

SHELTER PROJECTS

2011-2012



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International Federation
of Red Cross and Red Crescent Societies

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Shelter Projects 2011–2012

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Front Cover: A transitional shelter in the Philippines being relocated by 20 people.

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Back cover left to right:

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Foreword

The fourth edition of 'Shelter Projects', is launched at a time when shelter is more relevant than ever as an instrument of humanitarian response. The case studies in this edition reflect the on-going challenges posed by responses to complex emergencies such as Haiti and Pakistan as well as new challenges derived from unprecedented level of population displacement in Africa, Asia and in the Middle East. While the increase of shelter needs prompt larger mobilisation of resources, shelter programmes need to explore improved models of delivery as well as innovative, cost-effective solutions which incorporate best practice and position the persons of concern at the forefront of our interventions.

Where people live largely determines their ability to meet their basic needs. It is of paramount importance that shelter solutions look beyond the physical structure and consider the environment within which the shelter is placed. Nowadays, large displacement of population due to humanitarian crisis, mostly affects urban areas where people expect to find easier access to opportunities be it of social or economic nature. Nevertheless, this trend further exacerbates the existing urbanisation phenomenon by placing additional strain on already vulnerable areas. It is therefore increasingly evident that new concepts for sheltering people have to incorporate a more holistic approach which includes the shelter and its surrounding context. Shelter is an integral part of settlement planning, which guides spatial allocation of functions maintaining equilibrium between population needs, availability and allocation of resources, economic dynamics, amelioration of living conditions, provision of services, communication transportation networks as well as recreational spaces.

The case studies contained in the fourth edition of Shelter Projects are a reminder once again that every crisis is unique. There is no 'silver bullet' for shelter response. The main objective should be to operate in accordance with recognized shelter best practice while enabling those displaced to return to their homes or equivalent living space in a timely manner encouraging community recovery and building resilience to possible future shocks. Participation and promoting ownership is the key to achieving successful projects.

As well as being an important reference point for shelter facilitators this publication also acts as a learning tool allowing the successes and challenges of completed shelter projects to be replicated and improved on. The case studies address common issues emerging in shelter response, outline different approaches to addressing shelter needs and assist in evaluating the impact on affected communities. The shelter projects case studies provide an excellent resource against which to gauge proposed shelter interventions and access possible outcomes. Let's collectively try to avoid 're-inventing the wheel'.

This edition also contains a new section comprising relevant thematic topics of interest compiled by technical experts. The issues addressed are: a background to the indicator for covered living space 'the 3.5m² principle', cash transfers as a tool in shelter response, sheltering of livestock and the importance of settlements.

In keeping with developments in on-line information and social media, greater emphasis is being placed on electronic dissemination, and in this regard the shelter projects website www.sheltercasestudies.org is identified for reference on each page of the document. We welcome your feedback and hope you will utilize the website in this regard.

A special thanks to those who contributed with case studies and the Technical Advisory Committee for the articles of interest, without your support we would have no stories to tell. We trust that the reader will find this edition of 'Shelter projects' relevant and thought provoking leading to improved shelter solutions for affected communities.

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- CRS - Catholic Relief Services
- Habitat for Humanity
- Heritage Foundation of Pakistan
- IFRC- International Federation of the Red Cross and Red Crescent Societies
- IOM - International Organisation for Migration
- Netherlands Red Cross Society
- NRC- Norwegian Refugee Council
- Oxfam GB
- Première Urgence
- Shelterbox
- Solidarités
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We would like to thank those who contributed to Shelter Projects 2008, Shelter Projects 2009, and Shelter Projects 2010 whose work is reflected in this document.

We also would like to thank the many hundreds of people who have implemented the projects that are mentioned in this book, but who have not been individually credited.

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Introduction

This book contains summaries of shelter projects that have been implemented in response to conflicts, complex emergencies, and natural disasters (Section A). It also contains a section entitled *Opinions* (Section B). These are summaries of significant issues in humanitarian shelter provision, written by shelter practitioners with specific interests and experiences.

A full list of case studies contained in all four editions: *Shelter Projects 2008*, *Shelter Projects 2009*, *Shelter Projects 2010* and *Shelter Projects 2011–2012* can be found in Annex 1.

The case studies in this book were implemented by many different organisations, a full list of which can be found in the acknowledgements section (page iv). In order to allow weaknesses as well as strengths of programmes to be openly shared, the case studies are not directly attributed to individual organisations. Host government projects are not included.

Including a case study in this book does not necessarily mean that it represents best practice...

As a result of the projects being implemented in diverse and often challenging conditions, they illustrate both good and bad practices. From every case study there are lessons that can be learnt, and aspects that may be repeated or need to be avoided.

Warning

Each project must take into consideration the local contexts and needs of the affected population, which will differ from case to case. Projects should therefore not be directly copied or there will inevitably be programmatic weaknesses and failures.

Selection of case studies

The case studies were selected using the following criteria:

- Projects must be wholly or largely complete by the end of 2012. This is to allow solid learnings to be gained.
- Given the scale of emergency shelter need every year, case studies must have had large scale impacts. Discontinued trials or design concepts were not included.
- The majority of the project must be implemented within the first years following a natural disaster. For conflict affected populations, chronic emergencies and return processes, longer time scales can be considered.
- Accurate project information is available from staff involved in the project implementation.
- The case studies should illustrate a diversity of approaches to

meet shelter need, as providing shelter is more than simply designing architecturally impressive structures.

In compiling the case studies for this edition, special efforts were made to include projects which were not restricted to construction of an agreed shelter design. As a result readers will find projects which include issues such as rental support, (e.g. A.10 and A.11 Haiti – 2010), settlement issues (e.g. A.31 – Tunisia – 2011), site planning (e.g. A.15 – Kenya – 2011) and coordination (e.g. A.20 – Pakistan – 2010 and A.28 – Somalia).

In the case studies, we include some findings from a 10 year evaluation of a transitional shelter project (A.7 – Democratic Republic of Congo – 2002). We also include a case study from 1871 that illustrates the long history of shelter projects (A.32 – USA (Chicago) – 1871), and contains an early design for a t-shelter / core house.



This edition of Shelter Projects focuses on a broader range of projects than previous editions - such as A.15, Kenya (Dadaab), which includes site planning.

Photo: Joseph Ashmore

Global shelter need

The data presented in the table below indicates that over seventy million people were displaced or remained displaced as a result of conflict, natural disasters and economic development in 2011/2012. However, how these people settled and the total number of people who required shelter support is not known.

Although most of these seventy million people were displaced before 2011, all have required new shelter solutions at some stage. Many found their own solutions, whilst many more were provided with external assistance.

Total number of refugees and IDPs by category (in millions).

	2010	2011
UNHCR refugees	10.55	10.40
Asylum seekers	0.85	0.87
Palestinians (care of UNRWA)	5.00	5.10
REFUGEES TOTAL	16.40	16.37
IDPs (conflict and generalized violence-induced)	27.50	26.40
Natural-hazard disaster-induced	42.30	14.90
IDPs TOTAL	69.80	41.30
Development induced (e.g displaced by dams)	15.00	15.00
TOTAL	101.20	72.67

Source: Table 1.1 *IFRC World Disaster Report 2012*, p. 15

Natural disasters 2011/2012

In 2011 there were 336 recorded natural disasters affecting approximately 209 million people¹. Although this gives an idea of the scale of disaster impacts it cannot be directly linked to shelter needs. However, analysis of the data does give an idea of where the greatest needs may lie.

The overwhelming majority of people affected by natural disasters live in Asia and in countries with medium or low Human Development Index scores.

The data available for 2012 reflects the pattern that floods, droughts and storms affect the greatest number of people. Major floods in 2012 in China, Pakistan, the Philippines and India dominate the statistics for numbers of people affected by natural disasters. Droughts in 2012 are estimated to have affected 11 million people in the Horn of Africa and 3 million people in North Korea.

Other disasters also had significant impacts. The 2011 earthquake and tsunami in Japan caused significant loss of life and destroyed 128,000 houses. It was also the most expensive disaster in history.

The limitations of these figures in terms of assessing shelter needs is limited due to the following factors:

- Accurate numbers of people displaced are not always available.

- Countries have differing capacities to cope with the affects of such disasters. For example millions of people in China are displaced every year by natural disasters, but little humanitarian aid is requested.

Conflicts in 2011/2012

It is estimated that 60 per cent of all forced migrants are displaced by conflict and violence. All of them required new shelter in their displacement locations. There were additional shelter and land needs in locations of eventual return.

Countries with conflicts causing significant displacement in 2011/2012 included:

- Syrian Arab Republic
- Central African Republic
- Democratic Republic of Congo
- Sudan / Republic of South Sudan

As in previous years, the total refugee numbers remain fairly static. More than half of the world's refugees came from three countries in 2011: Iraq, Somalia and Afghanistan.

Around three-quarters of the refugee population remain in a situation of "protracted displacement" with the international community unable to produce durable solutions as a result of ongoing disagreements over land rights and political instability.

It is estimated that half a million refugees voluntarily repatriated in 2011 and nearly 2.5 million internally displaced people returned home. This is an improvement on 2010, which had one of the lowest return rates in 20 years. Projects from *Afghanistan (A.1)*, *Cote d'Ivoire (A.5-A.7)*, and *Sudan (A.29)* in this book relate to return and resettlement programmes.

The deterioration of the security situation in Syria led to over half a million people seeking protection in Turkey, Jordan and Lebanon by the end of 2012. A further two million people were thought to be displaced within Syria, numbers that continued to rise.

Total number of people reported affected by natural disasters (in thousands.)

	Asia	Africa	Americas	Europe	Oceania
2007	190,885	1,253	9,119	1,651	172
2008	182,754	22,653	20,314	268	105
2009	174,056	42,636	7,046	141	77
2010	292,534	3,724	12,744	834	549
2011	176,453	19,092	13,457	79	484
Total	1,016,682	89,358	62,680	2,973	1,387

Adapted from Annex (Table 3) *IFRC, World Disasters Report 2012*, p. 258

¹ Figures for disaster-affected populations in 2012 are incomplete. The main statistical resource quoted here for disaster information (EM-DAT international disaster database) is under constant revision. Final figures for 2012 are not yet available.

Where to find different types of response in the case studies

Case study	Settlement option								
	Non-displaced / returns	Dispersed self-settlement	Short-term land, house or apartment tenant	Unplanned camps	Collective centres	Hosting	Planned and managed camps / relocation sites	Resettlement	Urban neighbourhoods
A.1 – Afghanistan – 2012	x								x
A.2 – Burkina Faso – 2012							x		
A.3 – Colombia – 2012	x								
A.5 – Cote d'Ivoire – 2012	x								x
A.6 – Cote d'Ivoire – 2012	x								x
A.7 – DRC – 2002	x								x
A.8 – Ethiopia – 2011							x		
A.9 – Ethiopia – 2012							x		
A.10 – Haiti – 2010	x		x	x					x
A.11 – Haiti – 2010	x		x	x			x		x
A.12 – Haiti – 2010	x			x					x
A.13 – Haiti – 2010		x							
A.14 – Japan – 2011	x				x				x
A.15 – Kenya – 2011							x		
A.16 – Lebanon – 2007				x			x		x
A.17 – Lebanon – 2011			x		x	x			
A.18 – Madagascar – 2012	x								
A.19 – Nicaragua – 2007	x								
A.20 – Pakistan – 2010	x	x		x	x		x		
A.21 – Pakistan – 2010	x								
A.22 – Pakistan – 2011	x								
A.23 – Pakistan – 2011	x								
A.24 – Peru – 2012				x					
A.26 – Philippines – 2012	x							x	x
A.27 – Philippines – 2012								x	
A.28 – Somalia – 2012									x
A.29 – Sudan – 2012	x							x	
A.30 – Thailand – 2011	x				x	x			x
A.31 – Tunisia – 2011							x	x	
A.32 – USA – 1871	x				x	x			

Table illustrating which forms of support were provided in each case study

Case study	Household items	Construction materials	Tools	Emergency shelter	Transitional shelter / T-shelter	Support for host families	Rental support	Core housing / progressive shelter	Housing repair and retrofitting	Cash / vouchers	Loans*	Advocacy / legal	Site planning	Infrastructure	Training	Structural assessment	Guidelines / materials / mass communications
A.1 – Afghanistan – 2012		x				x		x		x				x	x		
A.2 – Burkina Faso – 2012		x		x	x					x			x				
A.3 – Colombia – 2012									x			x		x	x		
A.5 – Cote d'Ivoire – 2012		x						x	x	x		x			x		
A.6 – Cote d'Ivoire – 2012		x						x				x			x		
A.7 – DRC – 2002	x	x			x												x
A.8 – Ethiopia – 2011		x	x	x	x								x	x	x		
A.9 – Ethiopia – 2012					x								x				
A.10 – Haiti – 2010														x			
A.11 – Haiti – 2010					x		x		x	x							
A.12 – Haiti – 2010					x		x		x	x					x		
A.13 – Haiti – 2010		x							x						x		x
A.14 – Japan – 2011									x	x						x	
A.15 – Kenya – 2011				x	x			x					x	x			
A.16 – Lebanon – 2007									x	x						x	
A.17 – Lebanon – 2011						x	x		x	x						x	
A.18 – Madagascar – 2012		x						x							x		x
A.19 – Nicaragua – 2007		x						x					x		x		
A.20 – Pakistan – 2010												x			x		x
A.21 – Pakistan – 2010			x					x		x				x	x		
A.22 – Pakistan – 2011								x		x					x		x
A.23 – Pakistan – 2011								x	x			x			x		x
A.24 – Peru – 2012	x		x	x											x		
A.26 – Philippines – 2012					x							x		x			
A.27 – Philippines – 2012	x	x						x	x				x	x	x		
A.28 – Somalia – 2012	x	x			x								x	x			
A.29 – Sudan – 2012		x						x					x	x	x		
A.30 – Thailand – 2011																	x
A.31 – Tunisia – 2011	x			x													
A.32 – USA – 1871	x	x			x		x			x							x

* Although there are no examples in this edition of Shelter Projects, "Loans" is included as a category of assistance in this table as there were examples in previous editions. (e.g. *A.29 Tajikistan, 2010 Shelter Projects 2010*)

Explanation of columns:

- Household items - tents / blankets and other non-food items
- Construction materials - were provided for construction/repair.
- Emergency shelter / transitional shelter, T-shelter, temporary shelter, semi-permanent shelter, core housing / progressive shelter. Terminology is used according to the wording used in the response.

Recurring themes

Affected people are the first responders

The first and main response in most of the case studies in this book is by the affected people themselves. Of the case studies in this book, the more effective projects were set up with assessments that led to a clear understanding of the needs, and with two way communication between the implementing organisations and the affected people.

The fact that disaster and conflict affected people are usually highly proactive in finding solutions to their own shelter needs is recognized in many of the case studies in this book. For example in [A.4 – Cote d'Ivoire](#), organisations assessed the “self recovery rate”, and made follow-on planning assumptions for the support that was needed.

Sphere standards¹ and indicators provide common standards on participation, initial assessment, monitoring and evaluation.

Types of response

The previous two tables highlight some themes that recur between case studies and in which case study they can be found. The first of the two tables identifies the kinds of settlement options supported by the project and the second provides more detail on the type of assistance that was provided.

A quick glance at these tables shows that:

- Camps are not the only settlement option supported.
- There are a diversity of types of shelter that can be built by affected people or by supporting organisations.
- There is a diversity of ways of supporting people to improve shelter. These range from direct support in construction, to offering legal support, to improving communication with disaster affected people so that they can make more informed choices.

Scale

Disasters and displacements vary massively in scale, and as a result so do responses. Many are also dealt with in country (see [A.30 – Thailand – 2011](#))

In many responses there is simply not sufficient funding or capacity for organisations to provide the support that is required.

In the light of resource constraints, organisations often have to make tough decisions as to whether to provide a high level of longer term support for a limited number of households, or a lower level of support for a larger number of households. In the case of displacements over borders due to conflict, there is often little choice and some kind of support must be provided to all displaced people (see [A.15 – Kenya \(Dadaab\) – 2011](#)).

Many projects are set up to work at a small scale with the hope that the project can allow the organisations to provide a larger scale of support through advocacy and by providing a replicable model (see [A.3 – Colombia – 2012](#)). Often by implementing even small scale projects, organisations engage in the practical realities of shelter and reconstruction and can be in a much stronger position to advocate from.

In some circumstances the scale changes rapidly and the programmes must adapt to the changing scale of needs ([A.17 – Lebanon – 2011](#))

Selecting an area to intervene in

Selecting the area of intervention (province/district/village) is the first step in selecting who a project will support. It has very far reaching implications as to whether a project will meet the needs of the most vulnerable people. In many projects this decision is taken relatively rapidly and it is made using less detailed criteria than are used for selecting individuals.

Coordination and clusters

Since 2005, many of the larger responses have been managed

using the cluster approach to coordination. This was proposed as a way of addressing gaps and ensuring responses were more effective (see humanitarianresponse.info and sheltercluster.org for more background).

In this book, we include two projects as examples of cluster coordination, whilst many others highlight coordination components of the project. In [A.20 – Pakistan – 2010](#), we include a case study of coordination in a very large scale response and the need to ensure that coordination takes place at the village level as well as at the national level. In [A.28 – Somalia – 2011](#), we look at some of the issues in ensuring that multi-sectoral responses are coordinated in the complex urban environment of Mogadishu.

Disaster Risk Reduction (DRR)

In many responses, particularly to natural disasters, there is a need to support people to “build back safer” and enhance the resilience of people to withstand future disasters. In this edition of *Shelter Projects* we have tried to highlight the DRR components of projects. This ranges from structural and engineering support ([A.1 – Afghanistan – 2012](#)) to projects firmly based in community-based disaster risk reduction principles ([A.21 and A.23 – Pakistan – 2011](#)).

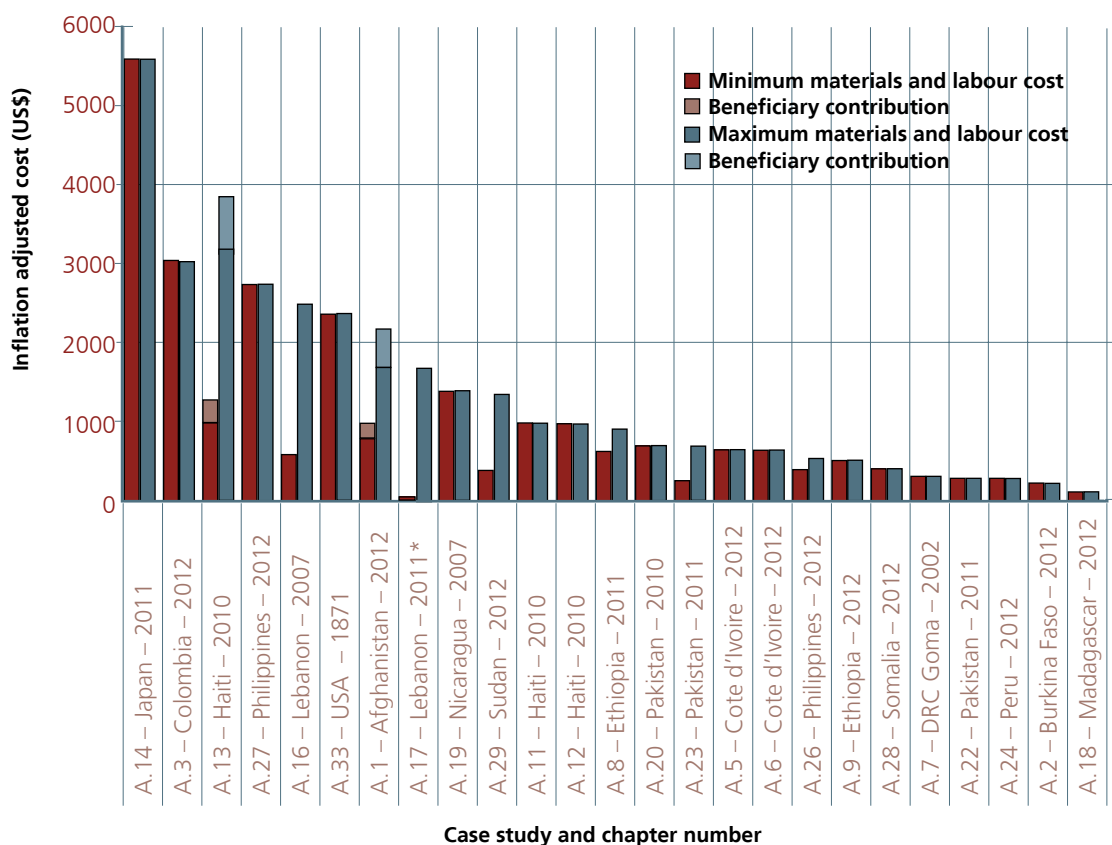
Settlements, land and planning

In this edition of shelter projects we have tried to look at shelter in the broader sense and to include issues relating to settlements. In the “Opinion pieces” ([Section B](#)), we include a piece on this subject ([B.4 – Reflection on the Importance of Settlements in Humanitarian Shelter Assistance](#)).

Some case studies include a discussion of some of the issues encountered surrounding land in recovery operations ([A.26 – Philippines – 2012](#)) whilst others look at the issues surrounding site planning the context of conflict induced displacement. ([A.15 – Kenya \(Dadaab\) – 2011](#) and [A.31 – Tunisia – 2011](#)).

¹ *Sphere Project, Sphere: Humanitarian charter and minimum standards in humanitarian response, 2011*

Minimum and maximum materials and labour costs per household for each project in this book
(Note that these figures are not necessarily representative of the entire responses)



Costing shelter projects

The stated costs of the various projects in this book are shown in the graphic above. However the costs do not all measure the same things and should not be used as indicators of value for money or of project success.

Each project was conducted in very different circumstances with very different markets, local construction methodologies, materials, skills availability and logistics constraints. Projects also varied greatly in the type of assistance provided, from provision of materials, to projects with much higher advocacy, training or mobilisation components.

In reporting the overall project costs different organisations have used different approaches making direct comparison difficult. Some have divided the entire project budget by the number of shelters built, whilst other projects have multiple sources of funding or work in multiple sectors, making overall shelter project costs harder to calculate.

Terminology

There has been a lot of academic and practical debate surrounding terminology used in shelter. Additional confusions have been added by language translation issues.

Issues of the definition of words have been particularly great surrounding the language used for different phases of assistance. As an example the terms "transitional shelter"², "T-shelter", "temporary shelter", "semi-permanent shelter" and "incremental shelter" have all been used in responses to define both the types of shelters and the processes used.

In this book we use the terminology that was used in country for each response. Although there can be some confusions, practical response specific understandings are usually developed surrounding the use of these terms. In some cases, flexibility in terminology has helped projects to take place sooner.

Interpret and contribute

In reading this book, or browsing relevant case studies, it is hoped that readers will be able to draw their own lessons and identify useful techniques and approaches.

Readers are encouraged to send in their own projects for future editions. In this way, the humanitarian community can compile good and bad practices and hopefully implement increasingly effective shelter projects in the future.

Contribute at:
www.ShelterCaseStudies.org

“[the sites were] ... filled by little towns of tents and huts; so also the Estrela district in the west and the Campo de Santa Clara on the east side of the town were full of squatters... It was estimated that about nine thousand wooden buildings were put up during the first six months after the quake, a fine achievement, for wood was very scarce indeed in Lisbon and much of it had to be brought to the city for this special purpose.

The general desire was to get out of buildings into tents or huts, and to sleep in the garden rather than indoors, even if one’s home still stood safe and sound, and for this reason the great camps on the high and open places round the city were for a long time crowded communities, in spite of the initial discomfort and squalor of the miserable bivouacs of matting, planks, and sail-cloth under which many of the squatters spent their first few nights.

The most remarkable concourse of these campers was that in and around the quinta of the Oratory in Cotovia... in a little while an ordered settlement of wooden huts was established, and some of these, built for nobles and high officials, began to be quite luxurious bungalows with glass windows and tapestry hangings and good domestic offices. ”

Shelter in response to the Lisbon earthquake of 1755.

Source: T. D. Kendrick the Lisbon Earthquake, 1956



1755 German copperplate image, The Ruins of Lisbon:

In the left of illustration is a tented camp in the suburbs of Lisbon following the fire of 1755. On the right damage that is probably related to the 1531 earthquake.

Source: Wikimedia commons

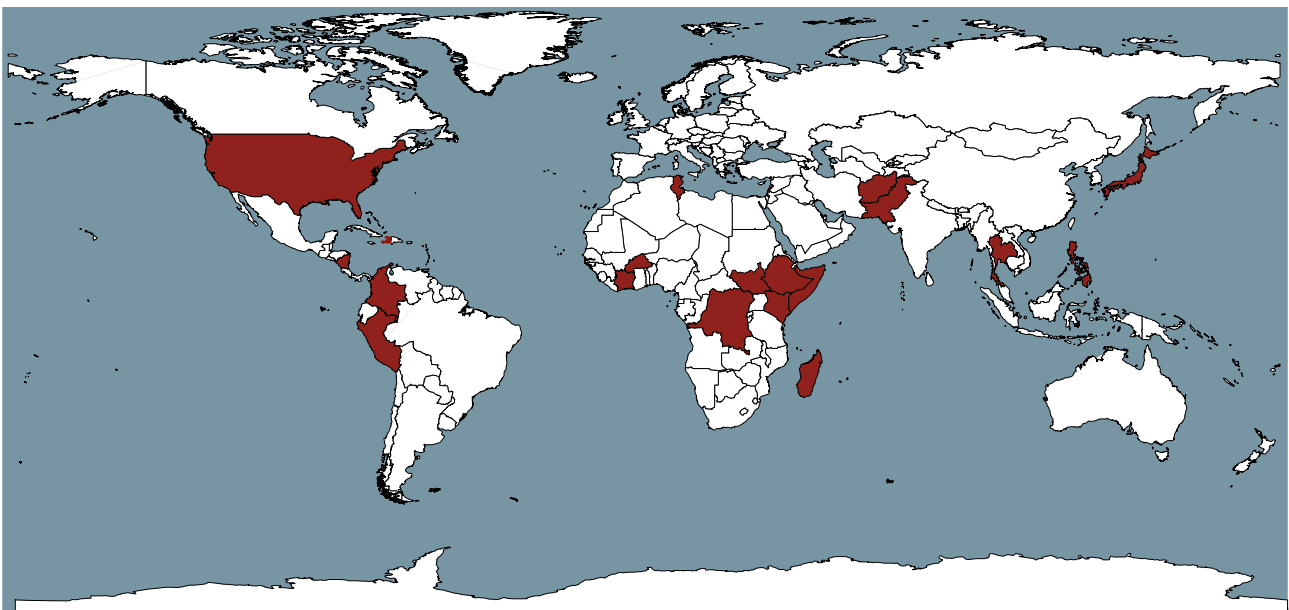
SECTION A

Case Studies

This section contains case studies of projects from both conflicts and natural disasters. It also contains one update from a project (A.7) that was included in Shelter Projects 2008.

See "Annex 1 - Index - by country" for case studies that are in previous editions.

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A.1 Afghanistan – 2012 – Conflict Returns

Case Study: **Keywords:** Returns, Urban neighbourhoods, Construction materials, Core housing construction, Cash / vouchers, Infrastructure, Training.

Country:

Afghanistan

Project location:

Kabul, Herat and Jalalabad

Disaster:

Conflict returns

Date:

2002 onwards

Number of houses damaged:

More than 130,000 houses in project areas (within Kabul)

Number of people returned:

Over 5 million people since 2002
150,000 families in Kabul

Project target population:

Pilot 295 households
(Expanded to 2,075 households)

Project outputs:

295 shelters with hygiene activities

Shelter size:

One-room shelter: average 18m²
Two-room shelter: average 30m²

Materials cost per household:

Two-room shelter US\$ 1,700
(household contributes US\$ 500)
One room shelter US\$ 800
(household contributes US\$ 200)

Project cost per household:

Two-room shelter, including indirect cost US\$ 2,286



Project timeline



Project description

This project addressed the poor living conditions of recent refugee-returnees, IDPs and host families through the construction of 295 semi-permanent shelters with household latrines and hygiene promotion. Cash grants gave beneficiaries an active role in the project and allowed the organisation's staff to spend more time with the community rather than managing contractors. The pilot phase of the project was successful and was scaled up to target a further 2,075 households.

Strengths and weaknesses

- ✓ The beneficiaries took control of the construction process, and adapted the design of the shelters according to their own needs.
- ✓ Groups of five beneficiary households worked together to manage the construction process, promoting community cohesion.
- ✓ Freed from construction management tasks, field teams focused on discussing specific DRR measures with each household.
- ✓ The cash-grant project resulted in three times the number of shelters being built compared to the previous year's direct-procurement method.
- ✗ A gender balance amongst beneficiaries was not achieved, despite using a vulnerability list.

- ✗ It was challenging to identify the most vulnerable families. The urban context made this more difficult.
- ✗ The project did not address wider community planning issues of community sanitation and drainage, or community-level disaster risk reduction (DRR).
- ✗ It was not anticipated that some construction techniques, which returnees had brought back, were not earthquake-resistant, leading to weaker buildings.
 - There is ongoing discussion about whether smaller, single-room core shelters provide enough space.
 - Allowing households control over design required greater technical support from the organisation.
 - Separating chronic needs from returnees needs in urban Kabul was challenging.



