

EARTHQUAKE EMERGENCY SHELTER RESPONSE

FINAL REPORT

Grantee: Cooperative Housing Foundation
Cooperative Agreement Number: 519-A-00-01-00027-00
Reporting Period: January 25, 2001 to December 31st, 2001

I. Narrative

A. Background

CHF was awarded a Cooperative Agreement by USAID to carry out the **Earthquake Emergency Shelter Response Program** in 32 municipalities in El Salvador. The Cooperative Agreement was effective January 25, 2001, and the Program Completion Date was December 31st, 2001. The program was funded with a \$4,024,304.00 grant from USAID which also provided 2,015 rolls of plastic sheeting. These dates and amounts reflect modifications concluded and, described below in section B.

B. Expected Results

The overall goal of the **Earthquake Emergency Shelter Response Program** was to provide immediate assistance to 8,000 families hit by the 7.6 magnitude earthquake centered near the southeast coast of El Salvador on January 13, 2001 and to an additional 1,533 families hit by the following 6.6 magnitude earthquake which struck El Salvador on February 13, 2001, centered in the Department of La Paz. CHF worked in over 250 communities in 32 municipalities.

Intermediate goals and specific outputs included:

- (1) Deliver emergency shelter assistance to 9,533 vulnerable families
- (2) Deliver 21 Provisional Health Rooms, to heavily damaged Health centers / Hospitals
- (3) Deliver 66 Provisional School Rooms, to Heavily Damaged School Centers

- (4) Distribute 1,500 mattresses, 1,500 blankets and 200 water containers to the population requiring these in target municipalities.
- (5) Rehabilitation and/or repair of damaged water wells in the communities of Bajo Lempa, Usulután.
- (6) Build/Repair 1,150 latrines for those families with the most acute sanitation problems
- (7) Strengthen local social service and disaster response coordination procedures by working through these structures to identify beneficiaries in the most devastated communities, and strengthen local NGO partners.

The original proposal presented by CHF on January 13, 2001 to deliver emergency shelter assistance to 4,000 families with a budget of \$ 1,736,825, was revised on January 23, 2001 to increase by 4,000 to 8,000 the number of families assisted, increasing the budget to \$3,473,650. This last one was approved and an Agreement was signed on January 25, 2001 for a grant amount of \$3,473,650, with an estimated completion date of July 31, 2001.

Additionally, due to the second earthquake that struck El Salvador on February 13, 2001 USAID and CHF agreed to revise upward the families assisted by 1,533 to 9,533, and signed Modification No. 1 of the Cooperative Agreement, on March 5, 2001, increasing the grant amount to \$ 4,024,304, with the note that this modification should be completed not later than April 30th.

Given the Emergency Conditions of the National market and the request from the Government of El Salvador, that to the extent possible all international donors procured materials outside the country, USAID agreed to, and signed on March 16, 2001, Modification No. 02 in order to change the "Authorized Geographic Code" from "000" United States to code "935 any area of country including the cooperating country but excluding foreign policy –restricted countries".

On August 1, 2001 USAID through Modification No. 3, USAID granted CHF a no-cost extension of five (5) months, to December 31, 2001 in order to construct at least 350 additional latrines. Also, this extension allowed the time required to receive pending reimbursements to CHF from USAID of Value Added Tax (IVA).

CHF proposed several amendments to the objectives and indicators of the Cooperative Agreement following changing conditions in the field with respect to damages and needs resulting from the earthquakes, as well as the shifting priorities of other government and non-government response agencies. These are as follows:

Activity	Proposal Objective/indicator	Proposed Modification
Shelters	9,533	9,533
Rehabilitation/repair latrines	800	800
Hygiene kit	1,500	0
Mattresses	500	1,500
Blankets/sheets	500	1,500
Water bottles	500	200
Debris removal	2,000 families	0
Water/Sanitation evaluation	Report	No
Rehabilitation/repair water wells	0	450
Provisional health rooms	0	21
Provisional school rooms	0	66

Amendments Rationale:

Hygiene Kits: OFDA had difficulties acquiring the 1,500 hygiene kits. CHF never received them and concluded that, with the relief phase of the emergency over, it made less sense to pursue this objective.

Mattresses and Blankets/Sheets: Recognizing the high demand for these items immediately following the earthquakes, CHF decided to increase the goal to 1,500 sets.

