan in 1931 and where jobs were plentiful for Japanese citizens. "With so many disasters, people were fed up," Yamazaki said.

Others decided to stay. Local officials lobbied the prefectural and federal government for funds to build a seawall. The government refused, noting that experts had warned the villagers to build their homes on high ground.

That left Taro-cho to its own devices. A national newspaper, the Asahi Shimbun, offered to spearhead a fundraising campaign for the wall.

It took 23 years to build the first section, using donated land and money. Today it is 10 feet wide on top, 26 feet high, 32 feet wide on the bottom and a mile and a half long. Locals call it "Japan's great wall of China."

### **No promise of protection**

Taro-cho's great wall is an impressive, if ugly, sight.

Sloping in four directions, the drab concrete structure blocks any view of the serene bayfront - unless you're walking along the top of it. It gives the fishing village a warlike feel.

"The local people don't complain about the wall," says Kenichi Yoshida, senior staff member with the state's disaster prevention office. "But tourists sometimes do."

Yamazaki does not promise that the wall will protect these people - though an alarming

number of villagers seem to believe they need not heed warnings because of it. Even at 26 feet high, the structure can only slow down a big tsunami, which scientists now know can reach 100 feet in height. It takes three people to close each of the wall's 18 gates, open year-round to allow for passage of traffic. And a third of the town's buildings lie in front of it, because open land is at a premium in Japan. Still, a seawall this big will stop all but the fiercest tsunamis, which happen only once every 100 years, on average. It remains a testament to Taro-cho's refusal to let killer waves drive people from their homes. And it is only the visual element of a carefully designed culture of preparedness.

### **A thorough preparation plan**

The central tenet of Taro-cho's tsunami strategy is how it's integrated into the common routines of residents. Shortly after the 1933 event, a town committee redesigned the streets into a grid system and cut off the corners of sidewalks, so that people could navigate them more freely in an emergency.

Sixteen evacuation routes, lighted by solar-powered beacons immune to outages, follow commonly used roads and pathways. Along each route, small shelters store emergency gear.

Sirens throughout town rotate, so they can be heard in all directions. Cameras that spin 150 degrees feed live images of water levels to City Hall, where a computer can dispatch updates every 10 minutes to pre-registered cell phones. Even Taro-cho's oldest residents have cell phones, because the government broadcasts fishing conditions on the networks.

"That way, when they need to use the system for emergencies, people will understand it," Yamazaki said. "It's very important that these emergency response strategies are built into people's everyday lives."

Radio terminals in town bark emergency information, and can be activated remotely by the Japan Meteorological Agency, which issues tsunami warnings. The town's central computers also can be manipulated remotely to alert volunteer firefighters via their pagers, rather than the agency having to send a warning that the city has to field and distribute. Each year, there are citywide evacuation drills, although participation is declining. The prefectural government is in talks with a tsunami expert from Hokkaido, Japan's northernmost island, to develop an education curriculum for students.

And for a few more years at least, Taro-cho is protected by the best measure of all: the spellbinding stories of tsunami, as told by the people who survived them. Yoshi has drawn pictures of the event - "bad pictures," she calls them - to show her grandchildren what the tsunami was really like. She sings a sweet song, written by villagers shortly after the event, to uplift their spirits:

*In the face of tsunami,*

*don't give up,*

*look forward,*

*Carry on.*

*Winston Ross can be reached at (541) 902-9030 or [rgcoast@oregonfast.net](mailto:rgcoast@oregonfast.net).*

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