Groups of five households were provided phased cash payments to allow them to build a one- or two-room shelters with sanitation facilities. People were given flexibility to build what they needed
Photo: Left: Jim Kennedy, Right: Jake Zarins

Before the conflict

In the 1970s the population of Afghanistan's capital, Kabul, was 500,000. Despite the fact that a range of different ethnic groups lived together in relative peace, some groups were discriminated against, with differing access to resources, property and services. As a result, the Hazara minority were living on the outskirts of the city whilst Pushtoon and Tajik groups occupied more central areas.

The 1978 revolution was followed by civil war and Soviet invasion. This led to a significant growth in Kabul's population as many people were displaced from rural to urban areas. The city's Hazara population increased tenfold, establishing new settlements in the western part of the city.

The collapse of Afghanistan's communist regime in 1992 led to an intensification of conflict, killing tens of thousands of people in just four years. During this period many city residents (mainly Hazaras) had fled to Pakistan, Iran and other parts of Afghanistan.

During this period all the houses in western Kabul were destroyed.

Conflict returnees

Since 2002 and the fall of the Taliban regime, over five million people have returned to Afghanistan.

Most of the returnees found that their own houses had been totally destroyed and rented shelter or stayed with host families. Many had land that they could use to

build shelter, but many households lacked the labour and materials.

By the end of 2011, more than 200,000 shelters had been provided for returning refugees and Internally displaced people (IDPs) by various different organisations under one national programme. However, there remained a national gap of 50,000 shelters.

The government set a target of the end of 2010 for the complete rehabilitation and integration of all displaced people. Two years later housing and landlessness remained significant obstacles.

The lack of available shelter or land in Afghanistan is the primary reason for many refugees remaining in Pakistan and Iran. The Ministry of Refugees and Repatriation (MoRR) launched a land allocation scheme at the end of 2005 to deal with this issue. The scheme has so far provided 42,000 families with temporary land ownership deeds.

Selection of beneficiaries

In 2011, districts 13 and 16 in the western part of Kabul were identified as the neediest areas of urban Kabul for shelter assistance.

The organisation worked with beneficiary selection committees established in each community. Each committee consisted of two staff from the organisation (one male and one female), a representative from the government, and the 'Gozar's Malik' (religious leader).

Beneficiary selection forms and the guidelines and criteria for filling them in were explained during workshops with benefi-

ciary selection committees. Land ownership documents were checked by the Maliks, who were able to resolve local and non-written issues surrounding tenure.

The pilot phase targeted 295 households, prioritising recent returnees from Pakistan and Iran. These were followed by IDPs, and finally, host communities. In addition to these main target groups, the organisation prioritized according to primarily landless, and then land-owning returnees who had been displaced or returned since 2008.

The final section was based on the following criteria:

- female headed households
- disabled headed households
- child headed households
- elderly headed of households
- victims of Gender Based Violence (GBV)
- large families
- very low income families with no regular income.

The most vulnerable families were given additional financial and technical assistance.

"The Community Driven Method (CDP) allowed me to purchase the material for my shelter according to my own choice. The design of my shelter unit was finalised in consultation with my family members."

Abdullah - Shelter beneficiary

Implementation

The organisation had been building shelters in Afghanistan for a number of years, but had previously directly provided construction materials. This was the first time that a cash-based, owner-driven approach had been attempted by the organisation in Afghanistan. The pilot project was implemented in 2011.

After signing a memorandum of understanding with the provincial authorities, the selection of beneficiaries began.

The project established beneficiary groups of 4 to 5 members to create community networks that would support vulnerable beneficiaries (especially women and disabled people). The whole group would not receive their grant instalments if one of the group members had not reached the agreed stage of construction. This condition forced the group members to help each other and work together.

Grants were paid out in hard currency (cash in envelopes) in four instalments. The cash was to be used for purchasing shelter materials. Mobile phone banking options were investigated but rejected as being too complicated.

In the original pilot project in Kabul, 102 out of 295 families opted to construct a single room shelter. This was mainly because the shelter plots were not large enough for the two-room shelters. As the shelters were constructed by the affected households, the dimensions of each shelter varied.

Technical assistance

During the shelter construction, households received support from the project technical staff. This included advice on the plot layout, ground clearing and foundation digging, stone masonry, brick masonry, seismic risk reduction measures and roofing design.

Handover

The houses were handed over to the households when they were completed and well dried. However some of the neediest people, who

had urgent sheltering needs and who could not afford rent, did not wait until the handover to move into their new shelters.

Technical issues

Key to the success of the project, the returnee population had the skills to build their own houses. Some people had learnt these in the construction industry in Iran.

Instead of providing fixed designs, the project provided a generic bill of quantity and technical advice to individual households to address disaster risks. This included advice on proper jointing for stone and brick masonry, the proper placement of lintels and roofing beams, and proper roof drainage.

The training provided by the field teams was accompanied by illustrated construction drawings.

The decision to give homeowners flexibility in what they could build was based on learnings from previous projects where a single, standard shelter design was issued. Plot sizes in Kabul vary greatly and flexible design allowed households to adapt constructions to the space available.

Some families piled sandbags around the foundations as a preventative measure to prevent erosion in case of flooding.

DRR components

Since Kabul has earthquake risks, timber braces were provided to all households to be used at each corner of each shelter. Families were also provided with technical training on disaster risk reduction.

As the cash-based approach allowed team members to spend more time with households, they were able to better explain seismic mitigation measures compared to previous projects.

Many people were interested in more modern materials and construction methods but were



Households were expected to make contributions of money and labour to the construction of their shelter.

Photo: Jim Kennedy

unaware of the greater seismic risks that such materials carry. Encouraging families to use more traditional materials and methods was challenging.

Logistics

In previous projects the counter programme had directly managed procurement and logistics, and this had led to many challenges. In contrast, in the community-driven approach, only timber for bracing, tool kits and hygiene kits were procured by the project and delivered to the beneficiaries.

The rest of the materials such as lintels, roofing materials, doors, windows and latrine slabs were procured by the households themselves. Households made a personal contribution of around one third of the costs of construction and materials.

Project follow up

The pilot project team was made up of six people with mixed skills, including engineers, community mobilisers and people with data-collection experience. In previous years this team had built 100 shelters per year using the direct procurement method. The cash-based approach nearly tripled this figure.

The success of the pilot project led to the implementation of the cash-based approach in other parts of Afghanistan and by the end of 2012, 60 per cent of the planned 2,075 shelters had been built in Kabul, Jalalabad and Herat.

A.2 Burkina Faso – 2012 – Conflict

Case Study: **Keywords:** Planned and managed camps, Construction materials, Emergency shelter, Transitional shelter / T-shelter, vouchers, Site planning.

Country:

Burkina Faso

Project location:

Férério Refugee Camp, Oudalan Province

Conflict:

Malian Refugee Crisis

Conflict date:

March 2012

Number of people displaced:

July 2012 (increased later in 2012):

IDPs in Mali: 150,000

Refugees - Burkina Faso: 100,000

Project target population:

Férério Refugee Camp:

3,000 households May 2012

4,000 households August 2012

Project outputs:

1,000 shelters

Occupancy rate on handover:

100 per cent

Shelter size:

21 m²

Materials cost per shelter:

US\$ 240

Project cost per shelter:

Unknown



Project timeline



Project description

This project provided temporary shelters for nomadic Tuareg refugees displaced from northern Mali to the Oudalan Province in Burkina Faso. Shelters were built through a self-help construction approach using traditional construction materials. Participation in the selection of the type of shelter to be provided was crucial since the refugees had already rejected other proposed solutions by other agencies. The project worked within the cultural norms of a Tuareg population where women were the main constructors of tents, and families moved their shelters according to nomadic traditions to increase spacing between shelters and tribal groups.

Strengths and weaknesses

- ✓ Beneficiaries felt involved in the process right from the first discussion around shelter design.
- ✓ The project was implemented through existing community structures which facilitated beneficiary selection as well as shelter materials distribution.
- ✓ Close involvement of the beneficiary communities guaranteed the security of both project staff and stored materials.
- ✓ The host government representatives on site were part of the coordination process.
- ✓ Staging the distribution of materials worked as an incentive to complete the shelters.
- ✗ Coordination with some other agencies could have been strengthened. Despite the change in site layout in terms of spacing between the shelters the providers of

sanitation services did not change their layout, leading to many latrines being either too far away or too close to other groups.

- ✗ Coordination was hampered by the lack of a camp management focal point.
- ✗ Site selection, though beyond the influence of this project, made accessing populations difficult as communication connections were poor.
- Site planning at Férério camp had to adapt to the cultural norms and social structures of the camp population. A traditional grid layout was inappropriate and was rejected by the refugees who preferred to group their shelters according to tribal affiliations and space them in a way that reflected their usual, nomadic way of living.



Shelter structure under construction.
Photo: Christian Jepsen



Completed shelter structure.
Photo: Ghada Ajami



Traditional tanned skin roof cover.
Photo: Christian Jepsen

Before the conflict

The Tuareg population in northern Mali is made up of nomadic and semi-nomadic groups moving across sparsely populated desert areas. Traditional Tuareg tent shelters are made from wooden supports covered with tanned animal-skin roofs, and are designed to be easily dismantled.

The semi-nomadic population construct mud brick houses with traditional tents erected close by. Although land is mainly owned by men, the Tuareg tent is built by women and is the property of the family matriarch.

Mali is one of the poorest countries in the world, with a life expectancy of just over 50 years and a Human Development Index ranked 175 (out of 187).

After the conflict

A large number of the Tuareg population of northern Mali sought safety in neighbouring countries. The Tuareg population targeted by this project moved mainly to the Sahel region of Burkina Faso but were asked by the Burkinabe government to move to managed camp sites.

By March 2012, Férié camp contained over 2,000 households. Four months later, in July, the figure had risen to 3,500.

Initially other organisations provided all-weather tents, but people refused to occupy them. Emergency tents were seen as too flimsy to protect people from strong winds and high temperatures.

This project was established to involve beneficiaries in the development of a shelter solution.

Beneficiary selection

The organisation received an assessment report from another shelter actor that concluded that 1,000 shelters were needed. These shelters were to fill gaps in support as some shelter solutions had already been provided.

Initially an agency proposed a shelter design based on a standard box-style shelter with a gable roof to be arranged in a grid format, fairly close together. Some shelters were built by an external contractor.

Both the design and the site plan were rejected by the refugees and this agency was invited to provide an alternative solution, securing extra funds to meet any additional needs.

Three criteria for selection were shared with the beneficiary groups, the United Nations and the government representative in the camp:

- households with a lack of adequate shelter
- households with elderly occupants
- vulnerable female-headed households who have no access to adequate shelter.

The community groups were organised by the refugees themselves and were based on traditional tribal structures. Leaders of these groups drew up a draft list of potential beneficiaries. This was used as the basis for an assessment by the agency in coordination with camp community leaders and the host government representative.

The final beneficiary list was presented to the group leaders, who communicated the outcome to the other families.

Implementation

Participation in all stages of the project was crucial so a sample shelter was built following discussions with community groups about the design. The sample shelter was then a focal point for suggested modifications before the final materials list was established.

The organisation procured the materials. Triple-weave plastic sheeting was procured (though not produced) in Burkina Faso and the quality was seen as better than plastic sheeting that had previously been distributed in the camp.

To prevent damage to the local environment by cutting down trees, wooden poles were procured from sustainable Eucalyptus plantations in the Southern regions of Burkina Faso.

All materials were first transported by truck to a hub three-and-a-half hours' drive from the camp and then to the camp itself.

The beneficiary communities were given responsibility for guarding the wood stored in an open-air, fenced-off area, while desirable items like plastic sheeting and mats were distributed immediately to reduce the risk of theft.

Each household was given a materials coupon. Structural materials were distributed first and, when the structure was completed, materials for covering the roof and walls were distributed.

Distribution was coordinated with the tribe leader who organised the order in which families would fetch their materials. The whole community of each tribe assisted in moving the materials to the construction site.



An overall view of one section of the camp.
Photo: Christian Jepsen

Field monitors checked the structures during and after construction.

As Tuareg women had a traditional leading role in tent construction, it was they who led the construction groups. Each group would complete one shelter at a time.

The community specifically said that they did not require the agency's support in construction and, in the case of vulnerable families, men helped to dig the pole-holes while the women groups erected the shelter. Due to the communal organisation of childcare and of many other often female-dominated activities it is not thought that the women were over-burdened by their construction responsibilities.

As a side-project, the agency contributed to the reduction of work carried out by children through the provision of donkey carts for the collection of water.

Site planning and WASH

Families did not like living in close proximity to each other and traditionally lived spread out.

The camp held more than 25 tribal groups. The camp population re-organised itself according to these groups. A standard camp grid plan could not be applied to this more "organic" spread of families and if the refugees did not like where they were sited they simply dismantled their shelter and moved it somewhere else.

Agencies working on water and sanitation continued place latrine blocks according to the site plan instead of adapting it to the settlement patterns of the refugees. As a result, a high percentage of the refugee population did not use the latrines either because of the long distance (sometimes up to 500m) or because some tribes refused to share latrines with other tribes.

Technical solutions

The shelter model chosen was similar to a traditional Tuareg tent. It had a wooden-pole structure but instead of the traditional tanned skins for the roof and walls plastic sheeting was used. In some cases families used the emergency tents that had been provided earlier as roofing material.

Tuareg tents are suited to the environmental conditions: high wind loads, high temperatures and sand storms. The shelter contained no concrete so did not worsen water scarcity. The sides of the shelter were made from mats which could be re-positioned in order to change the location of the doors depending on the direction of the wind.

The shelter could be disassembled and relocated to another location without any material wastage, and women knew how to maintain them. Materials could be taken with families when the camp closed.

"I am very, very happy. Look around, here is much more space", says Fatima the proud new homeowner surrounded by her children. "There is even enough space for the little ones to play inside, and I have room for visitors."

Tanned animal skins took too long to produce, and were not an option as a roofing material. To replicate the thermal insulation qualities of the skins, a set of nine woven straw mats were placed under the two plastic sheets.

The refugees paid a lot of attention to detail in construction. The two plastic sheets provided were hand sewn together while the 8mm rope connecting the plastic sheets to the roof was skilfully secured in place by tying it to the corner poles of the shelters.

Materials	Quantity
Stage 1 - structure	
Eucalyptus Poles Green wood. Length = 4m 6cm diameter at mid length	16
Eucalyptus Poles Green wood. Length = 4m 4cm diameter at mid length	18
String 0.3cm diameter	2x20m
Machete	1
Stage 2 - coverings	
Rope 0.8cm diameter	30m
Plastic mats (1.2m x 2.5m)	8
Plastic sheeting (4mx5m)	2
Straw mat (1m x 1.8m)	9

A.3 Colombia – 2010–2011 – Floods

Case Study: **Keywords:** Non-displaced, Housing repair and retrofitting, Advocacy, Infrastructure, Training.

Country:

Colombia

Project location:

Department of Chocó

Disaster:

Floods

Disaster date:

2010 to 2011

Number of houses damaged / destroyed:

Over 350,000

Project target population:

5,463 people in 5 communities
80 households in target village

Project outputs:

80 elevated houses
1.1km footbridge
Disaster risk reduction activities for 5527 people

Occupancy rate on handover:

100 per cent

Shelter size:

70m²

Materials cost per shelter:

US\$ 3000

Project cost per shelter

US\$ 5300 (including staffing, volunteers, and logistics)



Project timeline



Project description

The project used community participation to improve the overall living conditions of 80 families who were struggling to survive following flooding. It supported a total of 5,527 people in surrounding villages with disaster risk reduction (DRR) activities. Stilt construction was used to build 80 new houses and a 2.5m high, 1.1km long footbridge. Disaster preparedness activities, first aid, hygiene promotion and safe construction trainings were also provided. The project is now an example, both at regional and national level, of what can be done to support riverside communities to mitigate the effects of recurrent floods.

Strengths and weaknesses

- ✓ The project demonstrates (both locally and globally) that there is an alternative to resettling people affected by floods and that living with floods is possible.
- ✓ Long-term, positive impact on the community's resilience, disaster preparedness and social cohesion.
- ✓ As logistics costs were high, a greater impact was achieved by concentrating on a few communities.
- ✓ The disaster risk reduction (DRR) project included housing improvements, infrastructure reconstruction, food security, environmental education, hygiene promotion, livelihoods and training on how to elevate buildings.
- ✓ The model is easily replicated for other flood-prone communities.
- ✗ The project was relatively small-scale and resources

have not been allocated for large-scale replication.

- ✗ The project did not have either communication or advocacy strategies.
- ✗ Local government was involved late in the project.
- ✗ Water and sanitation components of the project were not resolved.
- The government had limited capacity to provide technical and financial support.
- High logistic costs demanded capacity from outside the village, staff from the organisation and local alliances.
- Risk management and DRR at local level is still solely focused on emergency response.
- Project timelines imposed by donors were very tight. The project needed to balance the timeframes and flexibility required for local construction practices, livelihoods and genuine participation against pressure to complete the project.



The project had a strong focus on training and disaster preparedness, sometimes using simulations. Photo: Sandra D'Urzo/IFRC

Before the floods

Chocó is a department in north-western Colombia, on the Pacific coast and is famed for its jungle and biodiversity.

As most of Chocó is inaccessible by road, rivers are traditionally the major transport routes.

The community of San José de la Calle was displaced by conflict in the region in the early 1990s. Since then, livelihoods have been based on timber exploitation and seasonal fishing. The remote location hampers development of alternative livelihoods and job creation, while municipal services such as electricity and water are scarce or non-existent.

In 2002, there was a massacre in the nearby town of Bellavista. Since then, international aid organisations distributed relief and made water and sanitation improvements in the area. San José de la Calle benefited from a latrine-building project, but unfortunately these were only usable in the dry season.

Until recent years, floods lasted about one month, isolating households, and interrupting schools and livelihoods. Families built mezzanine levels inside their homes to keep them and their possessions dry.

After the floods

The 2010 floods lasted six months, during which the community lost most of its economic resources. The severity of the flooding is expected to continue in future years primarily as a result of over-exploitation of the forests leading to silt deposits in the Atrato river.

Some people considered resettling closer to the main town but the community was attached to the collectively owned land. A national decree protects this ethnic group and other indigenous populations.

Implementation

The project was implemented with a focus on participation. Over the course of one year, the entire community contributed to create a village which serves as a model for other projects. The community council was the main decision-making entity.

Lumberjacks from the village worked together to cut timber and decided its price. Women cooked collectively during the construction, and children helped to carry smaller materials for the footbridge.

Continuous dialogue with the main community representatives (the council, women's groups, craftsmen and the lumberjacks union) facilitated collective decision-making. This was achieved during the donor's timeline of 15 months (one year of construction activities).

At first, craftsmen were not paid for the construction of their own houses, and only technical assistance was provided. Later, food for work and cash for work were provided to accelerate construction, though families still needed to continue with existing livelihoods activities.

Skilled carpenters were hired from outside the community. Construction was managed in teams of three people who were paid daily.

The main carpenter and his assistants received US\$ 340 for each completed house.

On-the-job training was provided to carpenters to ensure long-term knowledge transfer of techniques such as wooden pole treatment and replacement and the principles of elevated construction.

Initially, damaged tools were replaced by the project. Later it was decided that each carpenter or woodcutter would pay for his tools and keep them at the end of the project.

The project began by elevating an existing house and school building. However, a technical review stated that new construction, although far more expensive, would be more effective than elevating existing buildings.

A pilot house, elevated by 2.5m, was then built to demonstrate the building technique. Families would need time to adjust to the new design, especially in dry season, but were keen to live "on the first floor" in order to escape the effects of flooding. A total of eighty new houses was built.

The new footbridge design was based on a 3km long bridge built in another community. The bridge had shown to have a positive effect on psycho-social wellbeing, as villagers could stay connected with one another during the months of flooding.

A school, an elevated collective garden, a community centre and an elevated children's playground were also built.

There was no water and sanitation component to the project. Existing, partially-damaged latrines were dismantled.

Selection of beneficiaries

The entire community benefited from the risk reduction aspects of this project. In the selected village all houses were reconstructed.

Coordination

The project was coordinated with government departments and institutions. The government was



In one “model” village, the organisation built eighty elevated houses and community infrastructure.
Photo: Sandra D’Urzo/IFRC

willing to provide extra funds to complete the newly-built houses and helped to promote the project elsewhere.

Unsuccessful attempts were made to coordinate with other organisations to resolve the water and sanitation issues.

“We are happy because we are going to resist the waters, when the river will come, we will be here, ready, resisting the flooding”

Beneficiary

Community-based DRR

Five communities and schools were supported to enhance their preparedness for recurrent floods. This support included:

- risk management plans
- community risk maps
- emergency equipment
- trainings on disaster prevention for community councils and the local authorities
- training of thirty teachers and local authorities in school risk management
- risk awareness and self-protection training for school children
- a first aid post inside the schools
- two disaster simulations involving 820 people.

Several videos were produced during the project to showcase the DRR component as a model to other communities, and to increase the awareness of technical options to improve flood resistance.

In the targeted village:

- Carpenters were trained on the care and maintenance of the houses. 55 carpenters received a recognized training on safer construction.
- 480 household water filters and 500 individual filters were delivered.
- A solid waste management plan was established and a compost area organised.
- Seeds were produced in the collective garden to support replanting of timber species used for construction.

Technical solutions

Several elevated footbridges with a total length of 1.1km were built to connect the main dock with most homes, schools, community buildings and the community garden.

The bridge was constructed from a wooden frame with recycled wooden railings and paved with recycled plastic slabs (using 1 million recycled plastic bottles). It was one third cheaper than using new timber. Using the recycled materials also avoided using 2,800 timber slabs, equivalent to cutting 15 trees that would take up to 40 years to grow back.

The recycled plastic slabs were guaranteed for 20 years with reduced maintenance, three times the duration of timber.

Logistics

Construction involved the transportation of 24,500 sawn boards by boat.

Eleven woodcutters and five lumberjacks participated in the construction. The timber used was a local species of tree sourced from collective land or land belonging to individual households.

The timber was processed into planks in the forest and then transported to villages by boat where it was then distributed by hand.



Elevated walkways were built to enable the community to remain connected when the floods next came.
Photo: Sandra D’Urzo/IFRC

A.4 Côte d'Ivoire – 2010–2011 – Post-election Crisis

Overview:

Keywords: Returns, Household items, Construction materials, Core housing construction, Housing repair and retrofitting, Vouchers, Advocacy / legal, Training.

Summary

The November 2010 election in Côte d'Ivoire triggered violence that led to the displacement of up to a million people. The western part of the country was particularly affected. Families were displaced both within Côte d'Ivoire and over the border into neighbouring Liberia.

Support for returnees by international organisations focused on rebuilding communities as well as houses. About 30 per cent of the 24,000 households whose houses had been damaged or destroyed were targeted by the coordinated interagency response. About one third of those assisted were in spontaneous sites.

Organisations supported only the most vulnerable households, assuming that most households had the capacity to rebuild on their own.



Background

Côte d'Ivoire is a lower-middle-income country experiencing significant demographic changes. The proportion of people living in cities in Côte d'Ivoire has risen from 15 per cent in 1960 to 50 per cent in 2010.

Despite long term efforts by the government to encourage housing construction through the private sector, there remains a shortfall of around 400,000 houses.

Côte d'Ivoire's development has been hindered by conflict in 2002, 2008 and 2010–2011.

The conflict

The violence associated with the 2010–2011 post-election crisis was particularly destructive in the west of Côte d'Ivoire, where approximately 24,000 houses were damaged or destroyed.

At the height of the crisis in early 2011, up to a million people were thought to be displaced, including over 700,000 within or from Abidjan. More than 200,000 people fled to neighbouring countries.

Relations between some communities had been strained due to issues of immigration, ethnicity and access to agricultural land. The violence further damaged relations between the different communities.

Lack of physical security in the west due to ongoing hostilities meant that thousands of families

were afraid to return to their villages of origin. Many of those wanting to return cited damaged houses as one of the main impediments to return.

The fragile security situation continued well into 2012.

Emergency phase in 2011

Although the Coordination mechanism for the response was established in January 2011, a Co-ordinator was not in place until March 2011.

Between January and September 2011, organisations assisted 8,150 households with emergency shelter support. About 35 per cent of this assistance went to support the displaced people in various spontaneous settlements in the west, such as the Catholic Mission in Duékoué camp, which housed around 27,000 IDPs at its peak.

The rest of the shelter support, in the form of support for repairs and reconstruction, was largely targeted at returning IDPs and repatriated refugees.

Early Recovery Strategy

Given the problems at the core of the crisis, it wasn't simply the houses that needed to be repaired and rebuilt, but also the communities themselves. The goal was to support vulnerable households through a community-based approach that would promote positive relations within the community and to reinforce existing coping mechanisms. The following two case studies (sections A.5 and A.6) all adopted this principle in slightly different ways, depending on the context.



Non-food items were provided to returnees and those directly affected by the crisis.

Photo: Neil Brighton



24,000 houses were damaged in Western Côte d'Ivoire. It was estimated that nearly 65 per cent of the population would be able to rebuild their houses without external assistance.

Photo: Neil Brighton

After the emergency, the focus was on supporting vulnerable households to rebuild their mud-brick or wattle and daub buildings.

Self-recovery

Before deciding on a target for the number of households to support, an assessment was made of how many people would be able to conduct their repairs without external assistance.

In Western Côte d'Ivoire, the vast majority of households lived in houses that are built with materials found locally and were either constructed from mud-bricks or wattle and daub. The roofs were thatched or covered in corrugated iron. Though the house walls were prone to erosion from rain and wind, and were relatively weak, they were built by the households themselves and contributed to a high self-recovery rate.

By mid-2012, the affected communities themselves had rebuilt approximately 50 per cent (11,500 houses) of the destroyed mud-brick and wattle and daub houses. This type of construction made up approximately 90 per cent of the damaged or destroyed buildings.

Only vulnerable households were targeted, as a significant proportion of the population was both able and willing to rebuild themselves.

Although the government had the primary responsibility to assist those affected by the crisis, it lacked resources to support the entire population and was not able to respond quickly enough.

Of the 24,000 damaged or destroyed houses in the west, international organisations targeted 8,775 vulnerable households in 2012. Of these, 7,200 had earth-brick or wattle and daub houses.

Some organisations worked on confined masonry buildings, but this was a small proportion of the response. Return kits were also distributed to displaced households returning home.



Destroyed home - the majority of houses were made from wattle and daub or mud blocks.

Photo: Neil Brighton

Government response

The government made both food and non-food item distributions in the emergency phase. In the summer of 2012 the government announced that a permanent housing project would target 1,000 households in the Department of Duékoué. Though this capacity was welcomed, the decision was taken unilaterally with little consultation with the humanitarian community who had been working in the target area since mid-2011.

The coordination team

The shelter coordination team consisted of one coordinator and three protection monitors from a local organisation. It was in place from January 2011 to December 2012. The protection monitors assessed the damaged and destroyed houses, and assessed the capacity of communities to reconstruct without external assistance.

This team proved invaluable for collecting critical baseline data, which informed the shelter strategy in different organisations' project planning.

Closing of the coordination system

By mid-2012, the security situation in Côte d'Ivoire was beginning to stabilize and life was returning to normal. The decision was taken in August 2012 to close the coordination system by the end of the year. The table below summarises the collective goals for the response and the extent to which those goals were met.

Goal for 2012	Result achieved
Support 90 per cent of vulnerable households (6,489 households) with damaged or destroyed earth houses (mud-brick or wattle and daub) to rebuild by 31 st December 2012.	4,461 households
Support 25 per cent of vulnerable households (1,425 households) with lightly damaged confined masonry houses to rebuild by 31 st December 2012	434 households
Support 10 per cent of households (1,150 households) that are building back their own house with some material or technical assistance by 31 st December 2012.	200 households
Support 90 per cent of affected households (37,455 households) that lost essential household items with distributions of NFI Return Kits by 31 st December 2012	37,455 households



Self recovery: A man rebuilds his wattle and daub house without external assistance. Photo: Neil Brighton

A.5 Côte d'Ivoire – 2010–2011 – Post-Electoral Crisis

Case study: **Keywords:** Returns, Urban neighbourhoods, Construction materials, Core housing construction, Housing repair and retrofitting, Vouchers, Advocacy / legal, Training.

Country:

Côte d'Ivoire

Project location:

Duékoué, Western Côte d'Ivoire

Conflict:

Post-electoral crisis

Conflict date:

2010 to 2011

Number of houses damaged:

24,000 in Western Côte d'Ivoire

Number of people displaced:

1 million people nationwide
150,000 displaced in the West

Project target population:

1,465 households
7,325 people

Project outputs:

1st project: 335 households
2nd project: 1,130 households

Occupancy rate on handover:

Between 75 per cent
and 100 per cent

Shelter size:

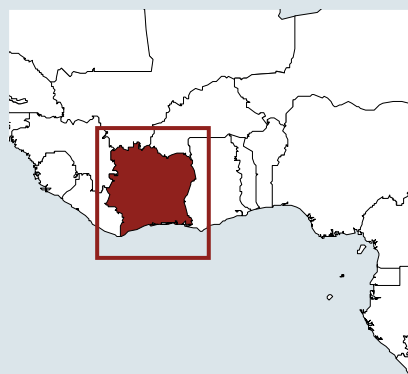
28m², 2 rooms.

