

## B.3 India - Gujarat - 2001 - Earthquake

### Case study: Non-food items and shelters

#### Project type:

Non-food item distribution  
Self-build transitional shelters  
Technical support

#### Disaster:

Gujarat earthquake, January 2001

#### No. of houses damaged:

180,536 completely destroyed  
913,297 partially damaged

#### Project target population:

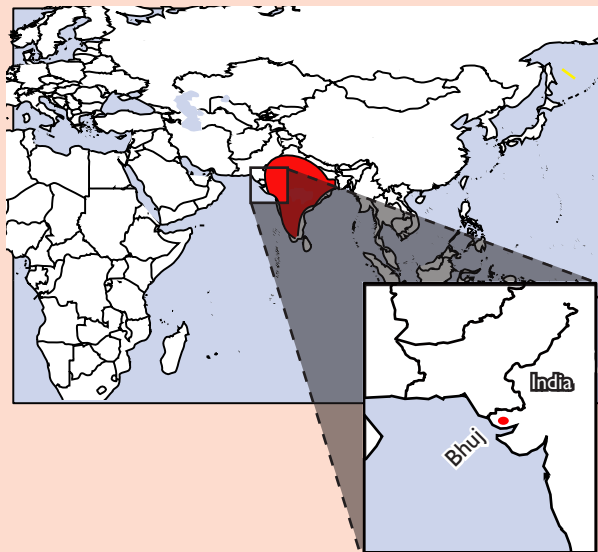
Over 23,000 families

#### Occupancy rate on handover:

Unknown

#### Shelter size

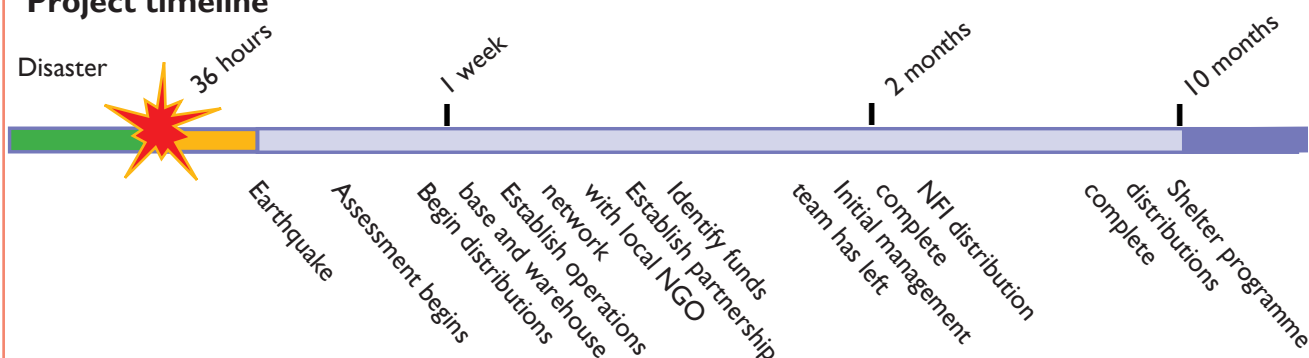
Approximately 4m x 2½m



#### Summary

An international NGO worked in partnership with a network of 22 local NGOs to rapidly implement a non-food items distribution programme followed by a transitional shelter programme that built over 27,000 shelters. By working with local organisations, existing networks and local knowledge was used to effectively deliver materials and help construct shelters on a very large scale. The speed and scale of the programme, combined with the different approaches of the international and the national organisation, led to a lack of the paperwork required by donors.

#### Project timeline



#### Strengths and weaknesses

X An effective and very large-scale shelter programme was implemented within ten months.  
X The international organisation was able to work with a strong network of local organisations to support large numbers of families with seismic-resistant designs.  
X Many of the materials distributed to build shelters could be reused at a later stage.  
W Systems that could create an auditable trail of paperwork

were not set up due to the rapid nature of the response and differing organisational cultures.

W There was a high turnover of programme management staff, which led to a loss of institutional knowledge.

W The local network of NGOs that partnered in the programme was approached by multiple donors, causing it to become operationally stretched.

Note: This case study drew on *Learning by doing*, by Zahid Hussein, 2001.



Photo: David Sanderson

Damage following the earthquake at Gujarat that completely destroyed over 180,000 houses. In the first weeks after the earthquake the organisation distributed non-food items through partners. This was followed by a transitional shelter programme.

### After the earthquake

The earthquake struck the State of Gujarat on 26 January 2001, and particularly affected the district of Kutch and its neighbouring areas.

News of the earthquake spread rapidly through the international media. Local communities, the Central and State governments, the defense forces, donors, and international and national NGOs all responded to the emergency.

Within one week, a network of 22 local organisations, including developmentally minded architects, had formed a partnership agreement with an international organisation. Members of this local network had been working on low-cost construction technologies prior to the earthquake and were able to act as an effective coordination mechanism. During the earthquake their focus was on:

- interim, transitional shelter (it would not be possible to build permanent shelter to meet the needs of all affected families within a year and tents were not durable enough to fill the gap);
- examples of low-cost and safe public buildings.

