

What we can learn from Japan's tsunami experiences

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In 2011, a catastrophic tsunami ravaged the north-east coast of Japan, causing devastating damage to the prefectures of Iwate, Miyagi and Fukushima. Len Morris, born and raised in Miyagi Prefecture, writes that we can learn a lot from Japan's disaster education practices to reduce the risks to people.

The north-east of Japan is exposed to tsunami with earliest recordings dating from 869 CE. Communities in the region have localised knowledge and use teaching practices to address the threat of tsunamis. *Tsunami tendenko*, for example, is knowledge commonly found in northern Miyagi Prefecture and southern Iwate Prefecture. The phrase roughly translates to 'when the tsunami comes, run on your own'. The intention is to encourage people to evacuate swiftly and, by doing so, warn the rest of the community of an impending tsunami.

Some communities in the region managed to significantly reduce the damage associated with the event through education and community engagement. This highlights the importance of disaster education to reduce the risks associated with tsunami as well as other disaster events. However, the tsunami in 2011 tested the effectiveness of this regional knowledge.

Following the tsunami, the Japanese government surveyed 260 survivors to identify what motivated them to evacuate. The survivors identified local knowledge and teachings, including *tsunami tendenko*, as one of the motivations for evacuation.

In Shirahama Ward of Ōfunato City, Iwate Prefecture, a local primary school hosted a play based on the community's experience of tsunami before 2011. The aim was to spread the teaching of *tsunami tendenko* to the rest of the community. Community-led efforts, including the school play, resulted in the Ward achieving a 100 per cent survival rate.

The 2011 tsunami also demonstrated the limitations of local knowledge and experience in disaster preparedness. In the Japanese government survey, some of the survivors noted that some of their neighbours who survived an earlier tsunami in 1960 did not evacuate during the 2011 tsunami because of their survival in 1960 and were claimed by the tsunami.

Knowledge such as *tsunami tendenko* may not always apply to the whole of the community. It does not, for example, help those who cannot evacuate without assistance. As at 2013, the Japanese government had

recorded that 55 per cent of confirmed victims were people aged above 60 years. In Miyako City, Iwate Prefecture, 1 per cent of people with a disability died in the tsunami. Approximately three-quarters of these people had physical disabilities.

Kamaishi City in Iwate Prefecture successfully implemented local knowledge into its localised tsunami education programs. The Kamaishi City Board of Education developed a tsunami education curriculum for students from Year 1 to Year 9. The curriculum included videos from the 2004 Indian Ocean Tsunami, teaching of *tsunami tendenko* and encourages older students to consider how they can help others during a tsunami. This program proved highly effective during the 2011 tsunami as students actively evacuated and older students led younger students to safety. This, and other city programs, saved many people and the city achieved a survival rate for children of 99.8 per cent.

The importance of the Kamaishi City education program can be contrasted with the preparedness of Ōkawa Primary School. Prior to the tsunami, Ōkawa City did not conduct tsunami evacuation drills. The lack of preparation resulted in the primary school relying on and following its evacuation manual, which instructed teachers and students to gather on the school oval and not evacuate immediately. When the threat of the tsunami became imminent, the majority of the students evacuated to a bridge near the school rather than a mountain behind it, resulting in 74 out of 108 students perishing in the tsunami.

Drawing on local knowledge developed over long periods and using education programs to raise awareness of risks and how to act in emergency situations are important lessons for any community and their emergency response organisations. Experience alone will not guarantee the safety of a community during an emergency. Identifying and empowering potentially vulnerable groups, such as children, the elderly and homeless and those with a disability assist them to be better prepared and encourage those who can to help their communities through their networks.