Materials cost per shelter:

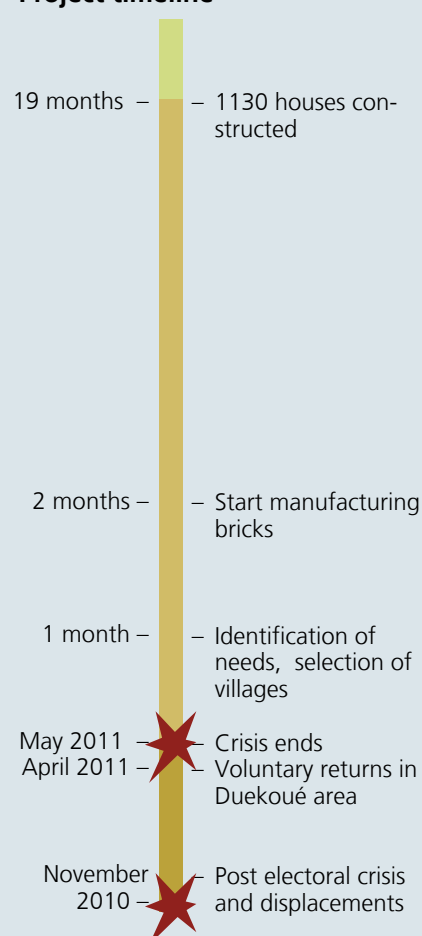
US\$ 580 Materials
US\$ 80 Labour

Project cost per shelter:

(Total project / number shelters):
US\$1070



Project timeline



Project description

The lead organisation worked with three partners to provide houses for vulnerable returnees, whose house was damaged by the post-electoral crisis. The project had the goal to sustainably improve the living conditions of returned households by providing one shelter per household. At the end of the project over 1,130 houses were built or rehabilitated by one of the three partners.

Strengths and weaknesses

- ✓ Every beneficiary helped to make mud-bricks for the whole community. This led to strong involvement of the population throughout the project.
- ✓ By supporting local technicians, the project injected cash within the communities.
- ✓ Training sessions entitled “building back better” gave people the opportunity to share experiences and construction methods and to discuss different related issues such as sanitation and hygiene.
- ✓ Having access to shelter was a starting point for a new life and a durable return.
- ✗ The project found it challenging to ensure that the beneficiaries were the owners of the land and houses because many people had lost their papers during the crisis.

- ✗ Difficulties arose in validating beneficiary lists as some chefferies saw opportunity to recover influence over some beneficiaries and NGOs. Traditional decision-making systems, through “chefferie” were undermined by the post electoral conflict.
- ✗ In a context of rivalry between communities and a weakened social cohesion, the shelter project targeted mainly people from one ethnic group.
 - There was an unforeseen challenge of holes left from brick production. These were dangerous for small children during the rainy season and encouraged poor sanitation making mosquito breeding areas. Work was required to reduce this risk.
 - The organisation provided sand to beneficiaries. This was so that they could spend time on agricultural work rather than collecting sand.

Background

See A.4 Côte d'Ivoire – 2010–2011 for background.

After the conflict

As a result of improved security in Côte d'Ivoire in the West of the country, part of the population displaced during the post-electoral conflict had started to gradually return to their places of origin. However, there was significant damage to society, the economy and infrastructure.

In the communities of return, there were significant humanitarian needs and serious risks of secondary displacement.

According to assessments, food and shelter were indicated by returnees as overwhelming priorities, followed by education, health-care and water.

Intercommunity tensions, land disputes and lack of access to basic services represented major protection threats to returnees. Without resolving housing issues it would be difficult to address social needs.

Selection of beneficiaries

The organisation assessed many issues, including the numbers of destroyed houses, ongoing displacements, and returns, mainly in two locations. Households were selected based on criteria defined by the organisation with the communities. Two non-negotiable criteria were that:

- the household was affected by the post-electoral crisis
- their house was either damaged or destroyed.

Other criteria, such as the household social and economic situation before/during/after the crisis, were agreed to better assess the household's vulnerability with respect to shelter security.

Based on these criteria, a pre-selection list was written down by each village committee, if it existed, or the Village Chief.

People on this list were surveyed with around fifty questions to verify levels of vulnerability. The survey



Households participated throughout the construction, manufacturing bricks, preparing mortar and conducting other tasks.
Photo: Antoine Vollet

led to the final selection list of beneficiary households.

Land deeds verification

Before the beginning of the construction work, the land deeds that households provided were authenticated. If documents were not available, the identification of land ownership was made in coordination with the local community. In every case the signature of the village chief was required.

In the countryside and the villages, the traditional informal system is predominant. There was no choice but follow the statements of the chief of lands and the village chief. In some questionable cases, the organisation also interviewed the neighbours. The land service of the municipality was sometimes also able to help.

There were some cases where there were lacking title deeds, and conflict over the land. This was often due to conflicts between siblings.

Eventually only 6 households were excluded on account of land not being identified.

Implementation

All construction materials were provided. Doors and windows were constructed by local carpenters. Metal sheets were given for the roof.

One mason and one carpenter were paid to work on several houses. In some remote villages

householders recruited builders, who were then paid with vouchers.

The organisation provided tools and equipment that had to be given back at the end of the construction

Every step of construction or rehabilitation was checked by a technical supervisor and the team leader. A form with key points was completed to check whether or not the house was ready to be occupied.

Each beneficiary participated in the following activities:

- manufacture of mud bricks
- preparation of the mortar
- involvement throughout the construction so that they could later upgrade their houses.

Training

Regular trainings and meetings were organised by the organisation in order to keep a high level of motivation and involvement throughout the project. Specific attention was paid to the following aspects:

- In most communities, the population was not accustomed to working together and every step of the project required a meeting with all households.
- Rehabilitations often require technical skills and as a result are led by local masons and carpenters. To ensure participation, beneficiaries were asked to collectively produce mud-bricks.
- Some beneficiaries finished their houses earlier than the others.



Roofing with corrugated irons. (Toa-Zéou)
Photo: Daniel N'dri Yao



Drying mud bricks. (Niambly)
Photo: Damien Laporte

They were required to continue participating in the fabrication of mud-bricks.

The following trainings were conducted:

- Mobilisation and the role of the committee: The committee was established to assist the organisation in the daily work and to take project ownership. Trainings about mobilisation were repeated every time they were needed.
- How to improve the shelter: Before the households choose the shelter design, a training gave advice on improving the resistance of a house against rain and humidity (simple principles of the reaction of mud-bricks to humidity, and how protect the base from water).
- Explaining what is expected from the committee members and role allocation (e.g. president, secretary, storekeeper).
- There were occasional awareness raising activities regarding cleaning the village.

The trainings were conducted by the mobilisation team members. Technical trainings were given by the technical supervisors.

Handover

When the project was over in a village, the village committee initiated a key-giving ceremony.

Coordination

Few organisations were working in the same area, and coordination helped to avoid gaps and duplications in areas targeted by the different actors.

Coordination also allowed organisations to exchange information on technical issues and challenges faced as well as to share analysis about socio-economic trends.

Technical solutions

Two designs were proposed for the construction, and households chose the design that they wanted:

- Classic: walls made of dried mud-bricks joined by mortar with a corrugated iron roof supported by a wooden roof structure.
- Improved: This was a more rain resistant shelter. The walls were made of dried mud mixed with cement bricks, with cement mortar on the base and the first four rows, and with mud mortar for the rest of the building. The roof and its structure were the same as the traditional design.

Rehabilitations

Where buildings were rehabilitated, repairs were based on an assessment of needs and observed damage. Most of the time, they consisted in replacing or repairing the roof.

Every building was assessed by the technical supervisors who completed a bill of quantities. This was then checked by the technical team leader and the programme manager. A random control took place in every village, led by the Program Manager and Technical Team Leader.

Sometimes, the level of support required was too high for the available budget. In these cases the beneficiary household was asked to provide materials to fill the gap.

Staffing

The entire project was managed by a staff of 22 people: A project manager assistant, a field logistician, a mobilisation team leader, 7 mobilisation agents, a technical team leader and 11 technical supervisors. The team used 4 cars (pick-ups and one 4x4)

Logistics

In each village, with the support of the population, a storage area was identified for all construction material for every household. This area was managed by a local storekeeper chosen by beneficiary households and supervised and trained by the organisation.

All supplies were purchased from the nearest town of Duékoué.

Materials list

Materials	Quantity
Wall and base construction:	
Sand	3m ³
Cement "A 32.5 N"	12 sacks
Mud-brick	1,200pcs.
Red wood 15cm x 3cm x 400cm	1pc.
Doors and windows:	
Plank 25cm x 4cm x 400cm	7pcs.
Rafter 8cm x 6cm	4pcs.
Nail n°6	2kg
Nail n°8	1kg
Nail n°10	1kg
Crochet medium	2pcs.
Pairs of split hinge 140 steel	4pcs.
Paris of split hinge 110 ordinary	4pcs.
Door handle	2pcs.
Lock	2pcs.
Wood screw	1 packet
Carpentry:	
Rafter 8cm x 6cm	18pcs.
Rafter 6cm x 4cm	12pcs.
Nail n°8	1 packet
Wire	15m
Roof:	
Corrugated iron (2m x 0.8m)	33
Nail n°6	2 packets
Nail n°8	1 packet
Rubber band for washers	5pcs.

A.6 Côte d'Ivoire – 2010–2011 – Post-Electoral Crisis

Case study: **Keywords:** Returns, Urban neighbourhoods, Construction materials, Core housing construction, Advocacy / legal, Training.

Country:

Côte d'Ivoire

Project location:

Duékoué, Western Côte d'Ivoire

Conflict:

Post-electoral crisis

Conflict date:

2010–2011

Number of houses damaged:

Approximately 24,000 houses in the west of the country

Number of people displaced:

1 million people nationwide
150,000 displaced in the West

Project target population:

8,046 people

Project outputs:

1341 shelters

Occupancy rate on handover:

99% of the first 421 shelters occupied in July 2012

Shelter size:

36m² (3 rooms) for the house + 2m² for the latrine.

Materials cost per shelter:

US\$ 585 (Material), US\$ 70 (Labour)
US\$ 200 (Beneficiary contribution)

Project cost per shelter:

US\$ 886



Project timeline



Project description

This shelter intervention built 1,341 shelters, supporting participation at the household and community levels through self-help groups and shelter committees. The shelter design used abundant local resources and promoted a design well known by the beneficiary households and local builders. The goal of the project was to contribute to the return process through shelter rehabilitation for the most vulnerable households.

Strengths and weaknesses

- ✓ More than half of the work was completed by the beneficiaries through self-help groups.
- ✓ Maximises the use of local resources which provide all the masonry material (bricks and mortar) while at the same time limiting local environmental impact.
- ✓ By adapting the design, and ensuring strong community involvement and good quality of work, capacity to build and to maintain shelters was improved.
- ✓ By using mud blocks and mortar, the organisation built larger shelters with the same cost as shelter projects led by other organisations.
- ✓ Given that one of the major concerns of the IDPs and refugees was the loss of their homes, shelter reconstruction supported durable return after the crisis.
- ✗ It was sometimes difficult to verify whether the house was destroyed during the 2010–2011 post

electoral crisis, or as a result of a previous crisis.

- ✗ The project staff found it challenging to resolve land tenure disputes. There was no formal system of land tenure security, and some disputes arose when shelters for migrant households were rehabilitated. Work continued into 2013 to solve the disputes.
- ✗ The second phase of the project began a few months before the start of the rainy season in March and ended two months after the rainy season in December. This greatly affected the production of mud bricks as well as masonry works.
- ✗ Despite an initial awareness campaign at the start of the project, it was necessary to regularly re-explain the beneficiary selection criteria, especially with newly arrived returnees that could not be selected given the time and resource limitations of the project.



By using mud and other local resources, the project was able to reduce costs and build more shelters.

Photo: Yao Albert Konan

Background

See [A.4 Côte d'Ivoire – 2010–2011](#) for background.

Selection of beneficiaries

The first project was implemented in Duekoué and Bloléquin, departments where the reported destruction was most severe. About 2,200 houses were destroyed in the 11 selected districts.

The communities provided their own list of households, which was confirmed by a door to door survey.

The vulnerability criteria were based on: gender of head household, age, presence of disabled people in the family, household size, household economic resources, food security scoring, ownership or access to land, and willingness to participate in the reconstruction of the shelter.

The provisional lists were publicly posted for two weeks to allow for feedback from the community.

Land

Formal land documentation generally does not exist in Western Côte d'Ivoire. Sites were visited with the traditional authorities to certify that the head of family was the landowner.

There were some conflicts between different communities, often between Autochthon communities and migrant communities.

Only 40 households out of 2,200 had land tenure issues that required some external intervention...

For 40 families with land issues, solutions were found by working with the local administration. This was done with the assistance of a legal assistance programme that the organisation was running. It took about four months to agree on durable land for these families.

Implementation

2,500 mud bricks were produced per household (2,000 for the shelters and 500 for the latrine) through the work of the self-help group formed of 8 households. Each self help group was provided with tools and brick moulds at the start of the project. A community mobiliser and the shelter committee supported the beneficiaries throughout the process.

The organisation started construction once the beneficiaries had produced the required number of mud bricks and dug the latrine pit. The first step in the construction was the trenching and laying of the foundation.

The wall was built in three steps, with two days to dry at each step: 1) five rows of bricks, 2) five rows of bricks, and 3) build the gable. The work was done by a mason while the household prepared the mortar and supplied the necessary water.

Constructing the roof took two days: one day for the carpentry and another day to fix the corrugated roofing sheets. Simultaneously, the mason built the latrine walls.

Once all houses in the village were completed a closure ceremony was held.

Self help groups

Self-help groups were created with the aim of encouraging collective work, especially to ensure bricks were available for weak, old or disabled people. In practice, it was almost impossible to mix people from different communities to work together, and it was difficult to stimulate a team-work with 8 to 10 families to produce enough bricks. The majority of households decided to work alone or with family members.

At the end of a training session, each self-help group received a construction kit to share (spade, hoe, shovel, 1m³ water tank and jerrycan).

Shelter committees

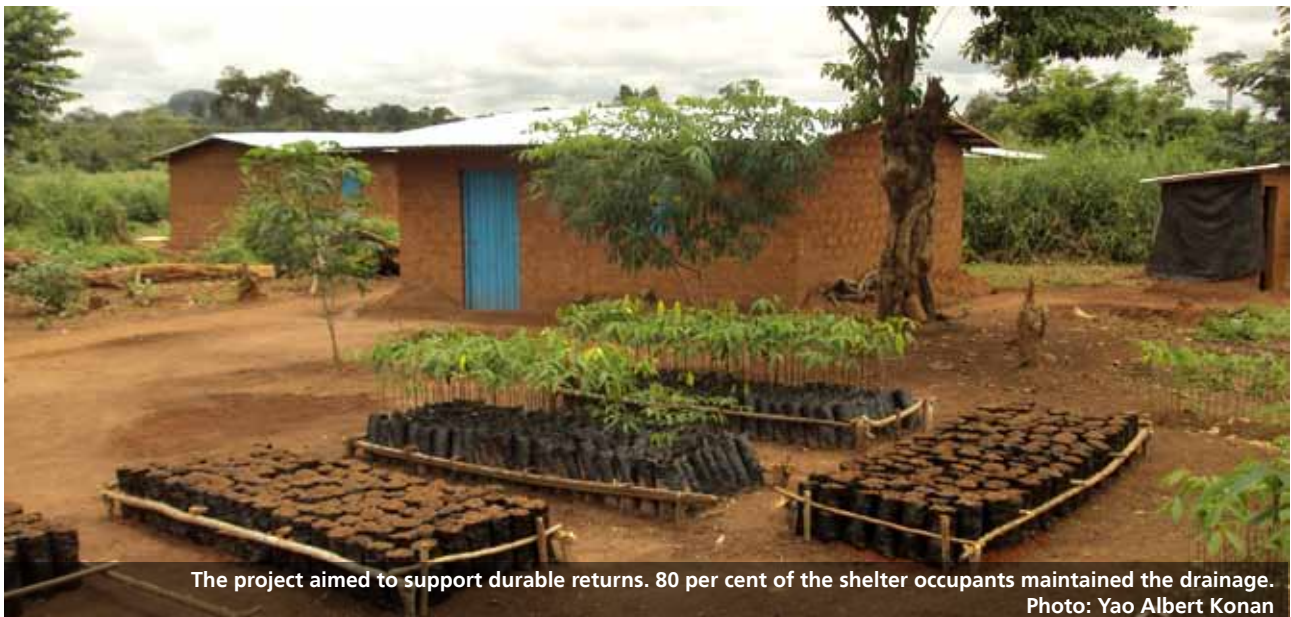
Shelter committees were established to empower and mobilise people in the project. They regularly checked on the number of bricks made, and created a ranking which determined the order in which they would build houses.

Training

Basic messages were shared about maintenance of the drainage, plastering the sill as well as door making and installation of latrines.

Each household received a brick mould. Trainings about mud bricks production and self-help group work were held at the start of the project. These trainings took about half a day per group and were led by a site manager.

Each household received two 1½ hour trainings on shelter and hygiene promotion. In total there were six trainers (five technicians and one social mobiliser).



The project aimed to support durable returns. 80 per cent of the shelter occupants maintained the drainage.
Photo: Yao Albert Konan

Coordination

The main humanitarian actors acting in the shelter response met twice a month until July 2012 thereafter meeting once a month. Meetings were held in both Abidjan and in the West.

Coordination helped to define the areas of intervention between the different organisations as well as to communicate figures from the start of the returnee movement. In addition, coordination was essential in order to share information on design, costs and to adopt a common response on the ground.

Technical solutions

Mud bricks were selected as the easiest way to ensure a good quality of implementation, as it is a very common construction material in western Côte d'Ivoire. Cement was not used in the mortar as it would be above local standards and would increase the cost per shelter thus decreasing the number of beneficiaries.

The organisation referred to the shelters as "improved design" relative to other houses on account of the corrugated iron roofing sheets, latrines and quality of the platform. It was based on a common design of shelter in Western Côte d'Ivoire but was larger than many houses in the area.

Staffing and structure

The organisational structure was:

- one social mobiliser responsible for group mobilisation, hygiene promotion and assessments
- five site managers (one for two to three locations) responsible for following works, masons, carpenters, trainings and materials supply. Site managers and mobilisers spent 80 per cent of their time on the ground
- six community mobilisers (one for two locations). Locally hired community mobilisers received a monthly allowance and monitored construction
- 11 committees in which positions were chosen to represent the three communities in the region
- one project coordinator to supervise the operations.

Logistics

Tenders were issued for reinforced concrete slabs for the latrines, corrugated iron sheets, timbers and other materials. Suppliers delivered directly to each community, except for roofing sheets, which were centrally warehoused.

The mud bricks were produced locally in the communities. Each household stored them close to the future construction site.

Field warehouses were set up to store timbers, frames and equipment.

Shelter committees distributed materials supervised by the organisation. Materials were distributed on completion of each phase of construction. Special attention was paid to the corrugated iron, as households were tempted to sell it.

60 to 80 different masons and 10 to 20 different carpenters were directly contracted, mainly from the villages where the shelters were to be built.

Maintenance

Around half of the shelters were upgraded by their occupants with concrete screed and plastering. However people mainly plastered inside the room in preference to plastering the façade, failing to maximise shelter durability.

At the end of 2012, about 80 per cent of the drainage around the shelters was still maintained. More than three-quarters of the latrines were in use, although some were used as showers. Hygiene promotion activities continued into 2013.

Some masons contracted by the organisation built the house design for other private contractors, but they did not use metal roofing sheets due to the cost.

Materials list

Materials	Quantity
CGI sheets	45 pieces
Timbers	33 pieces
Mud bricks	2,500 pieces

A.7 Democratic Republic of Congo – 2002 – Volcano

Update:

Keywords: Returns, Urban neighbourhoods, Household NFIs, Construction materials, Transitional shelter / T-shelter, Community engagement, Mass communication.

Country:

Democratic Republic of Congo

Project location:

Goma

Disaster:

Goma volcano eruption in 2002

No. of houses damaged:

15,000 houses destroyed
(20 per cent of Goma's housing stock)

Number of people displaced:

300,000 people displaced

Project outputs:

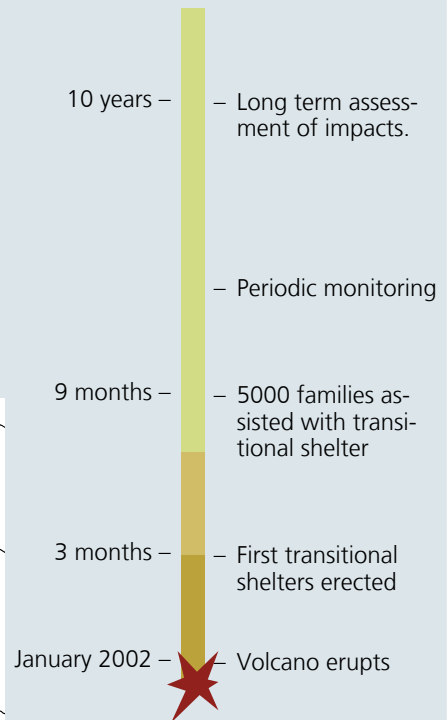
5,000 families supported with shelter and latrine packages

Shelter cost:

US\$ 250 average cost: Shelter and latrine (materials and labour)



Project timeline



Project description

This case study summarises an assessment by a major donor of the transitional shelter and recovery programming that it funded in Goma following the volcanic eruption in 2002. The assessment was conducted ten years after the initial response. The assessment found that transitional shelter did help to facilitate the transition to permanent housing, and became a base for many livelihood activities. It also found lasting impacts from both the settlements approach taken and from the supporting activities to help people in Goma to “live with risk”.

Strengths and weaknesses

✓ *Transitional shelter really can facilitate the transition to permanent housing.* As intended, nearly all of the original 5,000 “t-shelters” have been improved in some way as part of making it a permanent home. A site visit 2012 noted that most beneficiary families continue to live in their transformed transitional shelters. After ten years, some families are still making improvements leading to permanence, suggesting that the process of incremental housing development is both evident and likely to continue in the foreseeable future.

✓ *Transitional shelters have become “shophouses”.* As intended, many project beneficiaries have expanded their shelters to create space for livelihood activities of all kinds, thereby either restoring livelihoods lost in the disaster, or creating new economic activity using the shelter as a much-needed platform for production. This has contributed to both community and regional economic recovery since the volcanic eruption.

✓ *A deliberate focus on “Shelter and Settlements” is a critically needed approach to humanitarian assistance in urban areas.* Longer-term recovery was dependent upon regenerating its urban economy. Providing

transitional shelter in the city, based on the “city-focused” approach, maximised and concentrated the economic benefits associated with investments made by the humanitarian community. In turn, residents have had better access to jobs and public services in an urban context than in a remote camp, contributing further to the recovery of their city. Disaster Risk Reduction measures were incorporated into the reconstruction of road and service networks, to enhance both evacuation options as well as access to land and housing markets. The city-focused approach orientated humanitarian assistance towards settlement planning and also reflected beneficiaries' wishes to return to their own neighbourhoods.

✗ In *Shelter Projects 2008*, the implementing organisation noted:

- ✗ For families with eight or more people, shelters were initially not big enough.
 - ✗ Some people felt that plastic walls compromised their privacy and security.
- The project was one of the first-ever attempts by the donor to promote an explicit shelter and settlements approach to shelter activities.



Left: Recovery work began as lava cooled.
Right: Road work was linked to evacuation planning.
Photos: USAID/OFDA

The volcano

(See case study A.1 in *Shelter Projects 2008*)

Nyiragongo, a volcano located approximately 16 kilometers (ten miles) north of Goma, the major town in Eastern Democratic Republic of Congo (DRC), began erupting on 17th January 2002. Lava flowed from the southern flank of the volcano, heading towards Goma.

This eruptive activity triggered an exodus of Goma, a city of approximately 450,000 people. Of which an estimated 300,000 people fled briefly to Rwanda, while others fled to settlements to the west of Goma as well as elsewhere within the DRC. Most people returned to the city within three months.

The lava flows and subsequent fires caused severe damage in Goma. An estimated 13 per cent of the city's 35km² land area was covered by lava. It heavily inundated the central part of the city, destroying up to 15,000 dwellings (20 per cent of the city's estimated housing stock). In inundating the most developed portion of the city, arguably the most developed portion of eastern DRC, the lava flows destroyed numerous economic enterprises and community structures, and thus thousands of livelihoods.

An estimated 90,000-105,000 people, many of whom were already vulnerable because of conflict-induced insecurity and limited economic opportunities, lost their homes and other assets, and were in need of shelter.

Although eruptive activity ended within 24 hours, seismic activity related to the volcano continued until early February 2002. On February 9 seismologists declared that the eruption was over.

Since early 2002, Goma has subsided by nearly 50cm. Minor subsidences have periodically occurred as a result of on-going tectonic activity.

Response

With thousands of jobs lost, and the urban and regional economy devastated, national and international organisations mounted a rapid response, with the international community contributing a total of US\$ 40 million in assistance.

In this case-study, the donor's share of the contribution was nearly US\$ 5 million. This included US\$ 2.6 million in emergency relief: water, food, health, and non-food assistance (including blankets, household goods, and plastic sheeting); and a US\$ 2.3 million programme featuring a transitional shelter project and disaster risk reduction activities.

The response featured the design and implementation of one of the donor's first transitional shelter projects.

Recovery

After critical needs had been addressed, the humanitarian community began to develop strategies for helping residents of Goma rebuild their lives and livelihoods. Shelter quickly emerged as the most pressing need for affected families.

People displaced by the volcano needed a place to call "home".

Options for meeting this need included moving the entire city to a new site, dispersing people to different regions of the country, moving people into camps, and a "city-focused" option aimed at rehabilitating Goma itself, allowing as many people as possible to remain. These options were discussed at length among representatives of all key stakeholders.

The perceived and real security and political conditions in the immediate region affected decisions in shelter assistance by constraining relocation options to the east, north, and west of Goma. The city is also located on the northern shore of Lake Kivu, making large-scale southern movement of the displaced impractical.

There was also the local security consideration that many people wished to remain close to their former houses to prevent appropriation or looting.

Following consultations with affected communities and authorities, the donor devised a two-pronged strategy that would bring new life to Goma and reduce the impacts of future disasters.

Transitional Shelter

Due to the security, safety and economic concerns of the affected population, the first element of the programme was to support a city-focused transitional shelter program, devoting 80-85 per cent of program funds to the Goma urban area. The donor and its

“The central business district, buried under rock, is re-emerging; there is even a new Volcano Internet Café on the edge of the destruction. The camps set up for displaced residents are now mostly shuttered, and Goma is experiencing something of a housing boom.”

The New York Times (emphasis added), November 10, 2002



Transitional shelter (left) has evolved into permanent housing (right) for thousands of families. Photo: USAID/OFDA

partners determined that there was sufficient space in Goma to shelter residents there, and that the existing social and economic infrastructure, even post-eruption, made it easier to assist people in the city rather than elsewhere.

The donor funded a single organisation to provide shelter in Goma to assist 5,000 households. All of the households were assisted within nine months of the eruption. Other donors saw the efficacy of this strategy and provided a combined total of 8,000 additional households with transitional shelter. A further 2,000 households received other assistance from a variety of other organisations.

Assistance was used to expand or supplement host family homes, or build on under-used or vacant private residential parcels of land. Shelter supplies were sufficient to create 21m² of covered living space for an average beneficiary household of up to six people. The supplies included plastic sheeting, zinc roof sheeting, wood framing, and concrete screed flooring. A modest latrine was also provided.

Three-quarters of households were assisted on land occupied by host families (relatives or friends); many of these beneficiaries have remained on hosted land.

Living with risk

The second element of the strategy was rooted in the basic message of learning to live with risk: a Disaster Risk Reduction programme was designed to promote improvements in volcano hazard mon-

itoring (provision of equipment, staff support, and technical assistance to the Goma Volcano Observatory).

The donor also sponsored a two-year, community-based Disaster Risk Reduction program linked to the Goma Volcano Observatory to enhance early warning systems, upgrade evacuation routes, and improve community awareness of what to do and where to go when eruptions and earthquakes occur.

The road network was expanded following discussions with local officials and representatives. This was intended to increase the number of evacuation routes.

Outcomes

Despite the considerable changes in Goma during the 2002-2012 period, including recent conflict in and near the city, several outcomes of the donor-supported post-eruption activities have become visible over time:

- In addition to providing much-needed shelter, the city-focused programme had a significant impact on Goma's economy. Beneficiary families supported nearly 45,000 person-days of labour to transform their transitional shelters into permanent homes. This generated nearly 3,600 new jobs, and helped to jump-start economic recovery in Goma.
- Volcano monitoring is ongoing, with most of the equipment provided still functional, though upgrades are needed.

- The Goma Volcano Observatory continues to operate many community-based education activities, although updating is required. Activities include providing volcano activity reports to radio stations, sharing information at a local volcano information center, and updating alert levels in public areas.

