PHILIPPINES

Salvage to Build Back Better

HUMANITARIAN RESPONSE CASE STUDY 25

CRS
CATHOLIC RELIEF SERVICES

PROJECT DESCRIPTION

Country: The Philippines

Project location: Compostela Valley and Davao Oriental provinces, Mindanao

Disaster: Typhoon Bopha (Pablo)

Disaster date: December 4th, 2012

Damage: 216,817 houses damaged (89,666 destroyed and 127,151 partially damaged), of which 58% in the target provinces.

People affected: 6.2 million affected, 973,207 displaced.

Beneficiaries: 20,000 people.

Shelter size: 18m^2 for up to six people, 24m^2 for seven or more people.

Cost per shelter (USD): $380 (Materials), $580 (Project costs)

What did CRS do?

Families were supported to rebuild shelters with materials they salvaged (mostly coco lumber) and materials provided by CRS (roofing materials and strapping). CRS paid carpenters to build the main structures after receiving training in safe construction techniques. A focus on community participation and low-cost materials maximized the project outputs. In total, 4,139 transitional shelters were constructed, 18,193 families received NFIs and 10,233 received emergency shelter materials.

Background

After a long period of time without severe weather events, southern Mindanao was hit by Tropical Storm Washi (Sendong) in late 2011 and Typhoon Bopha (Pablo) at the end of 2012.

The lack of previous experience of such powerful storms meant that most houses were not built to withstand them.

CRS conducted household surveys immediately after the typhoon. Families reported that, prior to the typhoon, they lived in houses constructed mainly with light materials: roofing was primarily CGI sheeting (90%); walls were constructed with plywood or amakan (weaved palm leaves or bamboo) (50%); a combination of wood and cement (30%); or cement only (20%). The damage was reported to be highest among homes with plywood or amakan walls.

In focus groups, families indicated that they were not familiar with simple resilient construction techniques.

Housing damage was concentrated in Compostela Valley (95,054 partially damaged houses, 40% of them totally damaged) and Davao Oriental (30,245 partially damaged, 75% totally damaged).

The majority of those made homeless returned to the site of their original homes and built makeshift shelters or slept in tents. Others stayed with host families.

These makeshift shelters were extremely vulnerable to storms, heavy winds and other hazards, and most people did not have the resources to rebuild basic shelters to Sphere standards.

Problem Statement

The Philippines Department of Social Welfare and Development released 160 million pesos (US$ 3.65 million) in assistance. Half the money was for repairs (approximately US$ 232 per household) and the other half intended for building new houses on original plots or on resettlement sites.

To complement the government response, Shelter Cluster members provided shelter recovery assistance to two broad groups of participants. Communities in designated safe areas were assisted to rebuild on their original plots, whilst families who had to move from high-risk areas to relocation sites received help to build new houses.

The shelter strategy promoted "building back better" construction techniques and was part of a wider integrated approach, including livelihoods and WASH assistance.

Families are introduced to the shelter design which was developed after studying local techniques.
Photo: Seki Hirano / CRS

Participant Selection

Once the geographical selection had been made, CRS selected the participants based on three types of criteria:

1) Inclusion criteria

Families had to be residents of the target *barangay* (neighborhood), have a totally damaged house, and not be a participant of any other significant shelter project.

2) Vulnerability criteria

Vulnerability criteria was used for prioritizing families, and based on whether one or more family members were pregnant or breastfeeding, disabled, under 5 years of age, or elderly. Single-parent families and families with more than five members were also prioritized. Families with unstable or very limited income were included on a case-by-case basis, but others that did not meet vulnerability criteria, but were still too poor to rebuild, were not reached by the response.

3) Participant requirements

Before construction could begin, families needed to prove land ownership, which could include written consent from a landowner. Also, the land had to be classified as "safe." Families living in evacuation centers had to be willing to return to their original place of residence. Each family had to provide three volunteers to assist in construction, and the household could not consist of multiple participant families.

The formation of Project Implementation Committees (PICs) took place. Comprised of local political leaders and health workers, they were briefed of their role in assisting with the resolution of family concerns and in ensuring project implementation.

The community mobilization team conducted meetings at *purok* (sub-village) level, providing information about CRS, the project and participant selection criteria. During the meetings, the community nominated families that met the selection criteria.

CRS then registered potential participants using a screening form to validate the criteria. The PICs validated the participant lists, which were then displayed publicly in the community. A hotline for feedback or disputes was open for three days, and families could also direct their feedback directly to staff members in the community.

Resolution of concerns and feedback took place with the involvement of PIC members to ensure a locally acceptable list of participants.

Project Implementation

NFI distribution and debris clearance

In the immediate aftermath of the typhoon, 18,193 families received water-storage materials, hygiene kits, and household items, and 10,233 households received emergency shelter materials.

Nearly 1,000 people were paid for clearing debris from public spaces, providing a temporary source of income for workers.

WASH activities included water infrastructure repairs benefitting 4,472 families, and the construction of latrines. Other activities included livelihoods support for 500 farmers.

Recovery

The shelter recovery project, which ultimately reached 4,139 families, was implemented through two complementary teams: a community mobilization team and a construction team.

Once participants had been selected, land ownership established, and sites approved by CRS engineers, each family began to collect coco lumber logs to begin construction. If a family could not prove ownership, or if the site of the plot was unsafe, they could seek permission from another landowner, or approach barangay officials for a new plot.