In the first weeks of the response the focus was on the distribution of non-food items.

### Selection of beneficiaries

The initial assessment was rapid and defined some crucial needs. However, it relied on individual competence and was not standardised.

The criteria and procedures for the selection of beneficiaries for relief distribution in the communities were not always clearly defined. They were commonly left to the subjective interpretation of the village-level workers and the communities. Although this allowed a degree of flexibility, it is likely

to have introduced some inclusion (as well as exclusion) errors.

### Technical solutions

A low-cost shelter design was developed using low 1m walls and a bamboo-framed and grass-thatched roof. With time it was recognised that there was a need to preserve the grass for animal fodder, so the roofing material was replaced with locally produced Mangalore clay tiles.

The dimensions of the shelters built were approximately 4m x 2½m. Although this provided a covered area of only 10m<sup>2</sup> for a family, these dimensions were carefully selected to focus on earthquake safety. A larger span would have required significantly more materials to ensure the same level of safety.

The distribution of construction materials was phased to ensure that buildings were built safely:

- First, a shallow foundation was built. When this was complete the cement for the walls was distributed.
- Walls then had to be built. When these were complete, walls and roofing materials were distributed.

After the initial shelters were built, issues were found with the roofing and an upgrade programme was required. This involved distributing four pieces of bamboo (1½m long) to brace the roof.

The distributions of materials were accompanied by the training of local masons and carpenters, to mobilise the communities and raise their awareness of seismic-resistant construction. A significant amount of work was required to ensure that people correctly braced their shelters and to explain that once braced, the buildings would be stronger and safer.

**‘What the international NGO saw as normal professional procedures, the local organisation saw as meaningless bureaucracy. The international NGO had bent its own rules in favour of the local NGO to such an extent that our financial consultant became highly concerned... But ultimately there is no doubt that the international NGO's real achievement in the Gujarat response was its link with local NGOs and the temporary housing project’.**  
– Evaluation by the Disasters Emergency Committee (the donor)

### Working with partners

The way in which the international NGO was able to work in partnership with a strong local network of NGOs was one of the strengths of this project. However, the relationship at times became strained, in part due to the different working methods and the speed at which the working relationship was set up.

The international NGO had internal rules and donor requirements for paperwork and processes for accountability. The local organisations saw much of this as overly bureaucratic. These organisational differences were compounded by high staff turnover.

Many of the procedures, logistical and financial controls were loosened. However, the shelter programme was very effective according to both internal and external evaluations.



Photo: David Sanderson

By working through a network of local NGOs, it was possible to mobilise large numbers of people.



Photo: Chris Cattaway

These school buildings were adapted from the transitional shelters. The low walls reduce the risk of masonry falling on occupants during future earthquakes.

**‘Generally, the concept of working through a local NGO partner is better than working directly, particularly in relief distribution. INGOs have less detailed knowledge about the affected people’s needs. On the other hand, local NGOs may lack the skills to meet donors’ requirements. Collaboration between INGOs and local NGOs, thus, is mutually benefiting’.**

*- Project evaluation report*

#### Implementation and logistics

Within the first week, a base camp and warehouse were set up in Bhuj and a liaison office was established in Ahmedabad. Tents, plastic sheeting, some blankets, jerry cans, children’s clothes and WHO medical kits were procured from outside India. They were brought to Bhuj by four chartered flights. Blankets and some tents were procured from Bangalore and Kanpur and were brought to the Bhuj warehouse through transport agencies.

Relief materials were delivered to the network of NGOs. Its members collected the relief materials at the warehouse and transported them to the villages for distribution.

Construction materials were procured through the local NGOs’ procurement team. Two entire trains were chartered to bring in 265,000 bamboo poles from Assam. As the Bhuj train station did not have freight handling capacity, the station had to be closed for 24 hours while the trains were unloaded. It took 120 trucks to transport the materials onwards to temporary stores in the village from where they could be distributed.

The remaining bamboo was procured from Nagpur and brought to Bhuj through trucking companies.

Roof tiles are traditionally produced by small-scale suppliers. In order to purchase the 12 million required, it was necessary to send a finance officer to pay multiple roadside suppliers.

Wooden purlins, rafters and patties were procured from the timber merchants and transported by truck, in some cases directly from the sawmills.

Record keeping for procurement, supplies and distribution was not very good. This was the result of the complex and very rapid procurement of multiple items. In addition, the multiple partner organisations had different working practices. The resulting programme created difficulties for the auditors, but was effective in providing shelter for a large number of people.

#### Materials list

Relief items distributed in 259 villages until 31 March:

Relief items	Quantity
Tent	847
Plastic sheet	8,835
Blankets	127,515
Bucket	3,728
Jerry can	1,328
Children's clothes	7,237

Total distribution of construction materials from 1 May to 15 October 2001:

Relief items	Quantity
Cement	72,684
Bamboo	422,217
Woven mats	149,878
Wooden spacers	9,689,295
Wooden rafter	178,401
Wooden purlin	39,250
Roof tile	12,114,483
Roof ridge	325,600
Iron wire	52,22
Mild steel rod	97,532