- Over time, nearly all beneficiary families transformed their transitional shelter into permanent housing, resulting in the re-establishment of local markets and communities, contributing to overall recovery.

The rapid response to the 2002 volcanic eruption, the incorporation of Disaster Risk Reduction into the response, and the explicit shelter and settlements approach adopted were aimed at strengthening the resilience of Goma's citizens by promoting recovery and lessening the impact of future disasters.

The 2012 assessment by this donor found that the activities that it supported have contributed to a transition to recovery and reconstruction. This outcome is notable, for it demonstrated the utility of using shelter as a means of promoting economic recovery and linking humanitarian community shelter activities to the process of longer-term permanent housing development. Furthermore, shelter activity was deliberately concentrated in neighbourhoods, where people wanted to resume their lives and livelihoods. It enabled people to learn to live with risk, supporting them with risk reduction activities.

A.8 Ethiopia – 2011 – Sudanese Conflict

Case Study: **Keywords:** Planned and managed camps, T-shelter, Site planning, Training, Tools, Construction materials, Infrastructure.

Country:

Ethiopia

Project location:

Bambasi camp, Assosa

Conflict:

Sudan and South Sudan conflict

Conflict date:

September 2011

Number of people displaced:

40,000 refugees by end of 2012

Project outputs:

Camp for 12,000 people (3600 households)

2,175 shelters built (two organisations, 70 percent built by one organisation)

Shelter size:

<2 people: 10m²

3-4 people: 14m²

4-6 people: 21m²

Cost per shelter:

US\$ 640 - 10.5m²

US\$ 800 - 14m²

US\$ 920 - 21m²



Project timeline



Project description

The organisation planned and built a camp for Sudanese refugees. Semi-permanent shelters were constructed by refugees, with two partner organisations providing materials, carpenters and training. Refugees were able to chose their own plot configuration and the shelters were constructed with locally procured materials.

Strengths and weaknesses

- ✓ The shelters followed local housing designs to make them cool in the day and warm at night.
- ✓ The shelters were cost-effective, and were durable alternatives to tents.
- ✓ Materials were procured locally, reducing transport costs and injecting cash into the local economy. This provided some economic compensation to the host community.
- ✓ Shelter dimensions were tailored according to family size.
- ✓ Each plot was provided with a fence, a latrine and a shelter.
- ✓ Refugees contributed labour to build the shelters. This helped to foster a sense of ownership.
- ✗ Initial plans to for the organisation to build the shelters itself were dropped as other organisations had management systems better suited to implementation.
- ✗ Technical staffing capacity was a constant challenge.

- ✗ Difficulties in sourcing and transporting mud for the walls were not foreseen.
- ✗ Initial estimates of construction time were too low, and additional carpenters and masons were required. Fewer shelters were built than initially anticipated.
- ✗ Many refugees did not receive a shelter. Of those who did, many received a tent whilst waiting.
 - Bamboo is grown extensively in the area, the eucalyptus was sourced from a neighbouring state owned forest.
 - There was a very strong input from the government of Ethiopia in all issues relating to the camps.
 - Many families were separated when the first families arrived. The rehousing of refugees was undertaken in parallel with replanning the camps and a family reunification exercise.
 - Sudanese refugees brought large numbers of livestock with them. Space for animals in the camp had to be allocated (See B.3).



Refugees were supported with materials, carpenters and masons to build tukuls based on the designs used by the host community. The refugees contributed labour. Photo: UNHCR

Before the influx

Sudanese refugees have sought safety in Ethiopia since 1969, first settling in the Gambella region. Additional refugee influxes 1983, 1987 and the early 1990s led to the creation of five refugee camps in western Ethiopia. Three were established in the Gambella Regional State and two in the regional state of Benishangul-Gumuz in the area surrounding the town of Asossa.

Following a peace agreement between north and south Sudan, refugees began returning home from March 2006 onwards and three of the camps could be closed. 23,000 refugees remained in one camp in Gambella and a further 4,000 remained in one of the Assosa camps. The refugee population included several hundred refugees from the Democratic Republic of Congo. Those remaining in the camps included several hundred Congolese people.

Displacement in 2011

Fighting recommenced in September 2011 in the Blue Nile State of Sudan, displacing more refugees into Ethiopia.

By mid October 2011 there were an estimated 54,000 Sudanese refugees and asylum seekers in Ethiopia. About 34,000 were registered and accommodated in three refugee camps: Sherkole and Tongo near Assosa and Pugnido near Gambella.

Most of the new arrivals from the Blue Nile State stayed with host communities in border areas, and a transit centre was established at Ad-Damazin. With the camps at full capacity, this transit site became more permanent. Given the scale of the influx of refugees, new camps were needed.

Site selection

Negotiations began with the national government's refugee agency and the local government to identify sites.

A 450 hectare site owned by the adjacent village was identified at Bambasi, 50km from the border. It had with suitable drainage and access and was around 600km or a two day drive from Addis Ababa, the capital of Ethiopia.

The host community and the refugee population had a similar tribal heritage which, once some initial differences were resolved, led to a good relationship between the two communities.

Site planning

From March 2012 the preparation of the master plan began. The plan took four months to develop and agree. The process was significantly delayed by complications in awarding the contract to build the access road.

The camp was designed to be no closer than 500m to the village. The camp was divided as follows:

- Number of Zones: 3
- Number of Blocks: 40
- Number of Communities: 265
- Number of Family Plots: 5,240
- Average Plot Size per Household: 15m x 10m

Site development

Despite delays, by the summer of 2012 plot demarcation had begun and the road was upgraded in order for it to be functional during the rainy season.

Once Bambasi camp was established, water was provided from eight shallow wells (up to 60m deep). Later three boreholes were developed and a system of 34 tap stands was established.

Shelter construction

The organisation initially planned to build all of the shelters itself, and built some sample shelters. However, it became clear, that the organisation lacked the management systems required to build the numbers of shelters required. As a result an alternative implementation process was chosen, using partner organisations.

Two organisations were identified to implement the shelter programme.

Implementation by the partner organisations began in August/September 2012.

A fixed design of shelter (a tukul) was built. It was based on the shelters built and lived in by the host community, differing from the shelters that the refugees were accustomed to building. As a result construction training was required.

Carpenters and materials were provided and managed by the implementing organisations, while families had to provide the labour. Most families were able to provide the labour, but in the case of the most vulnerable households, some support was required.

The implementing organisations both provided a site engineer to lead the project and a site foreman to manage the teams of carpenters and masons in the camp. Both organisations required significant logistics support.



Timber and bamboo frames shelters were built with thatched roofs as a more durable shelter solution than tents. It proved challenging to source mud to plaster the walls as originally intended.
Photos: Left: UNHCR, Right: Demissew Bizuwerk / IOM Ethiopia.

In the project plans, a carpenter and a mason, working with families would be able to build ten shelters in fifteen days. In practice, only half the number of shelters could be built. This was due to an underestimation of the training required by those constructing the shelters, and an underestimation of the number of households who would require additional assistance.

Selection of beneficiaries

Refugees were brought to Bambasi camp from the transit site near the border at Ad-Damazin. The refugee population had continued to rise while the camp was being built, and many refugees had settled near the border.

Shelters were allocated according to family size. Each family was allocated a 10m x 15m plot. For families with seven or more people, two plots were allocated.



A carpenter and a mason worked with each family to build shelter.
Photo: Demissew Bizuwerk / IOM Ethiopia.

Logistics

All of the shelters were built using locally available materials: bamboo, grass (for a 15cm thick roof), rope and mud. This approach was much cheaper than sourcing materials in the capital, also cutting transportation costs.

Each shelter required significant volumes of grass for thatching the roof and for strengthening the mud walls. The grass could only be harvested seasonally with the main harvest being in March. This did not coincide with the construction, which needed to continue all year round to meet the needs.

The sourcing of sufficient quantities of mud also proved more challenging than anticipated. Initially mud came from digging the latrine pits but this was insufficient for the initial shelter needs, and for re-mudding after the rains. By the end of 2012, the organisation was still trying to identify sources for mud and to organise sufficient trucking for the large volumes required.

The camp water supply was sufficient to cope with the volume needed to mix with the soil.

Situation at the end of 2012

By the end of 2012, there were over 86,000 Sudanese refugees living in Ethiopia.

Approximately 3,700 refugees formerly registered in Ad-Damazin still remain in the local community after opting out of the formal relocation process to Bambasi camp

in June and July 2012. A few dozen refugees moved spontaneously to Bambasi in September. In October 2012, 2,000 refugees were relocated to the camp by local officials and were accompanied by around 8,000 livestock.

Materials list

Below is a materials list for different shelter sizes.

Material	Quantity / shelter size		
	10m ²	14m ²	21m ²
Shelter (small)			
Eucalyptus poles 5m x 10cm	10	11	14
Eucalyptus/ bamboo 5m x <8cm	27	33	40
Eucalyptus pole 5.8 m x 12cm	1	1	1
Bamboo 5m length	37	39	90
Mud with grass (m ³)	2.45	4.37	4.89
Bamboo (roof) 20cm	57	66	80
Bamboo reeds 50cm	25	45	50
Grass (bunch)	15	22	30
Rope and strings	100m	150m	200m
Door with frame, hinges and lock	1	1	1
Window 0.6m x 0.6m	1	1	1
Nails 2.5" (kg)	0.5	0.5	1
Nails 4" (kg)	1	1	2
Used motor oil	3litres	3litres	5litres
CIS Nails	0.25	2.5	0.25
Fence			
Eucalyptus 5m x 10cm	5		
Bamboo (1m spacing)	80		
Tools			
Claw Hammer	1		
Bow saw	1		
Shovel	1		
Meter rule	1		
Pick axe	1		
Axe	1		

A.9 Ethiopia – 2012 – Conflict and Drought

Case Study: **Keywords:** Planned and managed camps / relocation sites, Transitional shelter / T-shelter, Site planning

Country:

Ethiopia

Project location:

Dollo Ado

Conflict / Disaster:

Conflict and drought in Somalia

Conflict date:

Conflict since 1992

Number of people displaced:

Over 1 million registered Somali refugees

By the end of 2012, 177,000 refugees were registered in the five Dollo Ado refugee camps

Project target population:

9,000 families (2011–2012)

Project outputs:

7,127 shelters by end of 2012

Occupancy rate on handover:

High

Shelter size:

6m x 3,5m (21m²)

Materials cost per shelter:

US\$ 525 including transport

Project cost per shelter:

US\$ 800 excluding overheads



Project timeline



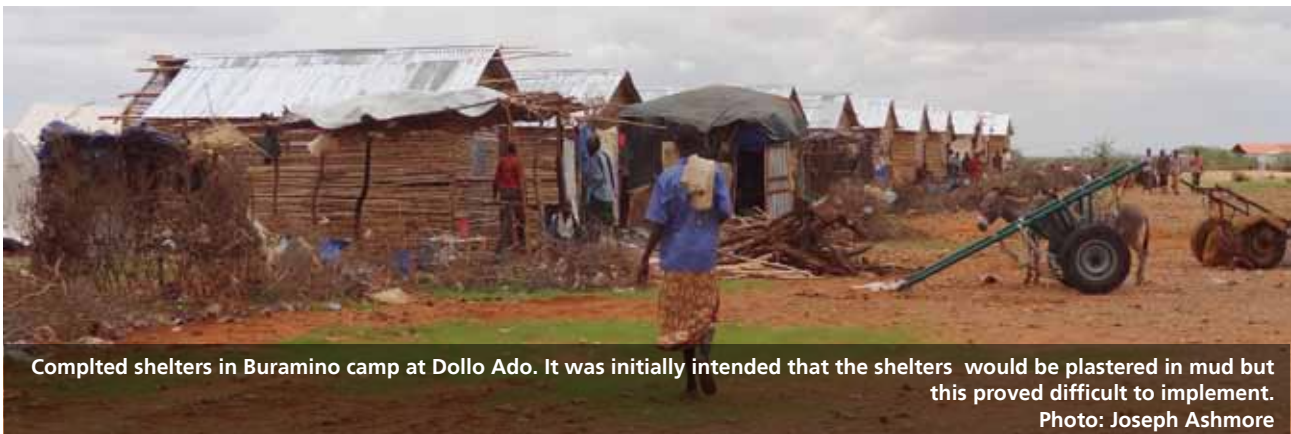
Project description

Four organisations built semi-permanent shelters for Somali refugees living in the camps at Dollo Ado. Each organisation set up production lines in the camps to prefabricate the components. The projects worked within the constraints of challenging logistics and very different social environments between camps. The shelter design was selected following a consultative process during which different options were shared with camp residents.

Strengths and weaknesses

- ✓ The design process was coordinated between organisations to avoid conflict between refugees over different shelter standards.
- ✓ The process to select the shelter design was designed to be transparent and include all stakeholders, including camp residents.
- ✓ Shelter construction provided refugees and the host community with paid work. It is estimated that the shelter projects contributed US\$ 16,000 per month to the economy of each camp.
- ✗ Joint procurement of supply of materials was attempted but did not prove successful.
- ✗ Significantly fewer shelters have been built than initially anticipated. The strategy supported less than 20 per cent of the population of the camps by the end of 2012.

- ✗ The original design used mud render, but this required a significant amount of water and transportation, and was not possible to implement. Negotiations with the host communities over the use of mud slowed progress.
- Different organisations have had very different completion rates as a result of different budgets, management structures, logistics, supply and relations with camp residents and host communities.
- Most materials were not available in Dollo Ado markets and were imported from other regions. Price fluctuations led to a 16 per cent increase in the total shelter cost.
- The shelter strategy was developed based on the assumption that it would achieve 100 per cent shelter coverage. Production and delivery remains short of these targets.



Completed shelters in Buramino camp at Dollo Ado. It was initially intended that the shelters would be plastered in mud but this proved difficult to implement.

Photo: Joseph Ashmore

Camps at Dollo Ado

Following a resurgence of the conflict and drought in Somalia, a series of five camps were established in 2010 and 2011 within 100 km of the Ethiopian Border town of Dollo Ado.

By the end of 2011, the five camps of Bokolmayo, Melkadida, Kobe, Hilaweyn and Buramino hosted 34,000 Somali families, the largest refugee presence in Ethiopia. The refugee population increased during 2012, and by the end of the year, 180,389 individuals refugees were registered in the camps. As these camps became more established and the numbers of registered refugees continued to increase, it seemed likely that the camps would remain open for some years.

Being close to the equator and at low altitude, Dollo Ado is subject to harsh weather conditions with high temperatures, strong winds and seasonal heavy rains.

The people living in the camps mainly come from rural parts of Somalia. A significant proportion are nomadic pastoralists, accustomed to lightweight and movable shelters.

In 2011, shelter was identified as an urgent need in the refugee camps. The number of new arrivals peaked with an average of 168 persons per day in June 2011. They were provided with tents. However, the life span of the tents proved to be around 6 to 8 months, meaning that alternative solutions for the shelter in the camps were required.

Beneficiary selection

Shelters were built by four organisations and each was allocated one or two camps. Camps were established within host communities or in isolated locations. Some had been established for months whilst others had existed for years. As a result each site presented very different challenges.

There was some variation in beneficiary selection: One organisation targeted blocks in each camp according to agreed criteria. Within each block the most vulnerable households were prioritized, and all shelters in each block were completed before moving on to the next. Another organisation prioritized individual households across the camp rather than prioritising individual blocks.

In addition to building shelters for camp residents, 120 shelters were built for host community households in 2012. Additional targets were set for 2013.

Implementation

Each implementing organisation started at different times with different total budgets and in different sites. The most effective projects established strong supply routes, prefabrication facilities and clear procedures for managing supply and construction.

Workshops

Each organisation established a workshop and materials storage area close to construction sites. In the workshops, timber was pre-cut, bamboo was split, and doors, windows and roof trusses were prefabricated.

A well-organised workshop with effective quality-control mechanisms was necessary to maximise production efficiency. The minimum workshop and storage area for efficient production was 1 hectare (10,000m²). Workshops were staffed by a mixture of skilled carpenters and daily labourers.

One organisation found particular challenges with the splitting of bamboo, facing a 50 per cent shortfall at the time that the bamboo had to be fixed. It turned out that this was due to many bamboo poles being split into two pieces by the daily labourers as opposed to four or six.

Training and supervision

Training was provided for skilled labourers who were responsible for the on-site construction. On-site works included digging holes for foundations, erecting the frames, fitting the roofing, covering the walls with bamboo slats and fixing windows and doors. Training in mud rendering for walls was given where mud was available.

All organisations directly hired both skilled staff and daily labourers. To select carpenters for on-site works, candidates were asked questions on minimum foundation depths and how to best nail a joint. They were then assigned one shelter to prove their skills. Staff monitored the construction.

The ground at the different sites varied. In some sites it was relatively straightforward to dig 60cm deep holes by hand, in other sites the ground was hard and concrete was required in the foundations.



Three different prototype shelters were built and a group of refugee representatives, the government and the key organisations agreed on a common design
Image: NRC

Shelter selection

In September 2011, the organisations agreed to develop common shelter standards and build shelter prototypes for review.

At this time, the three organisations involved in the shelter programme were invited to produce prototypes based on the shelters that they had been building. Each of the three shelters was built to the same design brief.

Each shelter was evaluated by a gender balanced group of refugee representatives, the government and the key organisations.

The model selected had a corrugated iron sheet roof, a eucalyptus post-and-beam structure and split bamboo wall cladding. The intention was to plaster the walls with mud.

The shelter had an internal partition, two lockable windows, and a door that could be locked both from the inside and the outside for improved security. Corrugated iron sheet was chosen for roofing on account of its durability and fire safety.

Mud plastering

The shelter was originally designed to have wattle and daub walls using local mud. Bamboo laths would be covered with chicken wire and the shelter would be rendered with mud. This was initially considered to be a low cost and sustainable walling solution.

Unfortunately, mud of suitable quality was only available from certain locations in river beds and these were owned by the host

communities. Each shelter required slightly more than 2m³ of soil to render it with mud, as well as a significant volume of water. This worked out at over 2,000 truck loads for the 10,000 shelters that were planned in the first year. Up to 1m³ of mud would additionally be required each year for repairs after the rains.

By the end of 2012 there were sufficient resources available to implement mud walling for 60 per cent of the shelters in Dollo Ado, and the decision was made to discontinue the use of mud in the future. The design was adapted using closer spacings between the bamboo strips for walls instead of rendering it with mud.

For bamboo-only walls, plastic sheets or fabric were often placed inside to provide protection from the rain and the wind. The resulting structure was relatively well ventilated in the hot climate and provided adequate protection from the rain. Households were relatively satisfied with these shelters.

Tighter construction quality controls were required for bamboo-only walls to ensure that no large gaps were left between the lathes.

The use of local wood for shelter construction was a major issue for the host population, and as a result, timber was brought in to the area. However, each camp resident burned a significantly greater volume of wood when cooking than each shelter used in its construction.

Logistics and supply

Although highland Ethiopia has significant plantations and production of both eucalyptus timber and bamboo, the nearest eucalyptus and bamboo plantations are at least a day's drive from Dollo Ado. The suppliers who can produce the paper work required for large procurements are further away, mostly based in Addis Abbaba.

The transport requirements proved demanding. One truck only carried enough materials for 15 shelters. Building 10,000 shelters would require over 600 trucks.

Over the year, the biggest cost increases were with bamboo and transportation. This led to a 16 per cent increase in the cost of a shelter.

Materials list

Materials	Quantity
Corrugated galvanised iron sheet sheets roofing (2m x 0,90m)	24 pieces
Eucalyptus poles (8cm diameter)	32 pieces
Bamboo (6cm diamter, min. 6.5m, dry, straight)	62 pieces
Nails (#9, #8, #6, #4)	10.5kg
Roofing nails	3kg
Metal straps (2cm wide; 1.5-2mm thick)	10m
Wire mesh (1.8m x 30m; 2cm opening)	1 piece
Hinges (T hinge 4 cm long sides)	6pieces
Lock system	4 pieces
Black wire (10 kg rolls)	0.1roll.

Workshop tools

Materials	Quantity
Electric Radial arm saw	2 pieces
Hammer	5 pieces
Tape measurer	4 pieces
Cutting table	2 pieces
Assembling table	3 pieces
Oil barrel for treating timber	1 piece



Top: View of a camp before construction. Each organisation established a large workshop in each camp to store materials and prefabricate components. Images: Joseph Ashmore

A.10 Haiti – 2010 – Earthquake

Overview: **Keywords:** Returns, Unplanned camps, Planned and managed camps, Urban neighbourhoods, T-shelter, Rental support, Housing repair and retrofitting, Cash / vouchers, Mass communications.

Summary

In October 2010, ten months after the Haitian earthquake, a humanitarian organisation began a project to close a small camp of around 200 families. Families were given rental support cash grants to cover the costs of renting accommodation for one year and to support the transition from camps to their new accommodation. The project succeeded in its aims and became a test case for a much wider programme of rental support.

Promoted by a small number of organisations, the rental support approach relied on donors' willingness to take a risk on a project-type with few precedents. By mid 2011, rental support cash grants had become a key part of the return strategy and by November 2012 over 23,000 households had received grants.

Early indications are that rental support cash grants have been successful. A survey of households that have completed their year of rental subsidy found that all of the respondents (90% of the total caseload) had been able to organise their own housing for the foreseeable future. None had returned to camps or moved to informal settlements.



Background

The Haiti earthquake of January 2010 caused massive loss of life and damaged or destroyed 180,000 houses. (See [Section A.4 Shelter Projects 2010 for more background on the Haiti response](#))

Responses generally took one of three forms following the distribution of non-food items in the initial emergency phase:

- T-shelters: This was the main response by many organisations. Transitional shelters (T-shelters) were built using basic frames which could later be adapted into more permanent structures.
- Yellow House repair: Buildings were assessed by engineers and classified as Green (safe), Yellow (to be repaired) or Red (to be demolished).

- Permanent housing reconstruction: Rebuilding irreparably damaged houses.

The lack of buildable space in densely-populated urban areas and complex issues over land rights meant that the three main responses would only benefit those with land rights or those who owned houses.

Those displaced in camps overwhelmingly did not own either land or housing before the earthquake. Consequently, only a quarter of T-shelters built went to Haitians who were living in camps. Not only did this mean that camp populations were being reduced at a slow rate but it proved almost impossible to close camps completely. If only a small proportion of a camp had a durable solution available for them it wasn't long before the empty

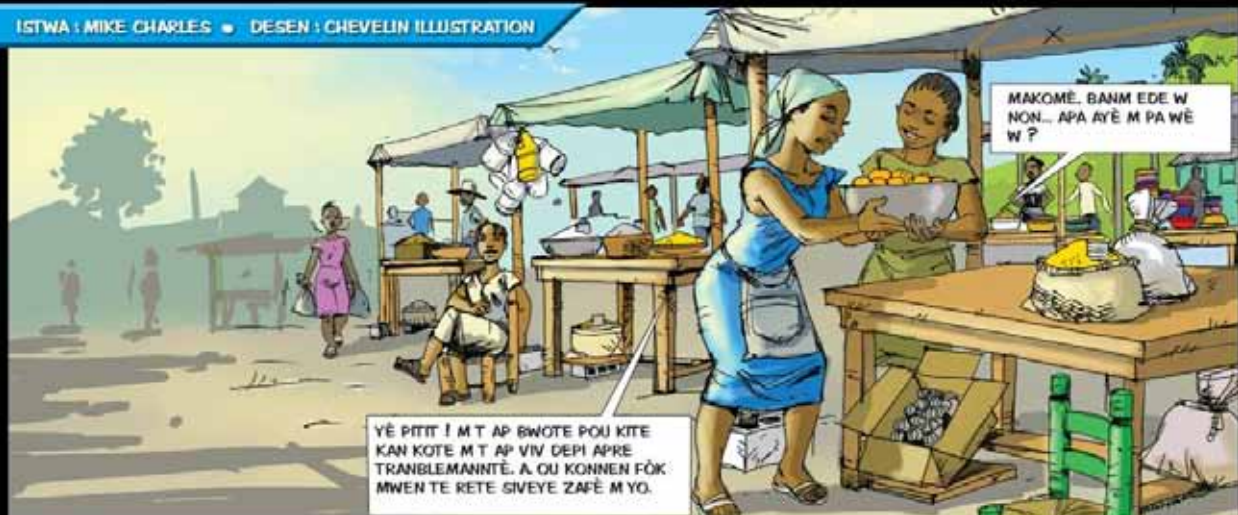
plots in the managed camps were taken by others moving in from spontaneous settlements.

Camps were not only bad for the displaced people but they also prevented occupied public spaces from being rehabilitated.

In this context some Haitian officials began suggesting that displaced people should be paid to leave camps. These proposals were dropped due to protection concerns as it would be impossible to verify if the families had found a durable solution. However, interest in properly planned rental support cash grants grew and presentations were made to donors to encourage adopting the approach.

Men nan men ak pwojè 16/6 gouvènman Ayisyen an

ISTWA : MIKE CHARLES • DESEN : CHEVELIN ILLUSTRATION



An edition of *Chimen Lakay*, a graphic newspaper, featuring the 16/6 program and a newly cleared market place. Designed by: Chevelin Pierre, Script: Mike Charles.

Neighbourhood approach

Rental support was closely combined with the neighbourhood approach to reconstruction.

The concept of the neighbourhood approach is that projects such as rubble clearance, rebuilding, water, sanitation and livelihoods programming should be joined together across sectors and that agencies create a coordinated and efficient response supporting families to move from camp to community. As of December 2012, this goal had not been fully realized, but efforts were being made to take a more holistic approach.

This approach minimises the possibility of families “rebounding” back into camps. For example, “rebounding” could be caused by a lack of employment opportunities or extremely poor sanitation standards in the neighbourhoods to which people return.

The 16/6 program

The 16/6 program, led by the Haitian government, targeted income regeneration in sixteen neighbourhoods coupled with the closure of six camps.

The programme focus on neighbourhoods meant that livelihoods grants were not allocated to families leaving the camps. Instead, a targeted livelihoods program was implemented, aimed at support-

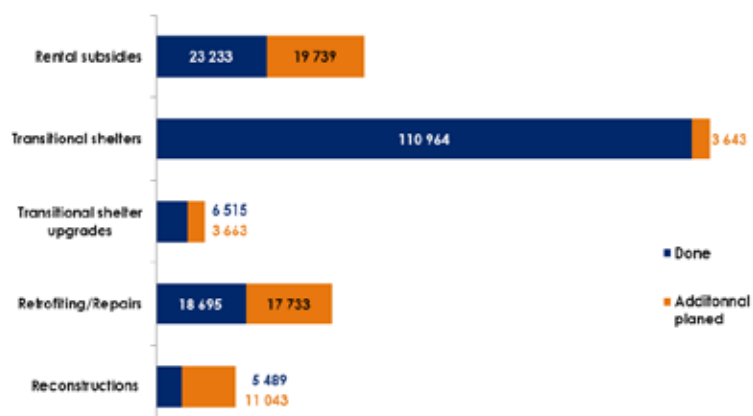
ing neighbourhood businesses to start-up or expand in order to offer those returning real income generation opportunities. The grants were available to anyone with a business idea and not restricted to those returning from camps.

The 16/6 programme relied heavily on the use of rental support cash grants to offer all families living in camps a realistic housing option.

Rental support

Rental support projects differed between agencies but largely followed the same pattern:

- **Registration:** Emphasis on obtaining accurate beneficiary lists through other health or distribution activities, in collaboration with Haitian authorities
- **Protection and assistance:** Identification of vulnerable families who qualify for additional help
- **Beneficiary communication:** Facilitation of informed choices by beneficiaries using wide range of multi-media and face-to-face communications
- **Choosing a housing option:** Either T-Shelter, Yellow-house repair or rental support cash grant
- **Choosing a rental property:** Family chooses a property (independently assessed for safety) and negotiates the rent
- **Cash grant transferred:** The year’s rental cost of US\$ 500 is transferred directly to the landlord and the family receives the money left over



Graph to show completed and planned housing solutions, November 2012
Source : E-Shelter and CCCM Cluster

- **Camp closure:** Families are given a US\$ 25 cash grant to help in transporting their possessions to their new home
- **Surprise visit:** Agency awards a US\$ 125 bonus to families continuing to live in their chosen rental accommodation following a surprise visit made a few months later.

In addition to the US\$ 650 grant costs, the relocation of one household incurred an additional US\$ 350 in programming costs, making a total cost of the return of one household rise to around US\$ 1,000. Programming costs include beneficiary registration, communication of activities and protection activities such as providing two-years rental for vulnerable families.

In comparison, a T-shelter costs around US\$ 2,000 and a permanent house around US\$ 6,000.

Concerns and safeguards

There have been vigorous discussions around the appropriateness of a rental support approach as a durable solution.

Some of the key concerns and corresponding safeguards were:

- **Cash distributions can act as a pull-factor to camps:** Announcements about rental support programs were made publicly only after accurate beneficiary lists were made. Negligible pull-factors were noted.
- **Rental properties may not meet minimum standards:** All rental properties were assessed for safety and sanitation issues. The emphasis was therefore on moving people out of the much worse conditions in camps.
- **Cash grants would inflate rents:** Rents were monitored by organisations using the prices agreed between families and landlords. Rents had not risen by the end of 2012.