Water Bottles: As CHF began delivering water and water bottles; it became clear that many groups, including the Red Cross, were dedicating much of their efforts to water provision. CHF decided to focus its efforts more on the needs receiving much less attention, such as provisional hospital rooms.

Debris Removal: After the signing of the Cooperative Agreement, FISDL of the Government of El Salvador informed CHF that they had budgeted and would be distributing funds to the affected Municipalities to cover the cost of debris removal. CHF agreed to reprogram these resources into other emergency response needs.

Water/Sanitation Evaluation: After the signing of the Cooperative Agreement, CHF learned that a number of groups, including ANDA as well as Project Concern International (with USAID funding) had initiated such an evaluation. CHF decided these resources would be more effectively spent on other response needs.

Rehabilitation/Repair of Water Wells: Taking into consideration the need to reprogram OFDA funds from other budget line items (e.g. debris removal), and recognizing that in many communities the earthquakes damaged or destroyed water wells, cutting thousands of families off from access to potable water, CHF decided, with verbal approval from OFDA, to focus some resources on the rehabilitation of water wells.

Provisional Health Rooms: Immediately following the February 13, 2001 earthquake, a number of hospitals were in dire need of provisional health rooms to protect patients evacuated from damaged buildings as well as the hundreds of injured earthquake victims that began flooding these facilities. CHF proposed, and OFDA agreed, that some resources be immediately dedicated to the construction of provisional health rooms.

Provisional School Rooms: The earthquakes left dozens of schools completely destroyed and even a greater number, heavily damaged. Thousands of school children could not attend classes. The Ministry of Education asked CHF to help through the construction of provisional schoolrooms. USAID agreed verbally and resources were reprogrammed from other budget line items (e.g. debris removal).

In June, 2001, through Modification No. 3, USAID granted CHF a no-cost extension of five (5) months, to December 31, 2001 in order to construct at least 350 additional latrines. Also, this extension allowed the time required to receive pending reimbursements to CHF from USAID of Value Added Tax (IVA).

B. Current Core Activities:

This Final Report addresses the final accumulated accomplishments of the **Earthquake Emergency Shelter Response Program**.

Participatory Methodology: In keeping with CHF activities worldwide, the identification of projects and activities, as well as their implementation, was carried out through an extensive participatory framework. CHF worked closely with the local governments of the 32 municipalities, with community representatives, beneficiaries, local NGOs, and numerous government agencies (COEN, Ministry of Education, Ministry of Health, FISDL, and the Ministry of Environment and Natural Resources), as well as other donors and international NGOs. Such participation ensured that selected Beneficiaries met with USAID eligibility criteria and matched the most urgent needs of poor families and communities affected by the earthquakes. Participation guaranteed that efforts made by the Government of El Salvador and other Donor/Aid organizations would not overlap or duplicate each other, and that every dollar spent would have the greatest beneficial impact possible.

Gender Focus: The identification of project beneficiaries also favored, whenever possible, women, children and the elderly, society's most vulnerable groups affected by the

earthquakes.

C. Emergency Shelter and Latrines Construction

The Program provided materials and construction direction for a 4.35 x 3.49 m shelter. Roofs consisted of corrugated metal that can be used when families reconstruct their homes. Sides were of reinforced plastic sheeting provided by OFDA. The shelter included a door and a window to provide both privacy and ventilation.

Selected communities were asked to provide lists of the vulnerable families in their jurisdiction, according to standard local criteria for vulnerability. An agreement was made with FISDL (the government agency in charge of local development), in order to coordinate construction sites for each designated NGO working on this Program, to address the needs of those families that did not get the materials and financial aid from the Government of El Salvador in ... coordination with the mayors of each municipality.

Coordination of the logistics for procurement, wood frames preparation and the on-site building process constituted the most challenging aspects of the process. The wood was received in truckloads ordered in such a way as to contain wood of different sizes that once processed, produced frames for 60 complete shelters. Skilled carpenters, with fixed round saws, and helpers were organized in such a way that a truckload was processed in no more than 3 hours. At the same time, hired local trucks were loading the out-going pre-cut frames in sets of 15 houses per truck as soon as they were ready and delivered to each building site, including all the hardware, corrugated metal sheets and plastic sheeting required. The complete 15 shelter truck loading/dispatching capacity ranged up to 10 trucks per day. Nevertheless, as explained in the problems encountered section, there was a delay on materials procurement, especially wood, which restricted the process.

