

Humanitarian Innovation Hackathon



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EDUCATION



Ensure inclusive
and equitable
quality education

Executive Summary

Almost every school in Tonga was affected by the Hunga Tonga–Hunga Ha’apai submarine volcano eruption in some way, ranging from damage to infrastructure, to educational materials being destroyed, and ash coverage preventing schools from being opened. Damage to transport infrastructure also prevented students from safely accessing their school. Tropical Cyclone Gita in 2018 also destroyed a large number of schools, with many schools only just reopening after subsequent rebuilding efforts. The eruption severed the undersea internet cables that connect Tonga’s islands domestically and to the outside world.

Considering the effects that recurring natural disasters have on educational infrastructure and the effect on children, with the inherent physical barriers to education that exist in a small archipelago nation, resilient education-delivery systems that prevent significant loss of education in children during disasters are essential for mitigating the long-term effect that these disasters have on the youth of Tonga.

Hackathon Challenge C

How might we reduce disruption to schooling in Tonga following natural disaster events such as the recent Hunga Tonga–Hunga Ha’apai Eruption.

Persona

Toakase Latu is a 10-year-old girl living on ‘Eua Island. Toakase’s family live on the south of the Island, where their primary source of income is from livestock farming. She helps out on the weekends around the farm when she is not at school.

In the recent Hunga Tonga–Hunga Ha’apai Eruption and resultant tsunami, her primary school was destroyed. Her route to school was also destroyed, meaning access outside of her family home was limited.

Along with the destruction to schools and road infrastructure, there was also significant damage to electricity poles on the island meaning her family had no access to power or the internet for extended periods of time.

Her school had only just been rebuilt and upgraded with aid of multiple international donations after the 2018 category four Cyclone Gita. The impact of the 220 kilometre an hour winds was massive, not only affecting schools but homes, churches, and farms. The experience of Toakase after this major cyclone event was not isolated, it has been reported 109 of Tonga’s 150 schools were significantly affected or completely destroyed.

Amounting to approximately 23,000 students affected (reliefweb, 2020).

Toakase’s disruption to schooling as a direct result of recurrent natural disasters has led to her falling behind. She has had to help her family rebuild their farm and home multiple times, with limited options to access education without internet or means of travelling easily to other islands.



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Resources

Clear ash schools wrecked by Tonga volcano
<https://reliefweb.int/report/tonga/parents-and-teachers-race-clear-ash-schools-wrecked-tonga-volcano>

Plan International supports children, young people and communities
<https://reliefweb.int/report/tonga/plan-international-supports-children-young-people-and-communities-aftermath-tonga>

Red Cross tackles triple disaster – COVID-19, volcanic fallout, tsunami
<https://reliefweb.int/report/tonga/tonga-red-cross-tackles-triple-disaster-covid-19-volcanic-fallout-tsunami>

Stronger schools and Brighter futures in Tonga
<https://www.worldbank.org/en/news/feature/2020/10/12/stronger-schools-and-brighter-futures-in-tonga>

Save the Children Response
<https://www.savethechildren.org.au/our-stories/triple-crisis-in-tonga>

HRMI Tracker:
<https://rightstracker.org/en/country/TON>



Find more at bit.ly/hack-live



Primary Layer of disruption: Infrastructure damage and lack of internet access

The primary disruptions to education were felt immediately, with the severing of the undersea internet cables disabling internet access and other communications throughout Tonga, and the destruction or severe ash covering of many schools across the nation. These two factors combined to prevent students from accessing in person or online education for many weeks. While schools were on holiday when the eruption hit, community volunteers were required to help clean up schools as the school term was delayed due to the disaster.

Multimodal solutions that do not rely on internet access are favourable when attempting to prevent disruptions to schooling in a nation such as Tonga.

2018 Cyclone Gita like the 2022 eruption lead to significant infrastructure damage, "A rapid damage assessment conducted by Ministry of Education and Training (MOET) officers found direct damage to approximately 60 percent of early childhood education centres, 75 percent of primary schools, 88 percent of secondary schools, and 56 percent of tertiary institutes across Tongatapu and 'Eua. A total of 109 of 150 schools, with an estimated 23,000 students at all levels of education, were affected. In the affected areas, 22 percent of the school building stock was damaged or destroyed" (The Government Of The Kingdom Of Tonga, 2018). Some reconstruction efforts had only recently been completed prior to the 2022 eruption and tsunami.

Secondary layer of disruption

While the primary disruption to education was caused by the closure of schools and lack of internet access, there are numerous other barriers to continuous education in the region that should be considered and if possible incorporated into solutions. Some of these secondary barriers include:

Psychological effects of the disaster: The Red Cross estimates that 36,000 tongan youth have been affected by the disaster in some way, and a large component of this is the effect on mental health that the disaster has had on children and youth. Many children are fearful and have lasting mental health effects from the eruption, and this will have long-term effects on learning outcomes across the region.

Exacerbation of pre-existing barriers: While Tonga has extremely commendable numeracy and literacy rates, and enrollment of students under 14 years old (14yo) is strong, this trend drops away somewhat after 14yo as education is not free after 14yo. This disaster will only serve to exacerbate existing divides in education as families are forced to choose between paying for education and other costs in the rebuilding phase of the disaster.

COVID-19: Tonga went into a COVID 14-day lockdown one month after the volcano eruption, compounding the disaster and furthering the disruption to education being felt by the youth of Tonga. While this not only prevents students from attending school, a large number of people are also currently living in emergency shelters where the stability required to focus and achieve strong learning outcomes is almost impossible.