Indicators

The rental support approach shows the following early indicators of success:



The ruined National Palace surrounded by shelters before the Champ de Mars camp closure.

Photo: IOM



The ruined National Palace after the Champ de Mars camp closure.

Photo: IOM

- A survey of households who rented for one year achieved a 90 per cent response rate. Out of those households responding, all had found their own housing solutions and none had been forced to return to camps or informal settlements.
- Nearly 100 per cent of respondents reported that their situation is better or much better than it was in camps.
- 77 per cent of landlords used two-thirds of the rent money to improve the standards of the properties that they were renting out.

Lessons

- Rental support could have been implemented earlier if it had been considered or picked up by other donors.
- Better links to livelihoods programmes could be made to further support families to continue to cover rental costs themselves in the future.
- The neighbourhood approach offers more chances for better coordination between sectors and organisations as well as between emergency and development actors.
- The approach has been popular with the general public, particularly as it emphasises beneficiaries' rights to actively choose where to live. Haitian politicians have been keen to promote and be involved in rental support programs.

A.11 Haiti – 2010 – Earthquake

Case Study: **Keywords:** Returns, Unplanned camps, Urban neighbourhoods, T-shelter, Rental support, Housing repair, Cash, Training.

Country:

Haiti

Project location:

Port au Prince

Disaster/ conflict:

Earthquake

Disaster/ conflict date:

January 2010

Total number of houses damaged or destroyed:

180,000

Project target population:

1,208 families relocated from 5 IDP camps

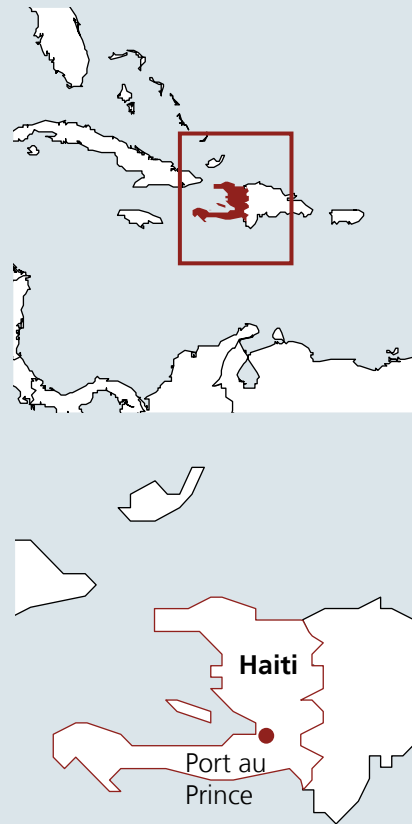
10,518 T-shelters built with services and support

Occupancy rate on handover:

95 per cent

Project cost per household:

Approximately US\$ 990 / family
T- shelter programme costs were higher



Project timeline



Project description

The project offered several service packages, including rental assistance, transitional shelter construction and repairs to damaged homes, to incentivise families to leave camps and find suitable housing solutions. Central to this project were life skills training, household livelihood planning, temporary health insurance and psychosocial services. Over one year, the project closed all five camps that were targeted and helped more than 1,200 families resettle.

Strengths and weaknesses

- ✓ The organisation fully achieved its target of closing five camps.
- ✓ Life-skills training was delivered in time to prepare families for their resettlement.
- ✓ Effective mechanisms to prevent fraud and to minimise inflation of rent prices.
- ✓ Participants were given a choice in their resettlement option.
- ✓ Good mechanisms for preventing programme abuse and to reduce the chance of housing price inflation.
- ✓ Use of mechanisms such as a hotline improved the organisations accountability.
- ✓ Strong support from local government.
- ✗ Some landlords canceled contracts due to the organisation making late payments.
- ✗ Personnel costs were comparatively high due to the large number of staff required to provide a personal

service to families.

- ✗ Early beneficiaries could have been better prepared for the risks of receiving cash.
- ✗ Staff safety was a serious concern due to the challenging sites chosen (site selection based on level of need rather than ease of implementation).
- ✗ With a large part of camp residents making a living from small commerce, there was an opportunity to work with IDPs before they relocated to improve their small commerce activities. This component was not added until the second phase of the project.
 - The rental subsidy lasted one year which gave the family time to save and plan for their future and recover from living in a camp for two years.
 - Despite early scepticism from many humanitarian staff, rental subsidy programmes did not noticeably lead to rental price inflation.



The project offered various options, including cash for rent, and provided additional support to help close camps. Photo: Jack Reybold (CRS)

Background

(See the overview section [A.10, Haiti – 2010](#).)

The organisation created the Ann Ale Lakay project (meaning “Let’s go home” in Haitian Creole) in September 2011. The project aimed to support families remaining in camps to leave those camps. The project was a response to the fact that pull factors alone (the setting up of services in return neighbourhoods) were not sufficient to get families to relocate.

The project began as a 6-month, US\$ 600,000 pilot project to close three camps (460 families). It was extended for six more months to close an additional two camps.

The project was aligned with the Haitian government’s “16/6” programme. This programme aimed at closing six camps and rehabilitating sixteen return neighbourhoods.

Selection

The five camps were chosen in coordination with other actors and had been identified as priority sites for closure. Some camp dwellers were “renting” tents from those who have moved out of the camp. The organisation ensured that these families, rather than the tent “owners”, received project services by conducting a “surprise census” to ensure that the genuine residents were registered. Beneficiaries were

given photo ID cards to prevent further disputes.

Coordination

In line with government strategy, the project offered a standardized package of resettlement options. The goal was for all agencies engaging in camp closure projects to operate using a standard approach, as this prevented families from refusing the services of one organisation in the hope of receiving a better deal from another.

“With the conflict resolution [training], I can find solutions to all my other problems”

Project beneficiary

Implementation

The project offered households three choices: one year’s rental subsidy, construction of a transitional shelter or support to repair a damaged house.

Of the 1,205 families supported, 98 per cent chose to take the one-year rental subsidy and 2 per cent chose to receive a t-shelter.

As few of the families living in the camps had owned a house before the earthquake, there were no housing repair services requested.

Most families moved to houses in neighbourhoods near the camps, while others moved to areas with more open spaces such as Carrefour and Croix des Bouquets.

The rental subsidy was worth US\$ 500 and if the family could negotiate a lower price with a landlord they were able to “keep the change”. For example, if they find a place for US\$ 400, they could keep US\$ 100. This helped prevent rent price inflation as project participants had an incentive to negotiate the best deal possible

Although the housing market in Haiti had not even begun to recover, it was flexible enough to absorb more people capable of paying rent.

Around 60 per cent of the people receiving rental subsidies found accommodation for less than US\$ 500. The median rental price was US\$ 375. In informal interviews, the majority of beneficiaries reported using the remaining funds from the rental subsidy to support their activities in small commerce, such as purchasing a small quantity of goods for resale.

There was a risk that people would be harassed and pressured to give the money to groups such as the police and the camp committee. As a result the money was transferred directly to the landlord



Life skills trainings were an essential component of the project, preparing residents for life outside the camps. Photos: Nathan Jayne



Camps were slowly turning into permanent shanty towns and many had poor sanitary conditions. Photos: Nathan Jayne

via a money transfer service. The remainder was transferred to the head of the household via a mobile phone base transfer system.

Some tent “owners” pressured the “renters” to share the leftover money from the rental. In later phases of the project, it was suggested that everyone should keep information to themselves on whether or not they received leftover money. It was suggested that renters immediately moved out of the camp, and that they should not share their address with the tent “owner”.

The project team had 19 people: an international programme manager, a project manager, two project officers, a monitoring and evaluation officer, two psychologists and twelve social workers.

Accountability

The organisation took some specific steps to provide accountability to service recipients, including setting up:

- notice boards in all communities with information about the organisation and the project
- a free telephone hotline to deal with any questions
- regular community meetings – for information dissemination and feedback to the organisation
- contracts with Beneficiaries, outlining mutual responsibilities
- posters and trainings for all project staff on the

- organisation’s Code of Conduct
- field teams based within the camps
- an official, organisation-wide accountability framework.

Protection

Protection issues were dealt with in different ways:

- Training included a family communication and conflict-management module, which focused on positive ways to solve problems (including disciplining children) without resorting to physical punishment.
- Social workers checked the safety and adequacy of all houses before families moved in. The families who chose to receive rental support were not allowed to choose houses marked as damaged, nor homes located in or along a ravine.
- The municipality signed all rental agreements to give the

contracts greater legal weight in favour of the family. The aim was that this would help to prevent evictions and reinforce the government’s leadership in this project.

Trainings

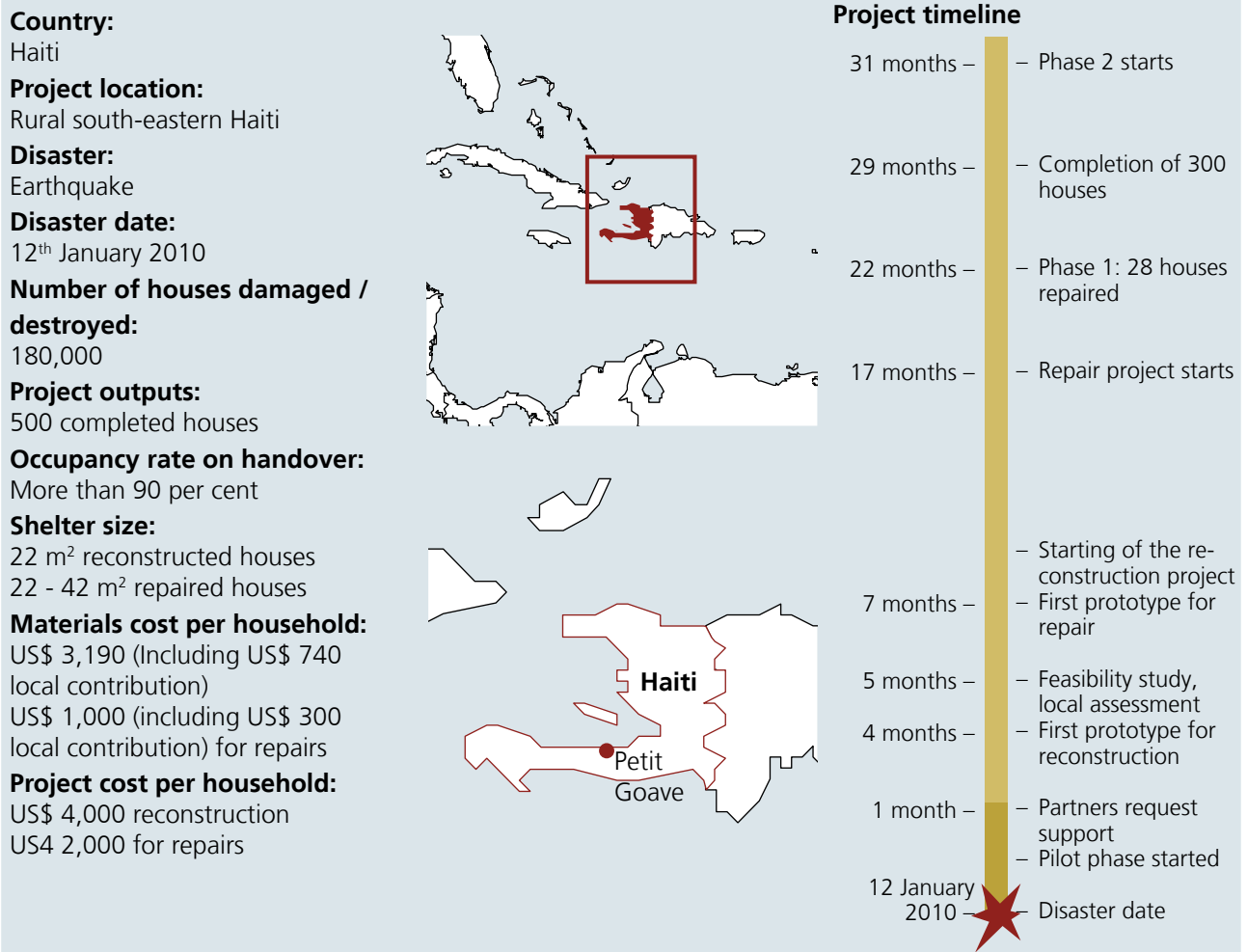
Cash transfers were accompanied by a life-skills training module. According to participant interviews and focus groups, this training was crucial to the success of the project.

These six-module trainings prepared camp residents with life skills they would need for a successful transition. To help people develop a sense of responsibility for their future, families developed a “family plan”, a personal road map for resettlement and recovery. The plan not only helped families think about their goals for the future but also helped them plan for potential setbacks.

Summary of Training modules	
Module	Details
Family communication	Interpersonal skill development and conflict resolution
Personal responsibility and problem solving	Role within the country of Haiti, larger community, neighborhood and family
Prioritising needs, planning for the future	Helps families to identify needs and create a family plan.
Financial planning	Banks, savings, lending options, health and other insurance, negotiation
Small business management	Key concepts to improve the profitability of a small business

A.12 Haiti – 2010 – Earthquake

Case Study: **Keywords:** Dispersed, Construction materials, Housing repair and retrofitting, Training, Guidelines and training materials .



Project description

This project worked in rural areas of Haiti beginning with an in-depth assessment of local building practices. Builders were then trained in improvements to existing construction. This was followed by building assessment and repair construction programme resulting in the construction of 500 houses to date. The overall project goal was to improve local communities' resilience to hazards and to improve living conditions through housing improvements and construction-based economic stimulus.

Strengths and weaknesses

- ✓ The project was designed to be replicable by Haitians without external support.
- ✓ A detailed assessment of cultural practices meant that social structures were enhanced instead of ignored by the project.
- ✓ Good ownership by local stakeholders.
- ✓ The project strengthened the capacities of existing local organisations and created jobs linked to local market.
- ✓ Construction skills training enhanced livelihoods opportunities and has improved the general safety of construction.
- ✗ Detailed assessment of local capacities meant that the construction phase started relatively late.
- ✗ Slow to demonstrate impacts. There was no significant impact in the first years of the project on

households which were not provided with construction support.

- ✗ There is a low visibility of improvements as they are difficult to identify by a non-professional.
- ✗ It was difficult to persuade local partner organisations to repair more houses as they considered repaired houses to be less safe than new houses.
- ✗ Technical, management and administrative capacities of partner organisations were not properly assessed.
- This project is ongoing and has received some interest from other organisations following positive impacts on other projects and national strategies.
- The Ministry of Public Work, Transport and Communications gave its agreement for the use of the designs and technical recommendations for housing reconstruction in Haiti.



The project approach was adopted by other organisations. Left: shelter built by the project, Right: An adaptation by another organisation in an urban area of Port au Prince. Photo: Left: PADED / MISEREOR Right: CRAterre.

Before the earthquake

(See the overview section [A.10, Haiti – 2010](#))

In many of the rural communities in south-eastern Haiti incomes are low and there is no access to power or running water. The public infrastructure that existed was in a poor state of repair.

Most people in the region owned their own houses, grouped or dispersed over a large territory. Many houses were in a poor condition, and homeowners often lacked the knowledge and resources to maintain them. Regular damage was caused by cyclones.

After the earthquake

In south-eastern Haiti, more than 50 per cent of rural houses were partially damaged by the earthquake. However, very few people were injured or killed by building collapse. As the affects of the earthquake were relatively less severe in rural areas compared to urban areas, there was a migration to rural areas immediately after the earthquake.

Selection of beneficiaries

Project areas were selected according to level of damage and whether partner organisations had a presence before the earthquake.

Lists of affected people were drawn up by the local organisations immediately after the earthquake. A community meeting at the start of the project was attended by 200 people from all the project areas, and the following selection criteria were decided upon:

Compulsory:

- The house of the beneficiary was damaged by the earthquake.
- The beneficiary is the owner of the house plot.
- The beneficiary agrees to the rules of the project.

Preferred:

- The household hosts displaced families.
- The household head is female.
- The household head is a widow.
- The household includes many children and the adults have limited income-generating opportunities.
- Households are committed members of the local organisation (this was a condition of the partner organisations).
- The beneficiary is regarded as having a good behavioural record.

Land issues were resolved by the local partner organisation.

Approach

Affected people were involved as much as possible, and five partner organisations implemented the project.

The following steps were followed:

- Local organisations defined and managed the reconstruction projects.
- Specific designs and technical solutions were developed depending upon the context.
- An external expert was embedded in each local organisation for one month to build up their training capacity.
- Building models were monitored and evaluated. If necessary, changes and adaptations were made.

Implementation

Households were put into groups of 5 or 6 households. These groups had to work together to repair their houses.

Existing administrative staff from partner organisations worked on the project. A social mobiliser was hired to assess up to 50 households. Two engineers were hired per partner organisation.



House owners bore part of the responsibility for monitoring on-site construction. Photo: PADED / MISEREOR

There were two monitoring and evaluation missions each year, and the project was managed by a full time foreign expert based in Haiti.

During the house repairs, the inhabitants were given a guided tour of a damaged house to point out defects and reasons for failure. With this new knowledge, people were able to take on part of the responsibility for the quality of construction and repairs to their own houses.

A registration card was completed for each household. This included: identification details; reason for their selection; ownership of the land; access to water; proposed repairs; beneficiary contributions to the shelter and construction completion dates. An agreement was then signed with the householder.

Households selected a builder, paid for by the organisation, from a list of craftsman who had completed the training programme. Local site supervisors made technical checks on each building.

New houses were constructed in groups, while repairs were made on a house by house basis.

Technical solutions

As many of the families were poor, technical shelter solutions had to ensure low maintenance costs.

The core technical criteria was that shelter failure would not lead to further injury and death.

Traditional local houses were built on wooden posts dug directly into the ground which were quickly weakened by rot. The new design added a proper foundation.

Masonry skills were very basic in the area and filling this knowledge gap was an important part of the construction training.

Cross-bracing was used in the walls. This reduced the risk of the wall collapsing in cyclones and earthquakes.



The project included repairs and had a strong social mobilisation component. Photo: PAPDA/ VEDEK / Secours Catholique.

To resist high winds, houses were built with a low profile, and households were encouraged to grow high vegetation surrounding the house to reduce potential impacts of cyclones.

Houses were built with four roof slopes to prevent there being a weaker gable end. In some areas, people preferred a traditional roofs design with two slopes as they could use the space under the roofs for storage.

Training

The project involved three stages of training: a training of trainers, a training of artisans and a more basic training for house owners.

Participants were trained on the different ways hazards can affect buildings.

As part of the repairs programme, each household group was given training on water and sanitation issues and provided with a community water tank.

Trainings materials included printed illustrations of best practice in Créole.

Artisans were trained in groups of 20 for 2 to 4 weeks, during which they constructed a prototype house. Payment for participants to attend trainings depended upon the partner organisation. In some case, only food was provided, in other case, full salaries were paid.

Logistics

Each partner organisation procured construction materials from local suppliers, though these suppliers imported part of their materials.

In some cases the partner organisations formed a procurement collective in order to negotiate better prices.

Broader impacts

Most of the newly built houses in the project area that were not funded by this project had small improvements to bracing, stone masonry, and stone foundations. Although it is too early to really understand the broader impact of this project, it is hoped that it has led to a change in construction culture.

Other organisations have adopted this project approach and are conducting their own trainings in other areas.

Materials list

Materials	Quantity
Repairs (for 100 houses)	
Corrugated iron sheet (34 gauge)	2,000
Cement Bag	1,500
Local wooden pole	1,500
Roofing nails	100 lbs
Reconstruction (for 100 houses)	
Corrugated iron sheet (34 gauge)	3,000
Cement Bag	1,100
Wooden rafter imported	4,600
Wooden plank imported	1,500
Roofing nails	700lbs

A.13 Haiti – 2010 – Earthquake

Case study: **Keywords:** Returns, Unplanned camps, Urban neighbourhoods, Infrastructure, Community engagement

Country:

Haiti

Project location:

Port au Prince

Disaster/ conflict:

Earthquake

Disaster/ conflict date:

12 January 2010

Number of houses damaged / destroyed:

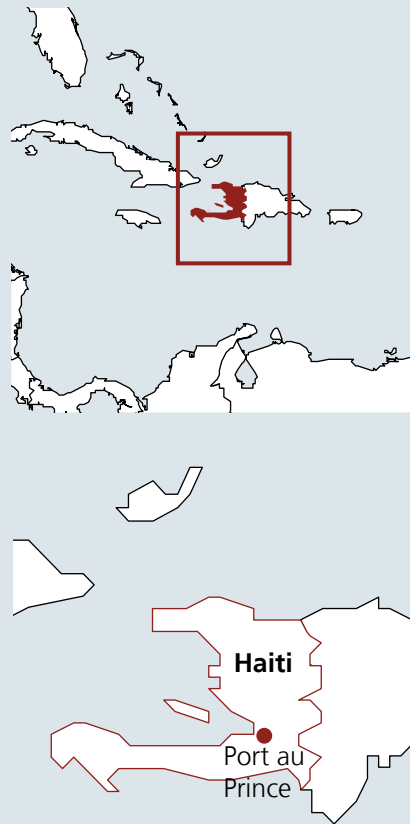
180,000

Project target population:

700 families

Project outputs:

Increased awareness on safer construction,
Cadastral map,
Community Action Plan,
300m of canals
Community Market Place



Project timeline



Project description

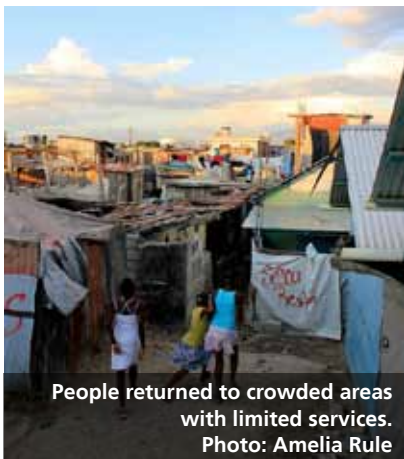
The organisation used the Participatory Approach for Safe Shelter Awareness (PASSA) process to support the community make the transition to neighbourhood recovery. A range of participatory activities were carried out to decide both a comprehensive community plan for reconstruction, and a detailed list of related programme activities by the organisation. The identification of problems and solutions enabled the community to make plans for their own long-term recovery activities.

Strengths and weaknesses

- ✓ A participatory planning approach promoted a high level of engagement by the community which led to a programme that responded to people's self-determined needs.
- ✓ The process empowered and gave a voice to members of the community who are not often heard.
- ✓ The plans that were developed cut across a number of different sectors which resulted in an integrated approach to settlement planning.
- ✓ The project built on relations with camp residents early in the response to support recovery.
- ✓ Enabled the community to directly act in their neighbourhood to improve their quality of life.
- ✗ PASSA was not used in the first year of the response leading to delays in the recovery planning.
- ✗ Participatory tools are only the first step for reconstruction. Additional training, planning and

technical skills are required for safer construction.

- ✗ More time was needed to explain that participatory tools only informed planning, and expectations for concrete results needed to be managed.
- PASSA was developed in rural contexts, the focus on 'shelter' needed to be adapted to 'habitat' to encompass the infrastructural and social aspects of living in an urban context.
- "PASSA" can be carried out simultaneously with other assessment techniques.
- GIS mapping was essential to monitor progress.
- Considerable time is required to plan the participatory process and analyse the information from workshops.
- Local terms needed to be used to ensure a full understanding of issues.
- Participatory tools developed for rural contexts can be adapted for urban contexts.



People returned to crowded areas with limited services.
Photo: Amelia Rule



The organisation used a PASSA process: residents identified their own problems and the actions needed to address them.
Photo: Mandy George

Before the earthquake

After land was reclaimed from the marshes in the 1980s, an informal settlement developed in Delmas 19, Port au Prince. The houses were self-built structures made with poor-quality materials such as concrete blocks, corrugated iron and wood, and constructed with little knowledge of safe building techniques.

Infrastructure was poor with limited water and sanitation services, and the site was badly drained with limited access.

After the earthquake

The earthquake destroyed half of the houses in the settlement and damaged half of the remaining structures. The main drainage canal was also damaged and blocked by rubble and debris.

Many water reservoirs belonging to individual households and commercial suppliers were damaged and pit latrines were inaccessible or broken. There were more than 100 families, with only one public latrine, living in makeshift shelters.

Selection of beneficiaries

Following the earthquake the organisation provided emergency assistance in the targeted camp, and identified the clear need for joint livelihoods and shelter support.

In June 2010, the private landowner offered US\$ 200 to families to leave the site. Consequently two-thirds of the camp population relocated. The majority were from the adjoining neighbourhood, and the organisation followed them as they returned home to de-

molished houses, makeshift shelters and a lack of services.

The groups with the highest shelter vulnerability were renters and those who lived next to the canal on land that could be reclaimed by local authorities. Those facing possible eviction had a broad range of backgrounds in terms of education levels, livelihood strategies and home ownership.

Direct support was given to specific households based on vulnerability assessments developed with the community, while the whole community benefited from improvements to site drainage and public spaces such as the market.

Implementation

The participatory process began with an explanation to participants of how a detailed planning process would result in the best solutions for reconstruction. The coordination of different sectoral projects, such as solving drainage issues before providing shelter solutions, achieved a joint approach to settlement rehabilitation.

The organisation used the "**Participatory Approach for Safe Shelter Awareness**" (or **PASSA** see - *PASSA, Participatory Approach for Safe Shelter Awareness, IFRC 2011*). PASSA was a relatively new, and formally structured approach to participation in shelter projects. It was based on a tool commonly used in WASH programming.

The PASSA process involves working with a group of 40 representative people. This group was selected by the community and did

not include the existing committee members. However, all activities were carried out in coordination with the committee members.

PASSA comprised eight participatory activities, which were carried out over two to three months:

1. historical profile and everyday problems
2. community mapping and visit
3. frequency and impact of hazards
4. safe and unsafe habitat
5. options for solutions
6. planning for change
7. problem box (future planning)
8. monitoring plan (future planning)

After each activity, the group shared their work with family and neighbours to encourage understanding of the process across the community.

At the end of the process, all the work, findings and plans were shared firstly with the committee members for feedback and input, and secondly presented to the whole community at an open day held in the community centre. The PASSA group members shared what they had done and received their participation certificates.

The main problems faced by the community were:

- weak infrastructure and flooding
- public health, water, sanitation and waste management issues
- safe access routes and personal safety
- unsafe shelter and settlement.



Both the market (left) and the path (right) were identified needs and both were built by residents with the support of the organisation. Photo: Amelia Rule

The identified solutions were to:

- construct the canal
- install solar street lighting
- construct shared latrines
- improve waste management
- improve housing and planning
- improve technical expertise through supervision and training.

Community projects

Planning for change started with mapping the issues in the neighbourhood and understanding their relationships. This enabled the community to take into account issues, including gender, protection and security. Once the issues had been identified the groups discussed each problem in turn.

Working groups, called 'cells', took on each subject and carried out further work, before creating an overall Plan of Action.

A security cell positioned solar lighting while a community waste management group cleared waste.

Community contracts were written for people from the neighbourhood to build the canal. This employed over 300 people.

Materials and technical supervision were provided by the organisation and fifteen shared latrines were constructed by the families themselves.

Community construction teams that had received training before working on the canal also built the market.

All of these activities started with awareness raising and engage-

ment with relevant authorities. The projects also aimed to improve skills for the housing construction and repairs which would follow.

Challenges with PASSA

The community had raised expectations about what PASSA could provide. They thought they would immediately receive the solutions they identified. The facilitators spent a lot of time explaining that the participatory approach would help to identify priorities and the solutions that the community themselves could achieve. It would also analyse where support was needed from the organisation and the local authorities.

The PASSA tool was developed in a rural context with a specific focus on 'Shelter'. As a result, some limitations were found using the tool in an urban context and within an integrated approach. The team adapted the activities to take into account the wider issues of infrastructure, water sanitation, urban issues such as spatial planning and security problems.

DRR components

The area was suffering from poor drainage, poor waste management, poor housing construction and poor infrastructure. All these aspects made the population vulnerable to flooding, the effects of hurricanes, outbreaks of disease and earthquake risks.

PASSA raised understanding of how risks to health and safety were caused not only by natural disasters but also by the everyday practices of the community.

Poor waste management and lack of upkeep of the canal lead to serious blockages and subsequent flooding of low-lying houses with waste and sewage.

To mitigate against these problems the PASSA process helped participants to identify simple actions that they could conduct. These included improved construction and environmental management, and how to prepare, plan and respond to a natural disaster.

Technical solutions

When provided with the materials and technical support necessary to carry out the reconstruction the PASSA process had ensured that the community was highly motivated.

At the end of 2012, Haiti had no official building codes and material standards were not enforced. The general level of understanding by architects and builders of seismic construction techniques was limited. A great deal of time was spent with engineers, seismic specialists and construction professionals to ensure that the shelter solutions were safe and that the community understood the reason behind the application of new techniques.

This knowledge was transferred outside of the participatory planning sessions, delivered instead through on-site practical training sessions.



Participatory Approach for Safe Shelter Awareness (PASSA) is a participatory method of disaster risk reduction (DRR) related to shelter safety. It is a variation of Participatory Hygiene and Sanitation Transformation (PHAST), which has been used by many Red Cross Red Crescent National Societies in water and sanitation programmes since the late 1990s.