In the field, a team of seven (7) skilled workers together with the help of beneficiary families was able to finish an average of 10 shelters per day. Each worker had specific duties to perform as in a chain production process. Up to 20 teams were in place at the peak construction rate.

In the case of pit latrines, they were made of a wooden frame covered with plastic sheeting and corrugated metal roofing. A vent pipe was provided. The beneficiary contributed by digging the pit. The construction was subcontracted to a set of skilled workers, paid on a unit basis turnout.

All construction workers, truck transportation to building sites, loading and unloading helpers were hired locally, thus contributing to the generation of employment in the area.

All work was supervised by CHF engineers.

D. Provisional Health and Schools Rooms

The design and site selection was coordinated by CHF with the Ministries of Health and Education to benefit the most affected areas that needed immediate attention. The basic design was as follows:

Area: A provisional multi-use shelter with a 49 square meter area (7m x 7m).

Structural components: A primary metal frame anchored by four columns sunk in concrete with an attached wooden structure to position the walls.

Walls: The walls are two-layered. The exterior wall is made of aluminum siding, to increase security and protection from weather conditions. The interior wall is made of OFDA plastic sheeting. The sheeting is inflammable and the space between the two walls provides an air cushion to filter out noise and lower the temperature in the interior.

Doors and windows: Doors and windows are made of aluminum and wood for their solidity and to increase security.

Floors: The floor consists of concrete poured over compacted soil.

In order to speed up construction, CHF subcontracted most of the work with the exception of the last 12 hospital rooms and the last 8 schoolrooms which were constructed during the Program extension period. To accomplish this, CHF arranged an expedited bidding system for this Program. A group of 20 firms possessing previous experience with CHF in construction was selected from a CHF managed bank of construction firms that had proven themselves to be efficient, quality builders. These firms were invited to submit economic and technical bids to CHF to build the provisional rooms. CHF then analyzed the bids and calculated the average and most reasonable unit costs from among the different offers. Subsequently, CHF set one price for the construction of a room and offered that price to all the pre-selected firms. Those agreeing to the price could ask to be included and thereby, contracted. A total of six (6) construction firms accepted the price. CHF supervised construction, and provided the metal frame and plastic donated by OFDA.

E. Rehabilitation and/or repair of damaged water wells in the communities of Bajo Lempa, Usulután

Most wells in this area are made of concrete tubes or bricks. The earthquakes caused many wells to crack, slip horizontally and/or vertically, or collapse and hence many of the structures were unsafe, and the water in the wells was dirty and turbid. In this component, CHF worked with the participation of GOAL, an Irish NGO with the necessary background and expertise in this field. An initial assessment of the damages was made which resulted in a proposal to include the emergency rehabilitation of 500 wells in most of the communities in the area.

According to the results of the surveys, there were 270 that required cleaning only. When work began, this number dropped dramatically, for the following reasons:

Damages to some wells were not detected during the surveys and following cleaning operations, were repaired.

The suction force of the water draining pump undermined some of the well structures causing them to sink further, creating the need for further repairs. This phenomenon was experienced particularly in areas where the soil had a high sand content.

Some beneficiaries declined to have their wells cleaned.

The CHF Social Promotion team was responsible for the disinfections of all the wells included in the project. A total of two (2) visits were made to every well in the chlorination stage, the first to add the chlorine, and the second usually taking place the following day to test that the chlorine levels in the water were safe for human consumption. During these visits, the social promoters would explain why it was important to chlorinate the water.

F. Strengthen local social service and disaster response coordination procedures by working through these structures to identify beneficiaries in the most devastated communities, and strengthen local NGO partners

All coordination effort was completed through the proper designated channels put in place for the emergency by the related ministries, government organizations, local governments and social organizational structure. Close cooperation was also maintained with the NGOs working under USAID financing as well as with other organizations and donors.

In order to strengthen local NGO's and as a way to reach as many beneficiaries as swiftly as possible, CHF subcontracted and trained 17 local NGOs for the shelter construction component, assigning them, under CHF's supervision, the construction of 4,584 units, representing 42 % of the total shelters constructed.