Construction began once participant families had cleared the site and provided the lumber needed for the walls. CRS engineers and foremen oversaw construction by local carpenters, who received payment after an engineer or foreman had completed a technical checklist, which included disaster resilient techniques.

In cases where families were unable to provide voluntary labor, the carpenters agreed to complete the work themselves.

The hotline was active throughout the entire project. Calls were received by staff not directly involved in project implementation, and the nature of the calls as well as the resulting actions were logged. In cases of dispute, the PICs were asked to assist in resolving the issue.

CRS carried out multiple types of assistance at the same time (NFI distribution, WASH infrastructure, livelihoods assistance and shelter) but each activity was implemented separately with its own selection criteria. Combining them may have improved the efficiency of the project.

Technical Solutions

Affected families expressed a need for a simple, standardized design for a disaster-resilient shelter that could be built in 3-5 days. CRS promoted a standard design of 18m2 for families of six, adapted to 24m2 shelters for larger families.

CRS's senior technical advisor, in collaboration with engineering staff, developed three pilot models, all of which used locally available materials, and enhanced local construction knowledge. CRS held community feedback sessions to select the preferred model.

A finished shelter. Three pilot models were built to elicit participant feedback.
Photo: Seki Hirano / CRS

Coordination

CRS was the first and primary provider of shelter assistance in the area, which meant that coordination was focused on inter-sector coordination. Shelter designs were shared within the Shelter Cluster.

Disaster Risk Reduction (DRR)

Five disaster-resilient construction techniques were incorporated in the shelter design:

- **Reinforcement of key structural joints:** Connections between wooden pillars, beams, trusses, roof purlins, and bracing were reinforced with metal strapping.
- **Lateral bracing:** Cross- or corner-bracing was applied to increase the frame's resistance to lateral forces.
- **Firm anchoring of roofing sheets:** Sheets were held in place using fasteners such as J-hooks or bolts.
- **Raised floor:** Shelters were constructed above typical flood levels.
- **Foundations:** Frames were built upon, and anchored to, concrete or stone foundations buried 50cm-100cm below ground, to prevent both uplift during storms and subsidence.

CRS trained local, skilled carpenters in how to implement the techniques and paid them to apply these techniques to the shelters.

Although only 9% of participants reported awareness of some of these disaster-resilient techniques before the project, 98% remembered at least one technique and 83% remembered two or more techniques approximately two weeks after the construction of their home.

As some families had already rebuilt their shelters before CRS implemented its project, it would have been more effective to share the DRR messaging with the whole community much earlier.

Wider Project Impacts

Some families who were not project participants applied the DRR construction techniques in the reconstruction of their shelters. A rapid analysis suggested that these families displayed a better understanding of the causes of typhoons, as well as the effectiveness of mitigation measures.

Non-participants who did not adopt DRR techniques perceived the labor and materials involved to be too expensive

Materials

During initial assessments, it was determined that families could provide the walling using tarpaulins and other salvaged materials. Good-quality lumber was not available for the construction of shelter foundations and frames, but fallen coconut trees proved a good alternative.

Standard-size lumber was required to build the shelters according to the design, so the early thought was to give families cash to pay chainsaw operators for cut lumber. However, chainsaw operators were in such high demand that CRS decided to centralize the process and hire chainsaw operators directly.

Bill of Quantities

Description	Quantity
10 ft Coco Lumber posts (2"x4" & 4"x4")	26 boards
12ft Coco Lumber purlins (2"x3")	34 boards
8ft Coco Lumber (2"x4" & 4"x4")	28 boards
10ft Coco Lumber (1"x8" floor & 2"x2")	50 boards
Coco Log	6 pcs
Common wire nails and roofing nails	8 kg
Roofing sheets	22 sheets
Vulcaseal	1 pint
Tie-wire hooks	50 pcs
2-1/2" Roofing Nails	2 kg
Tie-wire (various types)	1.75 kg
Gravel	0.5 m^3
Cement (40kg)	2 bags

Strenghts

- ✓ The percentage of community members aware of DRR construction techniques rose from 9% to 98%.
- ✓ Model shelters were built to facilitate the training of carpenters and incorporate the feedback from participants, resulting in a 99% satisfaction rating for the final design.
- ✓ A strong emphasis was placed on community involvement and local-level planning and execution.
- ✓ An effective feedback process during participant selection, and a resolution mechanism for complaints through Project Implementation Committees, helped to strengthen program quality and accountability.
- ✓ Relatively low costs per shelter meant that CRS could assist a larger number of participants.

"[The time after the typhoon] was very difficult. It was just one day at a time trying to meet your daily need. But now there is a feeling of confidence because we have proved to ourselves that we can overcome."

– Participant, Compostela Valley Province

Weaknesses

- Availability of fallen coco lumber was based on an assessment in Davao Oriental, but no assessment was made in Compestela Valley, where salvageable materials were less available, causing delays.
- Financial coping capacity was not included in the selection criteria, meaning that some families who could not afford to rebuild were not assisted.
- Tensions between participants and non-participants were reported in the early part of the project. Improved methods of communicating selection criteria might have helped to avoid this.
- Combining different project activities (NFI distribution, WASH etc.) would have streamlined community mobilization and project monitoring.
- Humanitarian organizations were unable to coordinate when it came to competing for the scarce number of skilled carpenters and chainsaw operators.

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