The aim of PASSA is to develop local capacity to reduce shelter related risk by raising awareness and developing skills in joint analysis, learning and decision-making at community level.

PASSA is a process, facilitated by volunteers, that guides community groups (called PASSA groups in this manual) through eight participatory activities which enable the participants to do the following progressively:

- Develop their awareness of shelter safety issues in their community
- Identify hazards and vulnerabilities that create risk related to shelter
- Recognize and analyse causes of shelter vulnerability
- Identify and prioritize potential strategies to improve shelter safety
- Make a plan to put those shelter safety strategies into place, based on local capacities
- Monitor and evaluate progress.

Source *PASSA, Participatory Approach for Safe Shelter Awareness, IFRC 2011*



“PASSA helped us to see that many problems in our area are not complicated to fix, they are small things that can have a large negative impact – such as the rubbish blocking the canal and causing flooding.”

PASSA participant
Delmas 19

Defining the community:

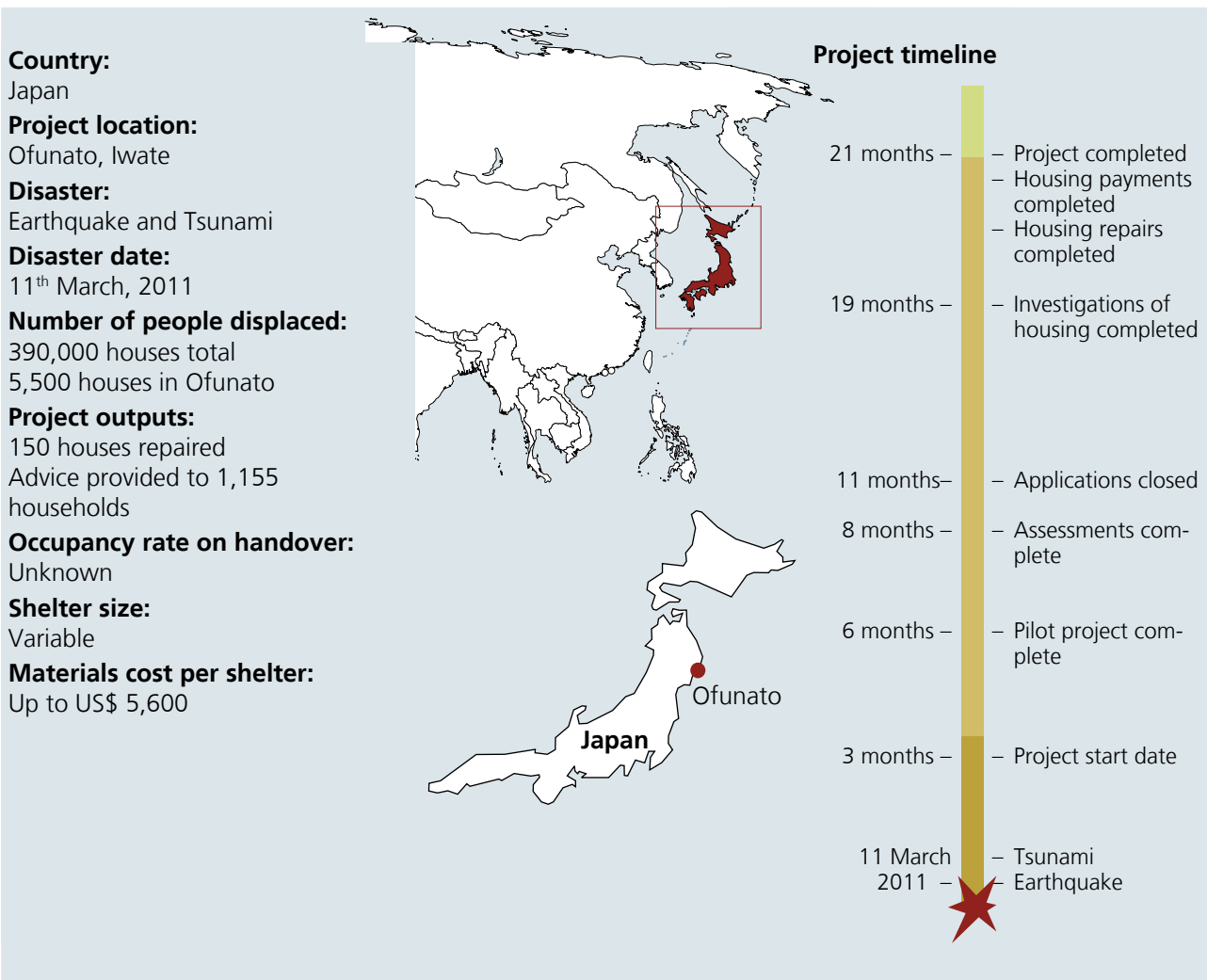
In this complex urban context, the community was defined by: housing typologies, level of poverty, physical boundaries of roads (making the area a pedestrian community), a representative committee and the familial and neighbourly networks that were already in place.

Drainage was identified as a key safety issue. 300m of drains were cleared and covered to make a path.
Photos: Amelia Rule



A.14 Japan – 2011 – Earthquake and Tsunami

Update: **Keywords:** Urban neighbourhoods, Housing repair and retrofitting, Cash, Structural assessment.



Project description

This project provided cash assistance to repair 150 houses after the tsunami in Japan. It was mainly targeted at families unable to apply for the government's Emergency Repair Aid and for those who required further assistance on top of the government's aid package. The project provided an information and support centre with outreach to support 1155 households. This service provided information to those who had difficulty in accessing other sources of information, primarily the elderly or people living alone.

Strengths and weaknesses

- ✓ The project hired architectural specialists to provide advice to rebuild durable housing.
- ✓ Affected people were supported to return to their original homes, and to reintegrate with their community. This helped to improve security in the area.
- ✓ Local construction firms used local labour and more environmentally sustainable resources.
- ✓ Houses of both evacuated and non-evacuated people were rebuilt.
- ✓ The project's focus on preserving parts of the old town helped to give a feeling of continuity to the community.
- ✓ By coordinating with other organisations, the project was part of a sustainable, sector-wide response. At

- the same time the affected people were thoroughly consulted to gather information and understand needs.
- ✗ By supporting rebuilding in potentially hazardous areas, there was the possibility that people could be re-exposed to future disasters.
- ✗ A limited number of households were supported as a result of the high cost per family (a result of Japanese materials prices and culture).
- ✗ The financial aid was only for repair and was not for the construction of new houses.
- ✗ Only families who had reached a certain stage in their recovery could benefit from the repair project.
- Vulnerable households were prioritized, including those made up of only elderly people or those with very low incomes.



Community consultation meeting . the organisation established an information centre and provided advice through individual consultations to 1,155 households.
Photo: Habitat for Humanity Japan

Before the earthquake

Japan is a high income country with nearly 70 per cent of its population living in urban centres. The affected area was known for its deeply indented coastline, fishing and marine farming.

The population of the area was ageing and decreasing, while the percentages of detached houses and self-owned houses were high compared to urban areas.

After the earthquake

The Great East Japan Earthquake was the biggest in Japan's recorded history. The earthquake caused a huge tsunami with a wave height of over 10m. It also caused a temporary rise in sea level of up to 40m.

The tsunami devastated the Pacific Coast of the Tohoku and Kanto area, cutting off communication routes. More than 390,000 houses were damaged or destroyed, and more than 400,000 people were displaced in the immediate aftermath.

The Fukushima Daiichi nuclear plant was also hit by the tsunami, causing a nuclear crisis that led to long-term evacuation for those living nearby.

The government built 54,000 temporary housing units. These were to last until safe permanent housing could be built. The government also released empty rooms from existing public housing and

rented private houses and apartments for affected people.

The government provided grants of US\$ 6,000 to families who were able to return home but lacked the financial resources to carry out repairs.

In Ofunato city the fishery business was devastated, and the up to 5,500 houses were damaged. The hilly landscape in Iwate prefecture, this resulted in many houses being damaged but not washed away, despite being flooded by the tsunami.

Despite the high levels of damage, not all home owners received grants through initial government schemes. This is because Iwate prefecture closed its application process earlier than other affected prefectures.

In Ofunato city, the government immediately constructed temporary housing for 1,800 households as an emergency measure. Later on, 150 unoccupied public housings and 500 unoccupied private apartments were rented by the government to serve as temporary housing.

Those that had not been evacuated often had difficulty rehabilitating their houses due to lacking resources.

Selection of beneficiaries

Once the allocation of Emergency Repair Aid grants was completed it became clear that

many families in Iwate prefecture and Ofunato city were still unable to repair their homes.

The organisation selected households based on financial need, the relative impacts that repairs would have on the family's quality of life and how much the total cost of repairs would be covered by available financial aid.

Implementation

The organisation provided cash assistance for repairs to houses in Ofunato city. As households had to make applications to receive the financial aid, information about the project was advertised in different media and communicated through individual house visits to ensure that all residents were aware of the process.

The organisation approved 150 of 270 applications.

The works were done by local carpenters selected by beneficiaries themselves. This approach respected local Japanese culture and existing relationships in communities.

Each household signed a contract with the organisation, stating that the household and carpenter (rather than the organisation) had joint responsibility for the construction process. The organisation paid the repair fees directly to carpenters and monitored the construction.

The organisation made technical assessments before and after the construction, using local, qualified architects. These architects were specialised and qualified with relevant licenses for the works. Their titles would translate as “qualified architect of the first class”, “qualified architect of repair technique”.

The technical assessments were used to decide whether a house was safe to repair and to provide recommendations on how to improve the disaster resistance of the buildings.

Advice

The organisation provided recovery advice to 1,155 households, including the 150 that received financial assistance. Advice was provided on housing, financial issues, house repairs and how to access government aid.

The project staff conducted the advisory sessions in the temporary housing complexes and local community centers. Staff explained the aid available for each individual case of damage.

In some cases external experts such as lawyers, architects and financial planners, accompanied project staff.

The staff provided the residents with information that they regularly gathered from the city offices and updates on various government assistance programmes.

The project tried to ensure that people who were less mobile, particularly elderly people living on their own, had equal access to information by making home visits.

The organisation hired two full-time staff to manage the project.

Coordination

By coordinating with the city administration and NGOs, the correct up-to-date information was delivered to as many households as possible.

DRR components

There was some concern that the tsunami-affected area would remain at high risk of future hazards



Before and after photographs of housing repairs.
Photo: Habitat for Humanity Japan

and that encouraging people to repair their original homes was not reducing their exposure to future disasters.

The organisation tried to obtain specific hazard information on each location before they visited each house.

Before repairing a house the team checked whether it was in an area defined as a hazardous area in the city revival plan in which case the building did not take place.

Before rehabilitation, architects reviewed each house to ensure their suitability for living.

Logistics

Financial aid was directly paid to the builders and not to the homeowner. The payments were made by the organisation's headquarters in Tokyo to guarantee secure bank transactions. All of the construction firms that the organisation worked with had bank accounts.

The organisation checked in advance a list of appointed carpenters / builders from city offices. This was required to ensure that the organisation did not contribute to anti-social entities.



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Before and after photographs of housing repairs. Photo: Habitat for Humanity Japan

A.15 Kenya (Dadaab) – 2011 – Famine / Conflict

Update:

Keywords: Planned and managed camps, Emergency shelter, T-shelter, Core housing, Site planning, infrastructure,

Country:

Kenya

Project location:

Dadaab

Conflict / disaster:

July 2011 famine and continuing conflict

Camp population:

At maximum over 450,000 registered refugees

Project outputs:

Camp planning and site construction for 76,000 people on two sites

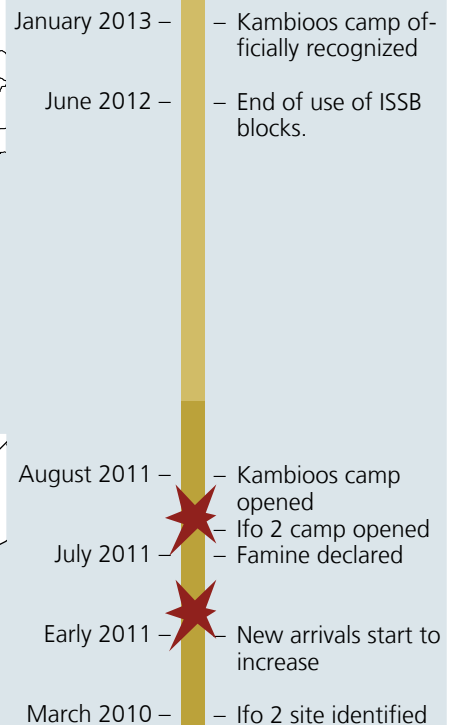
Plot size:

Up to five people: 10m x 12m

More than five people: 12m x 15m



Project timeline



Project description

Following a massive influx of Somali refugees to the camps at Dadaab in Kenya, two new camps were planned and built. Camp services were set-up and a refugee-led committee was established to manage the camps. Planning was for 200,000 people, but poor security and lack of government recognition meant that far fewer people settled at the sites. The majority of families were sheltered in tents. Later shelters were built with plastic sheet on timber frames. As families became established, many built their own structures. After some initial construction, use of Interlocking Stabilised Soil Blocks (ISSB) was prohibited by the government.

Strengths and weaknesses

- ✓ Qualified and experienced technical experts oversaw camp planning and construction.
- ✓ The Government of Kenya supported site identification, physical planning, shelter construction and registration of refugees.
- ✓ Significant refugee and host community participation in the project.
- ✓ Complete settlement services were established. (including water supply and sanitation, health, education).
- ✓ Settlements were built rapidly once there was agreement to start.
- ✓ Site planners learnt lessons from the current camps and paid particular attention to improve firebreaks.
- ✗ The camp populations removed vegetation and damaged the surrounding environment.

- ✗ There were difficult labour relations between the host community and the refugee population, initially exacerbated by different policies by different implementing organisations.
- ✗ Security was poor and the lack of official recognition of Kambioos camp meant police presence was insufficient.
- ✗ Poor security, challenging host community relations and difficult access meant that the camps ended up being much smaller than planned. The growing population of the camps at Dadaab, ended up moving into the existing densely populated sites.
- ✗ There were insufficient materials available to the refugee population for shelter construction and fuel.
- After 300 shelters were built with Interlocking Stabilised Soil Blocks (ISSB), the government prohibited further construction to avoid the sites becoming permanent camps.



New sites were identified, planned and constructed within 20km of the existing town of Dadaab to cope with major new influxes and a backlog of non-registered new refugee arrivals. Initial planning was for sites for 200,000 people.

Photo: Joseph Ashmore

Background

(See *Shelter Projects 2009*, A.10)

The conflict in Somalia led to forced migration of thousands of Somali nationals into the neighbouring countries, including Kenya. Since 1991, the Garissa County of Kenya became a home to refugees fleeing war torn Somalia. Dadaab, a small town within the County is located 100km from Garissa town and 90km from the Somali border.

In 2009, Dadaab had a population of 250,000, mainly Somali refugees. They were settled in to three major camps known as Ifo, Dagahaley and Hagadera.

Continuous drought inside Somalia coupled with persistent fighting led to further displacements from Somalia into the existing camps in Kenya. By mid-2011, up to 1,400 Somalis were arriving per day, leading the camp population to increase to over 450,000 people.

Site selection

The massive influx of refugees led to the need for new camps.

The process to identify new camps began in 2009 with three possible sites being identified for Kambioos in Fafi district and one site for Ifo extension in Lagdera District.

After a series of negotiations with the respective host communities, it was agreed that the two camps were vital for decongesting the existing camps.

During these negotiations, there was a significant concern from the

government that additional camps would signify increased insecurity, not a positive message for Kenya to be promoting internationally. Additionally, there was the concern that refugees would clear vegetation, potentially causing conflict with the host communities.

Site planning

Both camps were planned based on a community concept with 10 or 12 shelters.

Each camp was planned with an 8m wide sanitation line between communities. This break was for sanitation facilities, including communal showers, latrines and garbage pits for the initial settlement. Roads were 15m wide.

Strong camp management was required to enforce these breaks, as there was a tendency for households to build fences out of thorns and brushwood that encroached on them. This had also been an issue in existing camps in Dadaab.

The camps were built in phases. Each of the phases of "Ifo 2" camp was planned to measure 2.5km x 1.5km. Kambioos site was built in four planning phases each with 10 sections and seven residential blocks.

Each plot initially measured 10m x 12m. However, as households encroached on sanitation lines and roads, the plot sizes were adjusted to 12m x 15m when relocation of refugees living in the outskirts began in mid-2012. Depending upon their size, larger families were allocated two or three plots.

Family latrines and showers were built at the corner of each individual plot, 8–10m from the shelter. It was expected that refugees would take proper care of them and not allow foul smells to develop. When a latrine was full it would be decommissioned, backfilled and replaced with another one close by.

Implementation

Parts of "Ifo 2" camp had flood zones. As a result a Topographical Survey was conducted in 2011 and recommendations were made for flood mitigation and control measures.

The site of Kambioos had fewer flooding issues, but there were initially concerns about the water scarcity, and the additional challenges caused by the sandy soil and a bedrock. This created issues in pitching tents and digging latrines, while access roads, both to and within the site were a challenge.

Both sites had significant security issues, hampering access, with major incidents, including kidnappings occurring at both sites.

The following roles were taken on by different organisations in the two camps:

- **Camp management agency:** responsible for site planning and shelter in the two camps. A team of 6 surveyors and planners per camp and one overall site planner was responsible for supervision of all works.
- **Construction:** responsible for roads, schools, health facilities and general infrastructure provision in the two camps



The site of Kambioos was covered in dense and thorny vegetation and had very sandy soil, requiring additional care to be taken with construction of shelters, latrines and other infrastructure. Photo: Joseph Ashmore

(six staff were involved). An organisation assigned two engineers in Kambioos and another two in "Ifo 2" to directly monitor the works that were sub contracted to local building contractors.

- **Shelter partner:** responsible for emergency shelters in the two camps (four staff were involved).
- **Operating partner:** responsible for sanitation and hygiene in Kambioos alone and over 40 labourers to support in latrine construction (six staff were involved).

Most of the challenges experienced in the site construction were labour related. Early on in the construction, different partners paid different wages to labourers. Wages for labourers were later standardised to reduce delays. Pay delays also caused strikes for up to 7 days.

Initially there were challenges in identifying who represented the host community, as many forceful individuals claimed to be a representative.

Shelter

At Ifo 2 camp, a total of 16,000 tents were issued to refugee families during the relocation in July – October 2011. By the end of 2012, they were in a bad condition and 6,000 were replaced with new tents.

Tents in the camps had a limited lifetime averaging just over 6 months. Although many of the arriving families from Somalia were accustomed to nomadic and moveable structures, training in maintaining tents was required.

Over time, many of the refugees covered their tents with plastic sheets while others purchased iron

sheets which they used to construct shelters in addition to the tents.

To provide families with a more durable solution, Interlocking Stabilised Soil Block (ISSB) shelters were built from May 2012 onwards. The plan was to construct 16,000 shelters in a 2 – 3 years period.

By the end of June 2012, 296 of these shelters had been completed. In July 2012 however, the Kenyan government stopped the production of ISSB shelters stating that these were permanent structures rather than refugee shelters.

In November 2012, the construction of temporary shelters was approved by the Kenyan authorities. These had timber frames, plastic sheeting walls and a corrugated iron roof. This design was an interim structure, to facilitate rapid delivery of a durable roof, while negotiations on other shelter options continued.

Tents were also used for shelter at Kambioos camp, and plans were put in place to replace these with temporary shelters as well.

Services

When the sites were set up, water was brought in by truck. Boreholes were made and 16.5km of water pipeline, 41 tap stands and 246 taps were later installed.

By the end of 2012, one operational borehole in Kambioos camp delivered sufficient water for its population to receive 20 litres per person per day. A health post and primary schools were also serving the population, and plans to build a secondary school were underway.

Camp management structures were established in both camps (one chairman and one chair lady)

with Section Leaders, Community Peace and Protection Teams, Site Planning, Shelter, Food Advisory WASH and Graveyard committees.

The future

Kambioos camp suffered from several serious security incidents. One of the reasons for poor security at the Kambioos camp was that there was a lack of police presence, despite a plot measuring 300m x 300m had been allocated for a police station. By 2013 plans were underway to construct police station.

Police were not deployed since the site was not officially recognized by the government until 2013. As a result, financial resources were limited, and only 18,000 people moved into the camp initially planned for 150,000 people. Similar issues were faced at Ifo 2 camp with a total population of 69,000 by the end of 2012. The rest of the new arrivals settled in the outskirts of existing but congested camps.

No significant fires were reported in either camps. This was attributed to the proper planning and good management, reducing encroachments into open spaces and effective firebreaks. This was in contrast with the congested old camps.

On 11th January 2013 Kambioos camp was officially recognized by the government, and became "foreseen as one of the camps where refugees residing in urban areas in Kenya will be relocated to, in accordance with the government Directive issued in December 2012 calling for the relocation of refugees and asylum-seekers from urban areas to refugee camps".

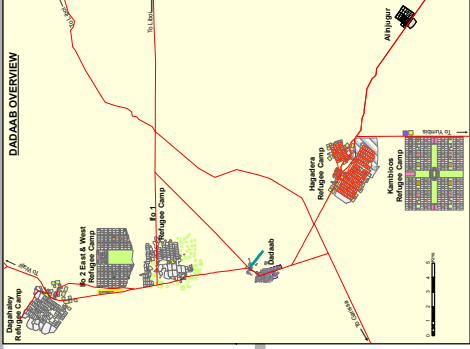


Top to bottom: Site marking; Tent erection on a windy day; Newly established blocks at IFO camp extension. Camps were organised into a) plots, b) communites, c) blocks, and d) sections. Photo: Joseph Ashmore

Kenya- Fafi District Kambioos Refugee Camp Overview

As of June 2012

Sources; UNHCR, LWF/DWS-Dadaab ©2012
Datum: WGS 1984
Projection: UTM Zone 37
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

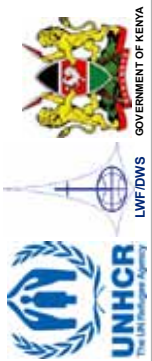
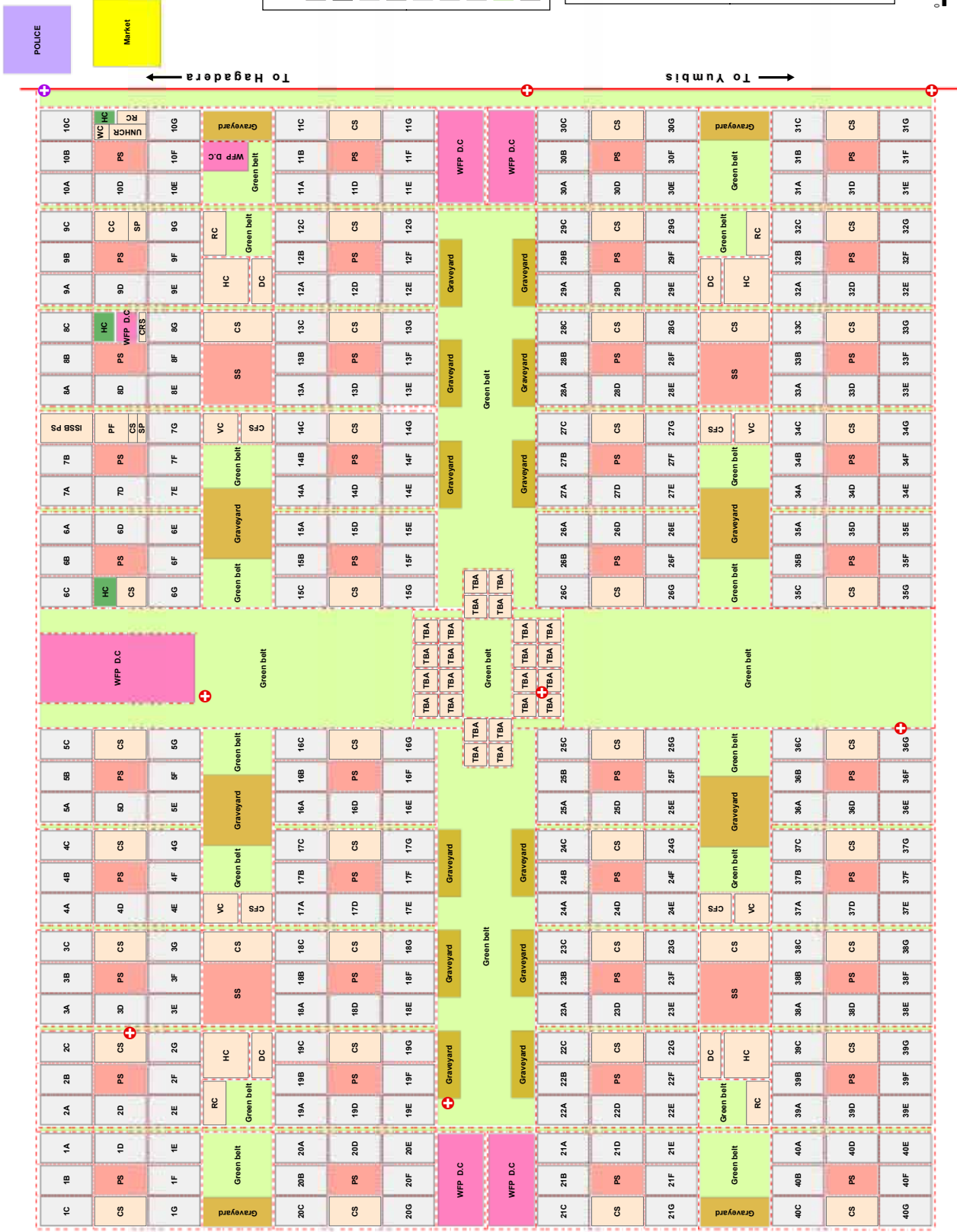


Legend

- Food: Pink rectangle
- Blocks: Light blue rectangle
- Health: Green rectangle
- Market: Yellow rectangle
- Security: Purple rectangle
- Education: Orange rectangle
- Sanitation: Light green rectangle
- Environment: Light blue rectangle
- Camp Facilities: Light orange rectangle
- Major road: Solid red line
- Utility road: Dashed red line
- Trails: Dotted red line
- Boreholes: Blue circle with a dot
- Operating: Purple circle with a dot
- Not In Use: Red circle with a dot

Key

- CC - Community Centre
- CS - Community Space
- CFS - Child Friendly Space
- CRS - Catholic Relief Services
- DC - Disability Centre
- HC - Health Centre
- IMC - International Medical Corps
- IRC - International Rescue Committee
- ISSB PS - Interlocking Stabilised Soil Blocks Production Site
- PS - Primary school
- RC - Reception Centre
- WC - Women's Centre
- SP - Section Post
- TBA - To Be Allocated
- VC - Vocational Centre
- WFP DC - World Food Programme Distribution Centre



A.16 Lebanon – 2007 – Conflict

Update:

Keywords: Unplanned camps, Planned and managed camps, Urban neighbourhoods, Housing repair and retrofitting, Cash, Structural assessment.

Country:

Lebanon

Project location:

Palestinian “gatherings” in and around Saida, southern Lebanon

Conflict:

Palestinian refugees

Displacement date:

1948 to present

Number of people displaced:

40,000 Palestinian refugees in gatherings (2009), 450,000 Palestinian refugees in Lebanon (2012)

Project outputs:

Repairs of 557 shelters, including 412 roof repairs

Occupancy rate on handover:

Close to 100 per cent

Shelter size:

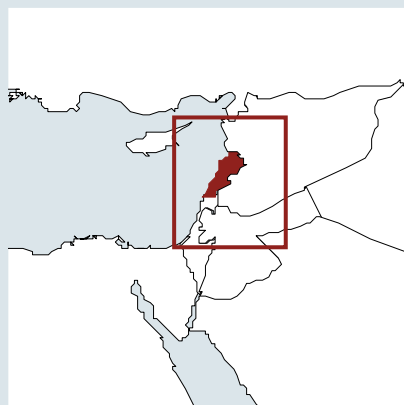
40m²–60m², Average 50m²

Materials cost per shelter:

US\$ 600 – US\$ 2,500: Roof only
US\$ 5,500: Full rehabilitation with services

Project cost per shelter:

US\$ 2,300: roof only
US\$ 7,800 full rehabilitation with services.



Project timeline



Project description

The organisation ran a series of projects since 2005 to improve the shelter standards of Palestinian refugees living in “gatherings”. Structured repairs focusing on roofs were conducted with associated water and sanitation improvements. Eight gatherings in the Saida area were targeted with around 25 per cent of the shelters repaired. The organisation also carried out other rehabilitations in other parts of Lebanon during the same period. Many of the initial lessons learnt were adopted by other organisations in subsequent responses.

Strengths and weaknesses

- ✓ The project built on its own experiences in different implementation methods. As it progressed it reduced reliance on contractors, resulting in significant efficiency and quality gains.
- ✓ Effective new technical solutions for roofing were used.
- ✓ The organisation worked hard with multiple stakeholders to negotiate access to gatherings where civil works were previously forbidden due to land tenure, political or conservation reasons.
- ✓ Introduction of beneficiary participation in the form of unskilled labour was a success.
- ✗ There were protection issues with some renters being evicted from properties following rehabilitation.