The assignment was made based on each NGO's capacity and areas of influence, in an effort to build on their already existing ties with local government and community leaders. The number of shelters assigned is detailed in the following table:

NGO	Shelters Built	NGO	Shelters Built
ASALDI	599	ASDI	200
FUNDAMUNI	539	FUNDESA	200
CRD	449	CODECOSTA	200
OEF	449	FUNDESEG	200
PROCOSAL	250	APRODESMI	200
ANAES	216	SECAIS	200
FEED THE CHILDREN	200	FUNDAITI	200
FUCADES	200	FUSAI	125
		CLUSA	141

G. GOALS

The 1,533 more urgent shelters in the areas affected by the second earthquake were completed by the last week of March, 2001; thereby meeting the scheduled termination date of March 30, 2001. This was possible due to a pipeline of materials and trained staff which was already up and running and fully operational from the first 8,000 shelter portion of the project.

Even though the completion date for the shelter programs was July 30, 2001, a tremendous effort was put forth in order to finish the 9,533 targeted shelters as soon as possible before the rainy season started. This was decided in order to protect the most vulnerable families which were practically living outdoors, exposed to the elements. By the end of May, CHF had built 10,038 Shelters representing 105 % of the original goal.

CHF managed the budget efficiently, so that in most components the number of units accomplished was higher than the goal set, as shown below:

Activity	Goals	Final Count	% of Goal
Shelters	9,533	10,796	113
Rehabilitation/repair latrines	1,150	1,617	140
Rehabilitation/repair water wells	450	976	216
Provisional health rooms	21	42	200
Provisional school rooms	66	70	106
Mattresses	1,500	1,500	100
Blankets/sheets	1,500	1,500	100
Water bottles	200	200	100

H. PROBLEMS ENCOUNTERED

CHF considers the main problem encountered in the implementation of the project which constituted the main reason for the request for the modification of the “Authorized Geographic Code”, was the shortage of construction material, especially wood. But thanks to CHF’s Regional coverage, with the support of CHF Headquarters and the Guatemala and Honduras Offices we were able to quickly arrange purchases of material from the United States. Imports from the USA, Honduras, and Guatemala were as follows:

Material	Local	USA	Honduras	Guatemala
Wood	13 %	33%	38%	16%
Hardware	20 %		80 %	
Tools	40 %		30%	30 %

A significant source of delay in wood imports was due to the fact that a regional warning of the spread of a cattle disease by the name of “Fiebre Aftosa” caused the need for all trailers coming from abroad to be fumigated in El Salvadoran border customs. The use of the chemical being applied was banned in the United States, as a result, USAID notified CHF that it could not be use the substance on CHF shipments. Arrangements were made with The Ministry of Agriculture and the Ministry of Environment and Natural Resources, in order to change the chemical to be applied. These negotiations had to be completed two times, as the second chemical proposed by the government was also banned in the USA. Ultimately, an approved chemical was found; however, since it was used only for CHF trailers, the wood was required to wait at the border until groups of at least six (6) were accumulated for fumigation to proceed.

Once the OFDA Plastic sheeting supply was depleted, CHF made arrangements to buy plastic rolls directly from TECH SOLUTIONS INTERNATIONAL, in the USA, which had plastic rolls in stock made for OFDA. These rolls, although possessing a lower percentage of fire retardant capability were found to be perfectly suitable for use as a temporary shelter wall cover which was confirmed with OFDA before incorporation. CHF directly imported an additional 300 rolls of plastic, in order to continue shelter construction, as long as wood and other materials were available. This was in an effort to attend to pending requests from families, and hospitals that had not yet been assisted.

I. LESSONS LEARNED

Coordination with local NGOs to involve them in direct construction proved to be very valuable in speeding up the emergency response, since they had already identified

beneficiaries and offered strong ties to the mayors and community leaders in their area of influence.

In many cases, immediate delivery of plastic sheeting prior to construction helped the beneficiaries to protect themselves from the elements; nevertheless, when CHF went back to initiate shelter construction many of these same families had already received shelters from other institutions.

The appropriate structural design of the shelter frame was a plus, since none of CHF shelters were damaged in areas of high wind. The design of an overlap in the lower end of the plastic sheeting where it touches the ground, allowed for the building of a seal around the house that kept rainwater from filtering inside the shelter.

The mass production approach to the process proved to be very useful in the preparation of materials, their delivery to the site, in addition to the completion of construction without major delays.