

A.30 Tonga - 2010 - Tsunami

Case study:

Country:

Tonga

Disaster:

Tsunami
(known as the Samoa Tsunami)

Disaster date:

September 30th 2009

No. of houses damaged:

79 destroyed, 30 with major damage

No. of people affected / displaced:

465

Project target population:

74 households

Occupancy rate on handover:

Estimated 90% at handover

Shelter size:

18m²

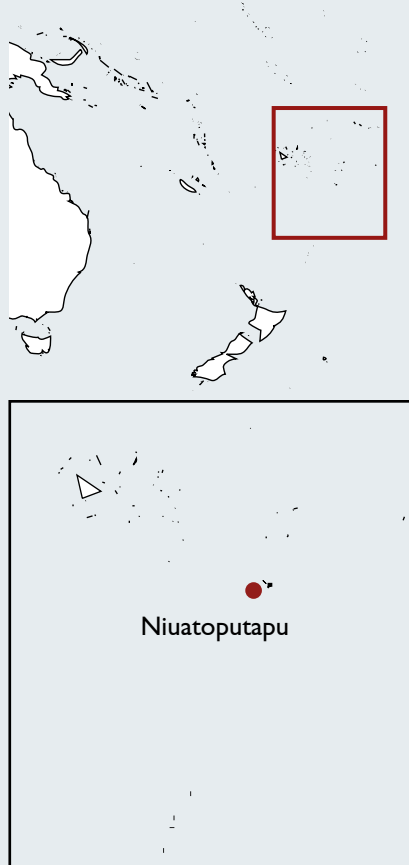
2.4 m tall

Materials Cost per shelter:

4,350 USD

Project cost per shelter:

8,900 USD



Project timeline



Project description

This project provided cyclone resistant transitional shelter, water supply and sanitation to 74 families who lost their homes and elected to remain on Niuatoputapu, while waiting for assistance to re-build permanent housing. The tsunami had destroyed the houses of more than half the island's population. The shelter materials and construction teams were imported from an island 600km away.

Strengths and weaknesses

- ✓ The project successfully addressed the significant needs of a remote population. For the first months after the disaster no other non-government organisation worked on Niuatoputapu.
- ✓ Interviews with beneficiaries as part of a project evaluation indicated the shelter had met, and in many cases exceeded, their expectations.
- ✓ Excellent logistical organisation with the support of a well-established local implementing partner helped to keep the project on time.
- ✓ Rainwater harvesting was included with the shelters to supplement drinking water sources.
- ✗ A formal handover of the shelters to beneficiaries did not take place during the project leading to some uncertainty about ownership.

- ✗ Community consultation could have been stronger at critical points of the process of shelter design and latrine construction.
- ✗ Construction of latrines was not completed by a number of households in one village. Follow up was required to understand the issues and ensure completion where feasible.
- Initial assistance was requested in water supply only but the deployment of an engineer quickly identified other needs including shelter.
- As this project had a low number of beneficiaries, and high costs, the project team could not be large. It was difficult to provide a range of skills with the limited number of personnel.



“The house is important to me, especially the water tank as this is my only source of drinking water. With this house I can manage ok.”

**Maka Holi
Project beneficiary**

**Over half of the people on the island lost their houses.
Photo: Kathleen Walsh**

Before the tsunami

Niuatoputapu lies at the northern edge of the Kingdom of Tonga and although small, is the main island among the Niua group. Niuatoputapu, occupied by approximately 850 people, is extremely remote and highly vulnerable to natural hazards. It has very limited transport and communications, and just three settlements on its northern shore.

After the tsunami

An earthquake measuring 8.3 on the Richter scale, 300 Km north east of Niuatoputapu caused three tsunami waves up to six metres in height. Nine lives were claimed and four people were left critically injured.

The townships of Hihifo and Falehau were severely damaged, and all government houses and offices in Hihifo were totally destroyed. All essential services including the local hospital, airport, communication offices, ground and surface water were seriously damaged.

The initial assessment indicated that 79 homes were destroyed and 30 had major damage. The total number of people affected at that point was 465. These families were initially housed in tents, often on the land of other families, or shared housing.

Implementation

The locations of houses was discussed with each family separately to ensure that the land was either their own or that they had consent to locate a house and toilet on the site. Each household signed an agreement that this was the case. For the land closest to the sea in the town of Hihifo, there were strong government sensitivities to re-constructing housing in this area, and finally it was decided not to build on this land.

As there was a lack of resources on Niuatoputapu, a contract for prefabrication of shelters, toilets and water tanks was offered to a company based in the capital Nuku'alofa, six hundred kilometres away. They were responsible for shipping materials to the dock on

the island with the project manager arranging the shipping.

A contract team of carpenters was set up on the island with a local overseer. The local implementing partner had a representative overseeing the process, supported by the project manager. This contract team accessed materials from the depot of the implementing partner via consultation with the representative. They constructed the footings in phases, leaving time for the concrete to cure, and then in stages, constructed the sub-frames and erected the shelters. There were up to three teams working on the island at one time.

The project manager, local representative and the contractor all had some responsibility for monitoring progress and quality.

To encourage householders to contribute, the toilet superstructure was only provided once pits had been dug by households. Water tanks were only provided once platforms had been constructed. This was only partly successful.

“If the transitional house hadn’t been given then we would still be in the tent and the small shack. Without the house we wouldn’t have water and would have to find it from somewhere else.”

Neomai Osika
Project beneficiary



The project illustrated the challenges of running small projects on remote islands with a small project team.
Photo: Paul Davenport

A government building assessor resident on the island provided both interim and final certification for the buildings based on government standards for cyclone resistant shelter.

Selection of beneficiaries

Beneficiaries were those families identified by the local implementing partner in an initial damage assessment. To qualify for a shelter, their home and assets had to have been completely destroyed or lost in the tsunami.

Technical solutions

The technical and resource capacity of Niuatoputapu is very limited. Therefore it was decided to fabricate transitional shelter kits in the capital. These could then be flat packed and shipped to the island. The erection of the prefabricated elements was undertaken by local trades people supported by the householders where appropriate.

Shelters were designed to be cyclone resistant and were certified

to be of standard according to Tongan building regulations by the government building inspector on Niuatoputapu.

The design of the shelters ensured they were simple enough to be built in a remote location and that they could be dismantled and re-built as the government was offering land further from the coast to encourage people to move for their future safety.



The project built shelters using contracted teams from Niuatoputapu, 600 km away.
Photo: Kathleen Walsh