This could be mitigated against through improved social analysis and involvement of local leaders.

- ✗ Community participation and support for the project could have been improved through greater community mobilisation. Greater inputs from beneficiaries in terms of labour would also have helped to bring down relatively high unit costs.
- ✗ Construction contractors performed poorly, leading to programme delays and poor quality construction. To remedy this, the organisation was forced to directly implement the construction.
- The relatively small scale of interventions and the significant costs per household reflect the complex operating environment and the nature of the works required.



The project made improvements to different types of structures, including multi-storey buildings. The organisation moved from a contractor-led approach to a direct-build approach to construction to improve quality. Photo: Julien Mulliez

Background

The Arab-Israeli war of 1948 displaced thousands of Palestinians, with thousands seeking shelter in camps in Lebanon. There is still no political solution to the displacement, and many refugees experience very poor living conditions.

The largest Palestinian refugee camp, Ein El Hilwe, is in Saida. The gatherings in the Saida area are found in three types of location:

- within Ein El Hilwe camp itself
- between Mieh Mieh and Saida city
- within the old city of Saida in urban Lebanese communities

A survey of all Palestinian gatherings in 2009 concluded that around 30 per cent of the housing in Palestinian gatherings had shelter rehabilitation needs. Gatherings within the urban Lebanese communities in Saida tended to have less urgent needs compared to those gatherings located in Ein El Hilwe camp. The majority of gatherings had high or moderate shelter needs, often with leaking zinc roofs, water-damaged concrete block walls, and serious structural problems.

Water and sanitation problems were also identified, mostly due to poor chlorination practices and poorly-maintained water networks.

Land ownership in Saida gatherings ranges from public land, which is illegally occupied but tolerated by the municipality, to illegally occupied private land where evictions are being sought by landlords.

Shelter types included:

- multi-storey buildings with concrete roofs, converted from

barracks built for the Lebanese families displaced by the 1956 earthquake which were then later sold or rented out

- multi-storey buildings with zinc roofs and very limited space between buildings
- single-storey concrete housing, often low quality with zinc roofs
- new apartment buildings with concrete roofs in good condition.

The most dangerous housing was often found in the areas where land-use was disputed.

Selection of beneficiaries

The organisation's social team made home visits in the target areas, filling in questionnaires with both technical and social data. This was followed by a technical team mapping housing with "highly urgent shelter needs". This beneficiary list was submitted to the gathering's local committee.

After the committee made additions to the list, the organisation made a final decision based on overall social and technical criteria, including household income, age structure, and whether members of the household were disabled.

The social team also communicated with the local population throughout the project to minimise potential conflicts and encourage participation.

The gathering's local committee was involved in the identification of people who would be involved in the cash-for-work part of the construction. The organisation reserved the right to make a final decision over who would work in order to ensure fair selection.

Implementation

As a number of shelters were found to be structurally unsafe, stabilisation works needed to be conducted with care. Inhabitants were advised to evacuate until repairs had been completed.

By repairing the shelter the organisation was effectively guaranteeing its safety to the inhabitants and therefore taking on considerable responsibility for the quality of the work.

The organisation made a transition from contractor-led rehabilitation to direct-build. This decision was taken following concerns over the quality of contractor's work. Those contractors that were able or willing to work in the gatherings often used unskilled labour and amateur equipment.

The organisation found that it could ensure better quality work, and improve structural safety by implementing directly. It was also able to carry out the work cheaper.

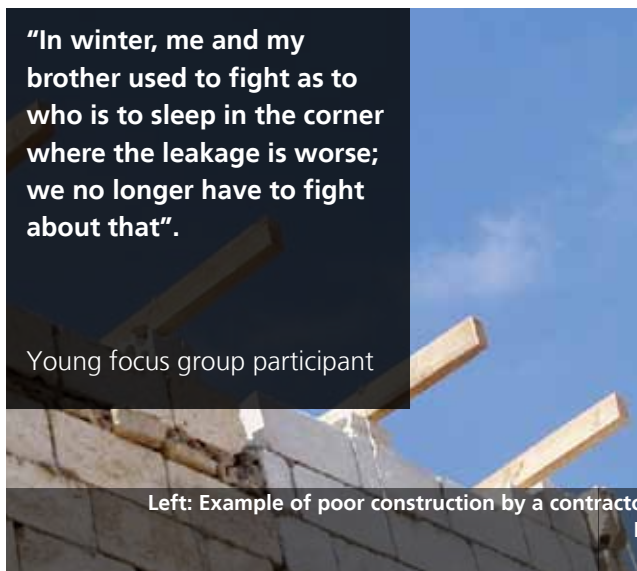
By implementing direct-build projects the organisation was also able to select community participants to receive cash-for-work and to provide basic construction training for beneficiaries during the repairs.

Rehabilitation followed a five-step process:

1. Information of stakeholders and selection of beneficiaries,
2. Bill of Quantities (BoQ) and plans of selected shelters,
3. Purchase of materials and equipment, preparation of workers contracts
4. Implementation of works
5. Handover.

“In winter, me and my brother used to fight as to who is to sleep in the corner where the leakage is worse; we no longer have to fight about that”.

Young focus group participant



Left: Example of poor construction by a contractor in 2007, Wooden girders insufficient to support the new roof.



Right: Direct build, correct use of ring-beam to support the roof.

Photo: Arnaud Fratani

A specific bill of quantities had to be drawn up for each household and each household had to sign an agreement before work could start.

The organisation spent considerable time and effort to negotiate with authorities for permission to repair shelters in illegal gatherings. A good relationship with the influential Members of Parliament from all political sides was developed and they became keen to take partial credit for the assistance projects. The organisation also required specific authorisation from the Lebanese army for the transport of building materials to the shelters.

Once the materials were purchased, meetings were held to provide households with a complete overview of what work would (and wouldn't) be done.

Shelters were divided into groups and work was carried out on 8 to 12 shelters at a time. An expatriate project manager was supported by a local engineer and foreman for daily site supervision.

A maximum of seven weeks to complete a shelter was set as a target.

DRR components

Where possible, the organisation reinforced the structure of shelters in order to improve their earthquake resistance. This included improved foundations, lintels, ring beams, reinforced slabs, and in some cases, additional steel girders supported with steel columns.

Technical solutions

Working on multi-storey buildings required special considerations. Repairs often involved the use of large amounts of sand, cement and tiles, creating potentially dangerous loads on weak, elevated structures. Floor loads were reduced by up to 50 per cent by:

- cutting the amount of sand used for flooring which increased the strength of the concrete mix
- reducing the thickness (with some resulting loss in levelness of the floor);
- reducing the amount of mortar for tiling;
- using lightweight tiles in place of traditional tiles.

Following experience from previous projects, three key technical approaches were adopted by the organisation from 2008:

1) Reinforced concrete ring beams

To support rehabilitated roofs, concrete ring beams were introduced. These would reinforce the structure, add a slope for the roofs and provide connections to support the roofing girders.

Steel reinforcement was used in the corners to connect walls together and make the structure more earthquake resistant.

2) New, insulated roofs

A french roofing product, made of zinc sheet, insulation material and a bitumen was introduced. The

small panels made the roof easier to repair which is useful in conflict areas where localised roof damage is common. However, skilled workers were required to lay it, and therefore greater management by the organisation was required.

3) Structural reinforcements

Concrete roof/floor slabs in multi-storey buildings were often poorly supported. Steel beams were installed, supported at both ends by reinforced concrete lintels or by a steel column fixed on an isolated reinforced concrete foundation. During the rehabilitation the steel beams were supported by metal props.

A number of walls were found to be unable to bear the loads placed on them and new reinforced concrete columns were built to make the shelters safer.

Impacts

An independent assessment at the end of 2008 concluded that family relations, decreased tensions within the households, reductions in infectious diseases and improved personal hygiene practices were a direct result of the project.

The assessment noted that poor housing conditions tended to have a disproportionately large negative impact on young women and girls. The impact of small things such as rehabilitated bathrooms with lockable doors made important positive impacts on girls' and women's privacy.

A.17 Lebanon – 2011 – Conflict

Case Study: **Keywords:** Hosting, Support for host families, Rental support, Housing repair and retrofitting, Cash / vouchers, structural assessment

Country:

Lebanon

Project location:

Bekaa valley and Wadi Khalid (northern Lebanon)

Disaster:

Syrian conflict

Conflict date:

March 2011 (ongoing)

Number of people displaced:

Project start: 6,900 registered refugees in Lebanon
End of 2012: 119,596 refugees, though numbers were rapidly rising

Project outputs:

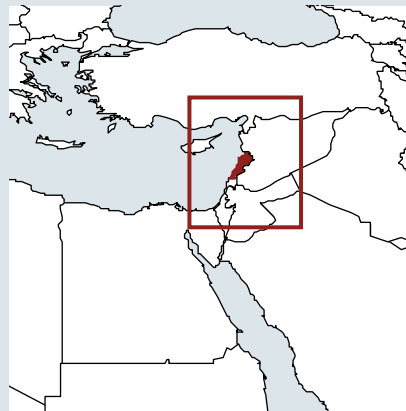
Rehabilitation of 980 houses
"Sealing off" 1,555 houses
Non-food items for 1,200 households

Shelter size:

Variable
One room with sanitation facilities per hosted family

Cost:

US\$ 1,700 / family housing rehabilitation
US\$ 40 / family sealing off



Project timeline



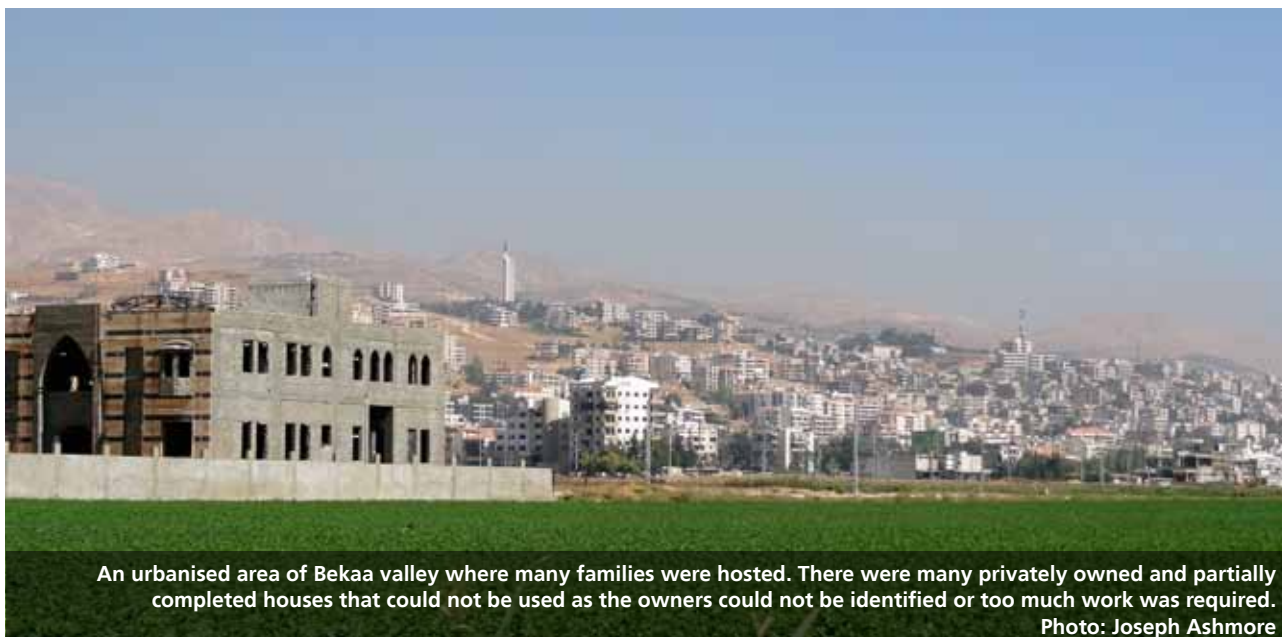
Project description

This project rehabilitated houses where people fleeing from Syria were hosted. It also made quick repairs to winterise dwellings and distributed non-food items, including stoves and fuel. Particular care was taken with targetting of affected populations through detailed social and structural assessments of hosting arrangements. Assessments were followed by phased cash payments for host families to make repairs. As refugee numbers continued to rise, the organisation conducted pilot cash for rent and transitional shelter construction projects.

Strengths and weaknesses

- ✓ The project built upon existing hosting capacities and provided support for the host families.
- ✓ The investment in improved shelter and domestic infrastructure remained with the hosting families. This encouraged good relationships with the refugees.
- ✓ Although the project was focused on shelter, the project was flexible and included works to improve water and sanitation for hosts' houses.
- ✗ The project required a large number of staff to make multiple visits per house. This made the project difficult to scale-up quickly in response to rapid refugee influxes.
- ✗ As a practical solution to assure tenure, limited one-year hosting agreements were signed, after which there was no assurance that the families could

- remain. In reality, however, there were few evictions.
- ✗ The total hosting capacity in case of new influxes of refugees was not assessed in detail.
- ✗ It was not always clear if hosted families stayed free of charge or had to make some payment to their hosts.
 - There are significant numbers of privately owned empty and incomplete buildings in Lebanon.
 - Whether or not refugee families would be welcomed by host families strongly depended on the political allegiances of the local authorities.
 - Significant intervention costs per family were due to high commodity costs in Lebanon.
 - Although the total number of direct beneficiary households may seem relatively low, assessments actively identified many families as being able to cope without assistance.



An urbanised area of Bekaa valley where many families were hosted. There were many privately owned and partially completed houses that could not be used as the owners could not be identified or too much work was required.

Photo: Joseph Ashmore

Before conflict in Syria

Lebanon has had a long history of immigration from Syria, with hundreds of thousands of Syrians estimated to be working and living in Lebanon.

Despite its relatively small size, the climate in Lebanon varies greatly both seasonally and geographically. In summer it can be very hot at lower altitudes. During winter, parts of the north and east of the country see snow, while coastal regions remain warm.

There are a large number of privately owned, unoccupied or partially complete houses across Lebanon. Most houses are reinforced concrete buildings with cement block walls. A few older houses have mud block walls. Most buildings in urban areas as well as in rural areas are multi-storey.

Lebanon is classified as an upper-middle-income country by the World Bank. There is significant wealth, especially in coastal areas. However, there is also considerable poverty, and migrant workers can be found across Lebanon living in makeshift shelters made from timber and plastic sheeting.

During the conflict

Following intensified civil conflict in Syria in March 2011, thousands of Syrians fled into Lebanon, mainly into the north and east of Lebanon,

the Akkar Region and the Bekaa valley. The numbers of registered displaced Syrians rapidly increased from around 6,000 at the project inception in October 2011 to over 100,000 by the end of 2012. This far exceeded initial planning figures for the expected scale of migration.

The situation of Syrian refugees in Lebanon is made more complicated by political and religious divisions. Refugees mainly settled in locations with sympathetic municipalities, where they felt safe. This led to relatively localised populations of refugees in the Bekaa valley. It also led to challenges in identifying refugee families, as some preferred to remain in anonymous.

Shelter strategy

The strategy adopted by the organisation focussed on six core activities:

- **Housing rehabilitation** - Mid-term solution that provides weather-proofing (doors and windows), and improves sanitation, safety, electricity and privacy
- **Non food item distribution** - This includes heating stoves and refill coupons and hygiene kits
- **Management of collective shelters** - Capacity building and follow-up to provide the larger collective shelters with proper management.

- **Weatherproofing** - Quick rehabilitation with plastic sheets to provide weather.
- **Cash for rent and t-shelters** - Planned in case of larger influxes in 2013.

This case study focuses on the housing rehabilitation component.

Initial beneficiary selection

The project was established in locations with the largest populations of registered Syrians displaced by the conflict.

As there were relatively few actors involved in host family support early in the response, the organisation was able to coordinate with the other organisations, both formally and informally, in the field as well as with the local authorities.

The organisation received a list of Syrian families from the United Nations who were registered as being displaced from Syria, and who met additional vulnerability criteria. These criteria included families with extremely low incomes, families headed by women or elderly people, families with chronically ill members, families with no adults and households without a water supply.



House being refurbished to house several refugee households.
Photo: Joseph Ashmore



Migrant worker housing. Such structures were in use before the refugee influx.
Photo: Joseph Ashmore

Household assessment

The organisation carried out a further assessment visiting all shelter with a team of engineers and social mobilisers. This team completed two assessment forms: one highlighted structural and infrastructure needs with questions, including:

- Are the kitchen and wc separated?
- Is the bathroom connected to a permanent water supply?
- Are there sewerage connections/networks?
- Is there structural damage?
- Is there access to drinking water?
- Is there access to electricity?
- How large is the room?
- How many people are sleeping in each room?

The second form focussed on social issues and other vulnerabilities. Approximately one quarter of households were identified as needing assistance while the others appeared to be coping adequately.

Implementation

Once families had been identified for inclusion in the project, the engineering team returned and conducted a detailed assessment of the works required using a standard but detailed bill of quantities template.

Each line in the bill of quantities was given a unit cost, from which materials costs were calculated.

The documents were reviewed in the office, and a schedule of work was agreed with the homeowner.

“Repair minor cracks in walls - cut out the cracks with a masonry grinder to form square edged slots and remove all dust and debris. Apply Epoxy Primer liquid by brush and whilst tacky lay in the putty-like repair mortar, Mouldable Epoxy Mortar. Apply mesh tape and plaster. Work to include all plaster.”

Example of detail in the BOQ

Cash grants were allocated to households so that they could pay for repairs. Cash grants were paid in installments following the organisations’ monitoring teams’ confirmation that certain stages of the construction had been completed:

- 1st installment of 25 per cent was paid when the contract agreement was signed.
- 2nd installment of 30 per cent was paid when sixty per cent of the 1st installment were completed.
- 3rd installment of 45 per cent paid on completion.

A contract agreement was signed by all parties to prevent the host family from demanding additional rent from the Syrian family or evicting them following the rehabilitation.

The organisation operated from two field offices, each less than three hours drive from Beirut. Staff worked in teams of three people. Project managers at each location supervised two teams each.

Collective centres

In addition to rehabilitation of host family houses, some collective centers were also repaired. Typical works carried out include:

- replacement of doors and windows and broken walls
- roof repairs
- rehabilitation of sanitation facilities
- provision of cooking facilities
- water and electricity supply
- installation of partitioning for privacy.

Further works, such as decorating and the provision of additional social spaces were also assessed but not prioritised during the emergency rehabilitation.

What next?

In late 2012, as the number of Syrians in Lebanon continued to rise rapidly, and winter approached, additional solutions were required. New programming responses included rental subsidies, ongoing distribution of non-food items, including stoves and fuel vouchers, and simple “sealing-off kits”. These kits consisted of timber, plastic sheeting, tools and fixings that could be used by mobile teams to seal windows and doors in unfinished buildings.

Contingency planning was also undertaken to include tents and other emergency shelters that could be deployed at scale, either individually on small plots of land or inside unfinished buildings.

A.18 Madagascar – 2012 – Tropical Storm

Case Study: **Keywords:** Construction materials, Core housing construction, Training, Guidelines and training materials.

Country:

Madagascar

Project location:

east and south east Madagascar

Disaster:

Intense tropical storm Giovanna and moderate tropical storm Irina

Disaster date:

February 2012

Number of houses damaged/destroyed:

45,500

Number of people displaced:

332,204 affected

55,060 people displaced

Project outputs:

Construction of 598 shelters

Training of builders and beneficiaries

Shelter size:

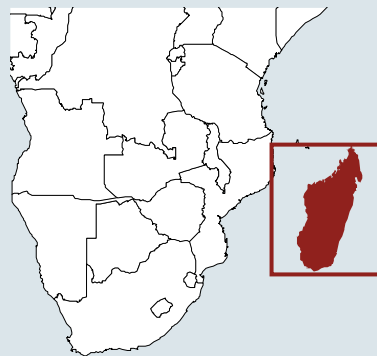
12m²

Materials cost per shelter:

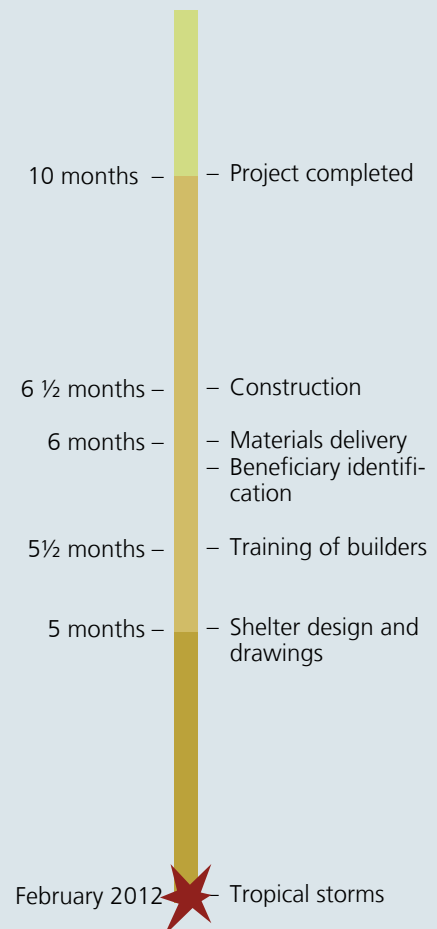
US\$ 128

Project cost per shelter:

US\$ 250



Project timeline



Project description

This project formed community committees to select beneficiaries and monitor the building of 599 houses in rural locations. Close monitoring by beneficiaries allowed a degree of remote management of the project to improve quality in a difficult to access area. The project aimed to build safer shelters using local materials.

Strengths and weaknesses

- ✓ To reduce overheads whilst maintaining quality, the project used remote management with community committees to monitor and ensure material and construction quality.
- ✓ The project used a committee to select beneficiaries and improve transparency.
- ✓ The project was accompanied by an education programme on safer building practices to increase project reach and support people who were not directly supported by the project.
- ✓ Municipal authorities were involved in issuing land certificates for landless households.
- ✓ The design process involved beneficiaries and local craftsmen from the start to ensure that shelters were culturally acceptable and adapted to local environmental conditions.
- ✗ Illiterate community members had difficulties using the quality-control checklist. However, they were

assisted by committee members in each village.

- ✗ Different approaches between organisations meant that beneficiaries did not always accept solutions, making implementation problematic.
- ✗ Not enough consideration was given to other local materials such as bamboo.
- ✗ Shelters should have varied according to materials used.
- ✗ Due to budgetary constraints shelter dimensions were not adapted to household size.
- ✗ Increasing prices of materials led to a reduction in the number of households supported from 680 to 598.
- The project only received two-thirds of the funds required for its original budget. Cost savings were made by reducing staff and the number of beneficiary households.
- Problems with local suppliers caused a month long delay in project implementation.



Shelter under construction (left) and completed (right). The project used remote management through community committees to build 599 houses in difficult to access villages and conduct trainings. Photo: CRS

Before the cyclone

The island of Madagascar is prone to cyclones, floods, droughts, epidemics and pandemics, fire and locust swarms. Previously, in 2007, a major cyclone directly affected about 525,000 people.

Over the past 35 years, Madagascar has experienced 46 natural disasters affecting a cumulative total of more than 11 million people. Government studies from 2008 indicate that there will be a greater intensification of cyclones and increased rainfall over the next 50 years.

After the cyclone

Tropical cyclone Giovanna hit eastern and central Madagascar in February 2012, causing significant damage. Winds peaked at 230km/h. It was followed by the severe tropical storm 'Irina' and there were subsequent floods and landslides in the south-east.

The two disasters caused significant damage to housing, agriculture, livelihoods, health and schools. Less than 5 per cent of the population had access to rice stocks and less than 50 per cent had access to staple foods. Approximately 80 per cent of mixed-crop farmland and rice fields were destroyed by the storms or resulting flooding. The storm season coincided with the seasonal 'lean period' for farming families.

Many affected households sought refuge in welfare centres or with relatives and neighbours. One

month after the storm, only 15 per cent of households had managed to rehabilitate their shelters.

Many households headed by women, the elderly or disabled people were often not able to rehabilitate their homes within 6 months of the cyclone.

Materials to repair shelters were hard to come by, and many families were too poor to buy them.

Selection of beneficiaries

During national coordination meetings, organisations were allocated different communes to work in. A commune is made up of several villages and each organisation selected beneficiary villages based on damage reports.

The organisation established a community committee in each village (see below), and households who had lost their homes and who were unable to rebuild, were the target beneficiaries. The focus was mainly on the disabled, the elderly, pregnant women and large households.

Implementation

The shelters were built on land belonging to the households before to the cyclones. In only one case, where the household had rented their accommodation prior to the storm, was it necessary for the authorities to allocate a new plot of land.

The organisation began by reviewing the government shelters that were built in response to the

2004 cyclone. It replicated the design components of the shelters which survived the cyclone and established a checklist for construction.

A funding shortfall of nearly a third meant planned staff numbers were cut and responsibility for monitoring construction quality was passed onto the community committees.

The project was implemented in 83 villages across three districts. Each district was supported by three field workers, a technician and a project coordinator.

A typical construction required two carpenters and eight labourers, paid through food-for-work. At least two of the labourers in each team were women. Once materials were available, a house could be built in five days.

Committees

The project was implemented through the village committees. Committees were responsible for identifying beneficiaries and monitoring the quality of materials and construction. Representatives included:

- the village chief
- the mayor of the commune
- a church representative
- a beneficiary representative.

One or two members of the committee monitored housing construction using the construction checklist. These individuals were usually teachers or other literate people.

The community committee worked with a community mobiliser from a partner organisation and with the local government office responsible for facilitating the emergency response.

One person in each village was nominated as a communications focal point to provide two-way communication between beneficiaries and responding organisations.

Technical capacity

The committees provided technical training to people living in the village. This allowed the households to monitor the construction quality themselves and allowed technical staff to provide more targeted assistance.

Staff members and committee members were provided with detailed plans to ensure quality in construction. Home owners and committee members were supplied with a simplified construction checklist that helped them to follow the progress of construction at a number of key stages.

DRR components

The shelter design was an adaptation of traditional houses in Madagascar with the following improvements to ensure better resistance to future cyclones and flooding:

Foundations

- Pillars were buried to a depth of at least 750mm.
- A mix of stones (5-10cm in size) was compacted beneath and around the pillars.
- Pillars needed to be dry before sinking them into the ground.

Walls

- Walls were all reinforced with diagonal bracing.
- The floor beam was strengthened with corner bracing.
- A wall plate tied the wall and roof structure together.
- All connections were strengthened with metal straps or strong rope. The roof was securely connected to the wall.
- Mortice and tenon joints were used to connect timbers.

Roof frame

- Corner bracings were added.
- A cross-beam was added to strengthen the roof and to create a storage area.
- Corners were connected with strong ropes or metal straps.

Roof covering

- For a thatched roof, wire or strong ropes were used to connect the roofing to the ground with heavy rocks.
- For corrugated iron roofs, 26 to 29 gauge sheets were used, and the roof structure was secured with wood battens.

Training

The organisation produced a poster that illustrated key points on strengthening houses against cyclones and storms. The aim was to improve the understanding of






those who did not receive a house from the project.

One month after the project had been completed, eight additional families had built new houses following the project design using their own resources.

Logistics

The organisation purchased materials, on behalf of beneficiaries, from local suppliers. The suppliers delivered materials directly to the villages. Contingency material suppliers were also identified in case of a delivery failure.

The beneficiaries made and provided rope for the roof. Beneficiaries also contributed to the cost of the shelters by sourcing wood for the roof supports. The wood was commonly available, and could be found or purchased at low cost.

Construction Checklist	
<p>Storage & quality</p> 	<ul style="list-style-type: none"> • Are all the materials stored safely from storm, rain and flood and are secured to prevent theft? • Are the quality of materials good?
<p>Foundation</p> 	<ul style="list-style-type: none"> • Is the wood dry? • Has the wood been treated with oil? • Have you buried the footing to 75 cm? • Have you used broken rocks in the foundation? • Does the floor have corner bracings?
<p>Structure</p> 	<ul style="list-style-type: none"> • Are diagonal bracings used at columns? • Are diagonal corner bracings used at corners to connect the diagonal bracings? • Are all joints between the columns and beam made using timber joints and not nails? • Are connections between beams and columns fixed with nailed metal straps?
<p>Roof</p> 	<ul style="list-style-type: none"> • Are corner bracings used at all corners? • Are metal straps used to connect the roof truss to the beam? • Are all connections between members made with mortise and tenon joints? • Is the joint of the ridge and the truss diagonally reinforced with bracings? • Are all four corners of the roof beams braced with diagonal timbers?
<p>Upgrade items</p> 	<ul style="list-style-type: none"> • Are metal straps used for wooden connections? • Are ropes used for connections? • Is wood in contact with the ground treated with an oil and petrol mixture?

A.19 Nicaragua – 2007 – Hurricane

Case study: **Keywords:** Non-displaced, Construction materials, Core housing construction, Site planning, Training.

Country:

Nicaragua

Project location:

North Atlantic Autonomous Region

Disaster:

Hurricane Felix

Disaster date:

4th September 2007

Number of houses damaged destroyed:

7,895

Number of people displaced:

35,100

Project outputs:

150 core houses

50 community members trained in carpentry skills.

Occupancy rate on handover:

100 per cent

Shelter size:

30m²

Materials cost per shelter:

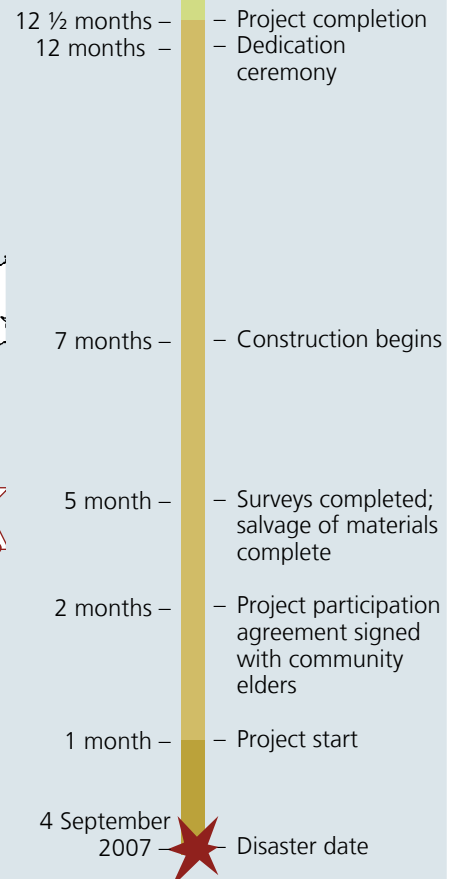
US\$ 1,400

Project cost per shelter:

US\$ 2,000



Project timeline



Project description

This project was implemented in the context of a poorly funded response and recovery operations for the 2007 hurricane in Nicaragua. The organisation chose to focus its limited budget on providing improved shelter conditions for nearly the entire population of one of the most affected villages. The project included physically re-planning the settlement, building 150 new core houses, and training community leaders and work crews.

Strengths and weaknesses

- ✓ The engineering design of shelter solution was of high quality.
- ✓ The reconstruction project enabled the settlement layout to be rationalised and improved.
- ✓ The carpentry skills training component provided livelihood opportunities.
- ✓ The shelter project addressed almost 100 per cent of shelter needs in the Auhya Pihni community.
- ✗ The project scale was limited (less than 2 per cent of the affected population) and did not address the needs of the majority of affected people.
- ✗ The project did not include improving sanitation facilities. Some families rehabilitated latrines in parallel to the shelter intervention but many remained substandard.
- ✗ By choosing to concentrate all of the support in

only one village, the village selection process became pressured.

- There was a strong pre-existing level of organisation in the affected community, facilitating communication.
- The project entailed the use of ethnic language interpreters, leader orientation techniques, knowledge-transfer and community training methodologies to avoid cultural and language barriers with the target population.
- Having a local church partner with insider knowledge of local power-brokers was crucial. The fact that the church was respected helped to legitimise the introduction of labour agreements between the implementing organisation and the beneficiaries.



Tarpaulins were provided as part of a response that had very limited funding both nationally and internationally.
Photo: Mario Flores

Before the hurricane

Auhya Pihni is a settlement located 55km north-west of Puerto Cabezas, comprising indigenous Miskito people. The settlement is within the autonomous RAAN region, and has its own tribal laws.

The project village is one of ten Miskito communities who possess approximately 150,000 hectares of land. Traditionally Miskito people live in large houses with their extended family. The size of the extended family has reduced over time, with the village community playing a similar role. Kinship in the community remains matrilineal.

Lands are communal, and a Council of Elders acts as a decision-making body. The person with the position of Justice within the council served as the chairman of community leaders. These leaders have the final say in decisions affecting the community.

Most of the inhabitants survived on unstable, sporadic sources of income, and many of the families were living in extreme poverty before Hurricane Felix struck.

The water table at the site is very close to the surface and the part of the settlement located close to the river is prone to flooding.

According to the 2005 population Census, 65 per cent of house-

holds did not have access to basic water and sewage disposal, while nearly half of households had no toilet and 7 per cent shared their latrines with other families.

After the hurricane

On 4th September 2007, Hurricane Felix, a category five storm, hit the north-east coast. Winds of 260 km/h caused widespread devastation. In the provincial capital city of Puerto Cabezas, the hurricane caused severe damage to houses and services, cutting off all communications. The hurricane caused over 160 deaths.

Nearly 8,000 houses were destroyed and smaller settlements such as Auhya Pihni were completely obliterated. The day after the hurricane the government declared a "national state of calamity".

Neither the government nor the international community were able to commit the funding to respond to the overwhelming shelter needs.

Some tarpaulins were provided as emergency shelter by relief agencies to enable families to stay in their houses and prevent further displacement. Many families combined the sheeting with reclaimed materials to make shelters.

Selection of beneficiaries

Surveys were conducted by a group of Nicaraguan NGOs to select a community. Meetings were also held with local authorities, influential church leaders and elders from the Miskito community.

The community of Auhya Pihni was chosen, and 150 families were selected as beneficiaries out of a total of 167 households.

Implementation

Following previous organisations' unfulfilled promises of assistance, the community were initially distrustful. However, once the first two model houses were built, trust improved.

To build the shelters, local labour was hired from the affected community to support skilled carpenters brought in from Puerto Cabezas and other towns.

A processing centre for timber was established within the community, and homeowners were paid to support the production and fabrication of construction elements, including posts, wood frames and rafters.

Through its external networks, the local church was able to provide power tools. Community-owned timber processing equipment was also made available.



Completed houses in the village.
Photo: Mario Flores

Workers involved in the project were trained in carpentry and home construction by the organisation. Some were trained in the production of wooden doors and windows, which included the use of woodworking machines.

To build the houses, the organisation established six construction teams, each led by a community leader.

Coordination

Due to lack of funds and the limited number of organisations operating, there was very little inter-agency coordination. Overall, local coordination with the church and local authorities was good.

Technical solutions

The house design followed a local design, using familiar materials: timber for most of the house components and corrugated galvanized sheeting for the roof.

The final design and covered area (30m²) was agreed with the community representatives through a process assisted by architects from another local organisation.

The design included three simple disaster risk mitigation features that were new to the community:

- elevating houses on stilts to reduce the risk of flooding
- cross-bracing supporting posts
- metal straps to reinforce connections of wooden elements
- a strengthened structural design
- use of twisted roofing nails to better secure roofing sheets.

The goal of these incremental changes was to build stronger structures with better tied down roofs.

Sanitation

Before the hurricane, most households either had or had previously used latrines. The organisation did not get involved in latrine construction, but another organisation was able to build latrines for 35 per cent of the households.

There was some disagreement between the two organisations about the low level of coverage, but budgetary constraints prevented further work.

Logistics

Approximately 10 per cent of the timber was salvaged from damaged houses. The quality of materials was approved by the homeowners and the project engineers to ensure that their use would not weaken the houses.

The community initially rejected the use of pine to build shelters, because they wanted a more durable housing solution.

The forest had long been a significant source of livelihoods for this community. Before the hurricane, a community organisation had been established with the support of an international organisation to manage the local forest resources. As a result, the forestry resources were well managed for the use of this project, minimising any negative environmental effects.

The organisation was able to purchase the timber at a discounted price from this community organisation who put the money into a community fund for community projects.

All timber came from within 10km of the village and was transported by river.

A.20 Pakistan – 2010 – Floods

Case Study: **Keywords:** Advocacy, Training, Guidelines, Coordination.

Country:

Pakistan

Disaster:

Floods

Disaster date:

July to September 2010

No. of houses damaged:

1.8 million houses damaged or destroyed

No. of people affected:

More than 20 million people

Project outputs:

Coordination established nationally and in 7 provinces



Project timeline



Project description

The organisation established national coordination across 7 provinces in response to large scale floods, with the purpose of addressing gaps and increasing the effectiveness of the humanitarian response. The organisation established a national coordination team that managed a wide range of issues through a system of Strategic Advisory Groups (SAGs) and Technical Working Groups (TWIGs). It also appointed different organisations as lead coordinators in the different provinces. District level coordination proved difficult and slow to establish, but lessons were learnt for the following 2011–2012 floods.

Strengths and weaknesses

- ✓ The lead coordinating agency shared responsibility for coordination with different organisations as focal points for different provinces.
- ✓ The lead organisation was able to establish a reasonably clear division of responsibilities between the coordination team members and its own operations.
- ✓ The coordination process resulted in detailed gap identification in the response in the south of Pakistan at village level.
- ✗ Coordination was slow to be established at district level in the 2010 floods. Lessons were learnt for the 2011 and 2012 floods.
- ✗ There were challenges in reaching consensus on line management responsibilities due to multiple lead organisations across provinces.
- Although local organisations, foundations, philanthropists, and private sector actors have an increasingly important role in preparedness and

response within Pakistan, they were largely outside of the cluster system.

- Effective coordination requires a physical presence at national, provincial and district levels. Although effective coordination must remain focused on output, certain aspects of coordination are process-focused. Jointly creating a sectoral strategy and shaping advocacy positions are two such examples.
- There are increasing obligations relating to the contingency planning process, as more efforts are put into preparedness and disaster risk reduction. Using clusters to conduct sector planning during 'peace time' may be good value for money.
- At national level, coordination focuses on ensuring a harmonised and adequate response, policy and resource mobilisation. At provincial or district level the focus is on issues of assistance delivery and partnership building. The practical value of coordination increased the closer it was conducted to the affected population.



The coordination team tracked commodities, both in pipeline and distributed as a core service. This allowed gaps to be identified and resources sought to fill unmet needs. Photo: Joseph Ashmore

Coordination and Clusters

Following a review of international responses to humanitarian emergencies in 2005, the cluster approach was proposed as a way of addressing gaps and ensuring responses were more effective.

By clarifying organisations' roles and responsibilities, the cluster approach helps ensure predictability and accountability, and creates a more structured, accountable and professional system.

See www.sheltercluster.org

Shelter Cluster in Pakistan

The Shelter Cluster in Pakistan coordinates shelter activities in response to disasters and specific conflicts. The Cluster comprises the government, lead organisations and all of the organisations engaged in shelter activities who wish to coordinate.

Before the 2010 floods, the Shelter Cluster had been activated in Pakistan after the 2005 South Asian earthquake, the 2007 cyclone, the 2008 earthquake in Baluchistan, and the complex emergency peaking in the 2009 IDP crisis.

Coordination challenges within Pakistan include multiple languages and the changing institutional roles and relationships within the humanitarian community and the government. Different types of disasters and conflicts all require different responses and different management of the responses.

The governance structures of Pakistan relating to disaster assistance have changed significantly since 2005. Two of the most important changes have been the creation of the National Disaster

Management Authority in 2006 and the implementation of the Decentralisation Act of 2010, which devolved significant, although not always clearly defined, authority to the provinces.

2010 floods

Floods in 2010 affected 20 million people and destroyed 1.7 million houses throughout the country (see *A.22 shelter Projects 2010*). They struck all 7 provinces of Pakistan with 29 districts being classed as severely affected.

Distances were large, and with some locations taking days to travel to. The scale was such that no one organisation could effectively coordinate on its own, and it was necessary to set up coordination mechanisms at both the national and provincial level.

National Coordination

The cluster lead organisation agreed to represent the Shelter Cluster at the national level. It established a team of nine people that worked relatively separate from the operations of the hosting organisation. This independence allowed the team members to represent the "cluster" and not their host organisation.

The team consisted of a cluster coordinator, a technical advisor, an information manager (with two assistants), a Geographical Information Systems team (two people) and an administrator. As the team members needed to visit field and hub locations regularly, it relied heavily on the logistics support of the host organisation and other cluster members.

The team held regular meetings in Islamabad. Initially these were

twice per week, but decreased in frequency as the emergency progressed into the recovery phase.

SAG and TWIGs

Multiple groups had to be established to coordinate the response, and most effectively use the time of the different parties involved, including donors, government officials, NGO and UN partners, and others.

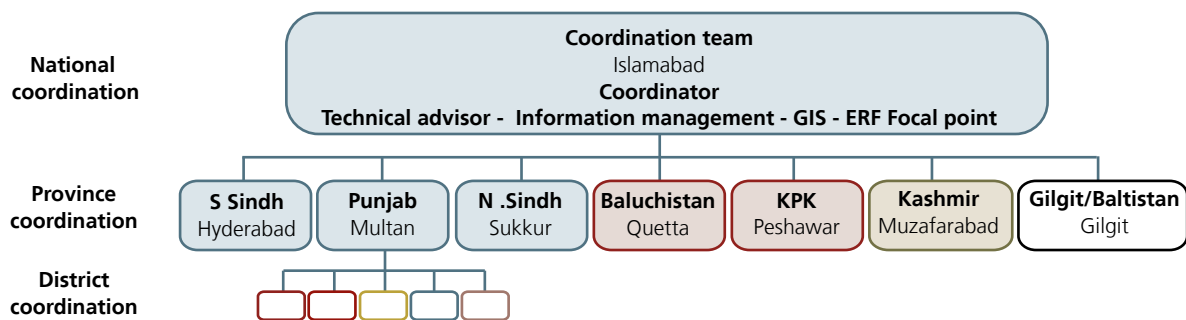
A Strategic Advisory Group (SAG) was formed to discuss and propose rapid agreement on national strategic issues such as advocacy positions that the cluster should take and which projects should be promoted for funding. To ensure accountability, SAG members were elected by all cluster members with agreed numbers representing different types of organisations and donors. The SAG's recommendations were submitted to plenary meetings and disseminated by email for final agreement.

Technical Working Groups (TWIGs) were formed to deal with specific technical issues, such as the composition of a winterisation kit or common specifications.

Provincial coordination

The lead organisation agreed to coordinate nationally and in Punjab and Sindh provinces. Three other organisations agreed to coordinate the other four provinces.

Sharing coordination responsibilities with other organisations that had experience and competencies in the shelter sector proved to be an effective way to ensure that coordination was rapidly extended throughout all of the flood-affected areas.



Functional organisation chart for the coordination team in November 2010. Each colour represents a different organisation. District level coordination was just starting and district focal points were being identified in several of the provinces. Each role might require several staff, either full time or part time. For example, at national level, the information management role was fulfilled by an information manager and two assistants.

A disadvantage of having different organisations taking the lead at provincial level was that every organisation had a different interpretation of the role of a coordinating agency. This led to some sticking points between national and provincial coordination.

Some of these organisations were new to the role of cluster coordination, so the national team had to spend some time clarifying what the cluster lead role entailed.

Common reporting formats and digital filing structures were agreed on in the first weeks of the response but this was not sustained and different versions were later used in different provinces. This made data consolidation more difficult.

A national workshop was held for coordinators and information managers a few months into the response to discuss and share experiences between provinces, and to synchronise systems.

Provincial coordination teams varied in size, from a dedicated coordinator and two information managers to a single coordinator who had other operational responsibilities.

District focal points

It quickly became apparent that coordination would be required outside provincial capitals and hubs. Many parties recognized that the practical value of coordination increased the closer it occurred to the affected populations.

District and sub-district coordination was essential for organisations entering an area for the first time to avoid duplication and to

ensure that support was reaching the most vulnerable rather than the most vocal.

The nearer coordination took place to the affected people, the challenges faced become less focused on policy and resource mobilisation issues and more focused on issues of delivery of assistance and partnership building. Practical issues included working with local government officials to facilitate access to communities, mitigating potential conflicts in resource-scarce areas and identifying the most vulnerable people affected by the disaster.

The setting-up of district focal points was a slow process requiring specific resources and funding. For each district, a capable partner had to be identified, and memorandums of understanding needed to be signed to clarify roles, responsibilities and cost recovery issues.

2011 and 2012 floods

In the 2011 and 2012 flood responses national and international non-governmental organisations were responsible for coordination at the district level. The role of the district focal points was to monitor and support the shelter cluster members in the implementation of their programmes, liaise with local government and keep them aware of relevant issues, provide technical and trouble-shooting advice and maintain an overview of who was doing what, and where they were working. This allowed a close and thorough monitoring of the response and resulted in a more informed coordination at national and district level.

During the recovery phase, three agencies acted as district focal points and each covered two districts. The same district focal points were transferred to Northern Sindh after the 2012 flood. Their experience and knowledge ensured the rapid establishment of coordination in the newly affected areas.

Non-emergency activities

The importance of preparedness was emphasised by the government, humanitarian organisations and donors alike. Pakistan's recurrent natural disasters and ongoing complex emergency make preparedness crucial. Consequently, cluster leadership obligations expanded beyond response to include contingency planning.

The shelter cluster prepared contingency plans for 2011 and 2012 in coordination with cluster members, other clusters, and various levels of government. Stock lists were compiled to show stock levels before the monsoon season. A summary of capacity in terms of human resources was made, with lists of trainers and experts who could support emergency distributions and assessments.

After the 2012 flood, the government of Pakistan did not request international humanitarian support. Instead it requested for relief stocks from the existing contingency plans developed by the clusters to be distributed to complement its own response.

A.21 Pakistan – 2010 – Floods

Case Study: **Keywords:** Non-displaced, Tools, Core housing construction, Cash, Infrastructure, Training.

Country:

Pakistan

Disaster:

2010 floods

Disaster date:

July to August 2010

Number of houses damaged / destroyed:

1,744,471 households damaged in total (876,249 households damaged in Sindh province)

Project outputs:

5,350 shelters constructed
61 construction trainings
7,638 households cash-for-work for shelter construction

Occupancy rate on handover:

92 per cent

Shelter size:

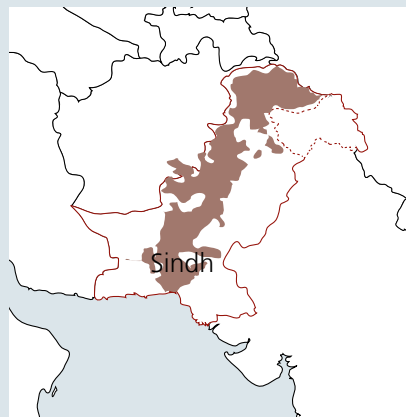
Pilot shelter: 20m²

Materials cost per shelter:

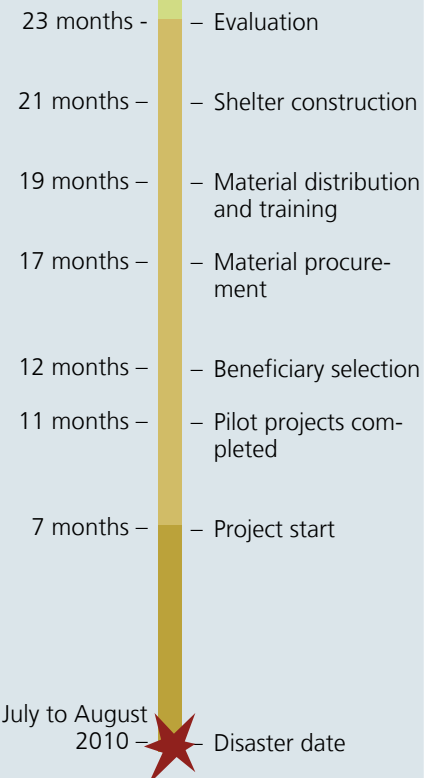
US\$ 710 for the shelter materials and labour

Project cost per shelter:

US\$ 983 for the shelter component of the project



Project timeline



Project description

The project provided shelter, food security and disaster resilience assistance to flood-affected communities in Sindh province. 5,350 families were provided with materials, labour and trainings to enable households to rebuild their shelters. The project design was designed on community-based Disaster Risk Reduction (DRR) principles, but the constraints of a short project timescale and high target numbers made this challenging.

Strengths and weaknesses

- ✓ Investment of time in a pilot project showed what would work at scale.
- ✓ The project aimed to make a lasting impact despite short term funding by incorporating permaculture, DRR principles and food security.
- ✓ Use of locally available materials and skills as well as a strong technical training component created a shelter design that could be replicated by other families.
- ✓ In depth vulnerability assessment helped improve targeting.
- ✗ Large-scale direct procurement was complicated by scarcity due to high post-flooding demand for materials.
- ✗ Some community based DRR activities were hard to complete due to tight timeframes and the need to construct quickly and at scale.
- ✗ The project was slow to start due to the extensive

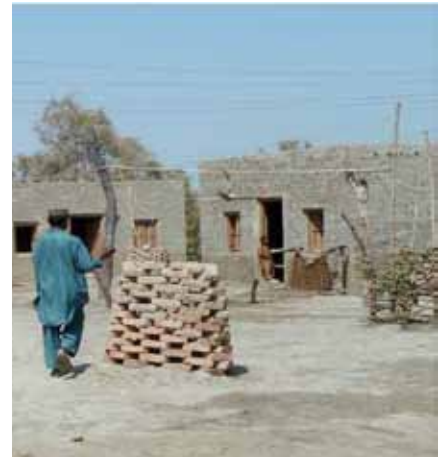
beneficiary selection process and piloting leaving families with a delay before shelter support was available.

- ✗ The high cost of the shelter in comparison to local houses reduced the likelihood of replication.
- ✗ Relatively high cost of beneficiary contribution may affect timely financial recovery.
- This project was part of a multi-sectoral approach that included WASH, shelter and food security programmes, implemented in the same target areas.
- Highly sensitive security situation in target areas lead to a need for self-help and a 'do-no-harm' approach.
- The project led to many discussions in Pakistan on the benefits of introducing horticulture and permaculture-inspired principles into recovery programmes.
- Flooding in the same areas in 2012 meant that the DRR elements of the project were tested and can be evaluated.



The project was designed on community-based disaster risk reduction and permaculture principles. However it found it difficult to maintain these principles and effect the social change required given the scale and donor time frames.

Photo: ACTED



After the floods

(See A.22, *Shelter Projects 2010 for background*)

The 2010 floods reached northern areas of Sindh Province in August 2010. Comparatively few humanitarian actors were in a position to respond to the scale of the disaster.

According to an assessment in the target area, up to 60 per cent of households had lost their shelter entirely, while nearly all rice and vegetable crops were damaged or destroyed. The crop damage was a particular problem in northern Sindh since agricultural livelihoods provided the primary source of income.

Access to shelter and livelihoods were reported as a priority need under the Relief Response Plan launched on 1st March 2011 by the Government of Pakistan.

Where possible, shelters were to be constructed using locally available building materials. In addition to the provision of shelter materials, organisations were encouraged to promote 'appropriate technical assistance and support revitalisation of the supply chain of key materials'. Using social mobilisation and mass communications strategies, beneficiaries and their communities were to be mobilised to directly participate in the construction process, either through material or labour contributions.

Selection of beneficiaries

Union Councils are the local administrative unit for humanitarian coordination in Pakistan. The Union Councils to be supported were selected on the basis of flood damage and a gap analysis of responses planned by other actors.

A 15 minute questionnaire was completed for each household in each Union Council. Over 24,000 families were interviewed to identify the most vulnerable households. This survey and data analysis took four months. Finally 5,350 families were selected, meeting the following criteria:

- Households headed by vulnerable people such as elderly, female or disabled people.
- Families with a significant proportion of children under five years of age, elderly, pregnant and/or lactating mothers and malnourished children.
- Basic low socio-economic characteristics, including a lack of income, assets, and breadwinners in the family, and/or chronic debt.

Local community-based organisations were identified, or established. They were responsible for verifying the accuracy of information provided and ensuring that no vulnerable families were excluded.

Houses were rebuilt in the same locations as before the floods, either on their own land or with the agreement of their landlord.

Implementation

The shelter components of this project comprised four key activities:

- piloting of various shelter designs to enable the identification and replication of innovative best practices
- provision of shelter materials and toolkits
- provision of training on shelter construction incorporating DRR principles
- shelter construction using cash-for-work.

Throughout the project, the organisation conducted extensive community mobilisation activities, including hazard mapping and village planning.

Pilot phase

In the initial stages of the project, the organisation purchased compressed earth block machines, trained community members in their use, and built several pilot shelters.

However the community and the organisation's engineers expressed the following concerns about the use of compressed earth blocks:

- Production was slow and labour intensive, especially during extreme summer temperatures.
- The local soil type was not ideal for creating the blocks and a lot of training was required to get the right mix of clay and sand.

- There was a lack of acceptance of mud houses, as in the local language mud houses are described as “*katcha*” (bad) houses and brick concrete described as “*pucka*” (good) houses.
- It was very difficult to transport the blocks for more than a few hundred meters as they were easily broken in transit.

Given these obstacles and the size of the project, the organisation decided not to continue with compressed earth blocks. Instead they provided fired bricks and cement for the lower portions of the walls. The beneficiaries contributed sun-dried or fired bricks from the windowsill level up to the roof. In many cases people were able to find or purchase fired bricks for their contribution.

The one-room shelter design went through several adjustments based on the feedback from the organisation’s engineers and the community. These included the location of the door, the number of windows, the type of ventilator, the number and spacing of columns, the type of construction material, and the procurement method for bricks.



Compressed mud blocks were abandoned after the pilot stage due to a lack of community acceptance and slow production speed. Photo: ACTED

Implementation

The project was run as two projects, each funded by separate international donors. Implementation varied between the projects, though in both cases beneficiaries provided half of the unskilled labour. Skilled masons were provided by the organisation.

On-site training was given to the masons, focusing on shelter design and quality control of brickwork and foundations.

Coordination

Coordination between other humanitarian actors working in the area and the local authorities, including the provincial disaster management authority, enabled the organisation to share lessons learnt from the innovative techniques and approaches piloted through this project. Land rights issues were addressed through working with other shelter partners, facilitating constructive engagement with landlords.

DRR / permaculture

Northern Sindh is highly vulnerable to future flooding, particularly as the 2010 floods damaged drainage and floods defences. The inclusion of DRR principles in shelter designs and mobilisation activities was a strong focus of the project.

Improved disaster - resilient construction techniques included raising platforms for shelter construction, and improving roof drainage.

DRR trainings were provided to target communities as a whole, not just direct beneficiaries. Locations for construction were agreed following hazard mapping by the community. Cash for work projects were conducted to repair embankments and some flood defences.

The initial concept was to combine tree planting, kitchen gardening and permaculture principles to capture waste water and improve the village environment and food security. The extreme summer temperatures and saline soil in this part of Sindh, variable

soil conditions, and the required scale and speed of the project made this part of the project challenging.

Despite this, some villages greatly appreciated the trees, and kitchen gardens were well tended. The organisation was able to use the lessons learned from the disaster risk reduction components in its response to the 2011 floods in southern Sindh.

Materials list

Materials	Quantity
Shelter toolkit	
Wheel barrow	2
Kassi (Trowel)	5
Spade	5
Sall (plummet)	1
Steel pan	5
Block making frame	4
Mask	4
Cotton gloves	4 pairs
Payodin (injury cream)	1
Band aid (rolls)	2
Water level	1
Iodine balm	1
Shelter construction materials	
Fired bricks (Size 8.5"x4."x3")	3,228
Mud blocks (Size 6"x8"x12")	1,115
Cement	7 bags
Sand (wastage not included)	85 ft ³
Stone crush	10 ft ³
Brick ballast	46 ft ³
Mud	218 ft ³
Bhoosa for mixing mud plaster and roof	80 Kg
Steel girder (13.5'x 3.5"x7.5")	27 ft.
Bamboo (19.5' length average dia 2.5")	254 ft.
woven mats (size 19.5x13.5)	263 ft ²
raw straw	108 ft ³
Polythene sheet	263 ft ²
Galvenised iron spout 2' length	1
Wooden door 3'x6' with frame 3" x 3"	1
Wooden window (size 2' x 3', frame 3"x3")	1
Wooden door lintel (3"x4.5"x4.5')	2
wooden ventilator lintel	2
Wooden window lintel (3"x4.5"x4.5')	4
Bitumen for damp proof course	1 Kg

A.22 Pakistan – 2011 – Floods

Case Study: **Keywords:** Non-displaced / returns, Core housing construction, Cash, Training, Guidelines and training materials

Country:

Pakistan

Project location:

920 villages in south Sindh

Disaster:

2011 floods and intensive rains

Disaster date:

September and October 2011

Number of houses damaged / destroyed:

750,000–950,000

Project outputs:

4,624 shelters at end of 2012 - ongoing

55,914 villagers trained

Occupancy rate on handover:

100 per cent

Shelter size:

Recommended area 21m²

Materials cost per shelter:

US\$ 300

Project cost per shelter:

US\$ 514



Project timeline



Project description

The organisation worked with 27 implementing partners to deliver shelter at scale. The project provided cash to households to build their own shelters. It aimed to increase the resilience of communities by increasing the quality of technical input, incorporating more disaster risk reduction (DRR) components, monitoring to ensure compliance, and supporting the construction of safer shelters to catalyse self-recovery. This was achieved through knowledge and cash transfers to enable households to make choices based on their needs and priorities.

Strengths and weaknesses

- ✓ The project promoted self-reconstruction and strong beneficiary participation.
- ✓ Distributing cash to beneficiaries stimulated the local economies. Households managed the funds that they received in instalments.
- ✓ Technical trainings for partners, interested village members and beneficiaries focused on safer construction practices.
- ✓ Vernacular shelter typologies were recommended and promoted. These were affordable and maintainable by low income families.
- ✓ Created awareness of flood resistance principles using traditional or simple technologies such as lime.
- ✗ Households had to divide their time between daily tasks and construction. Implementation depended on crop cycles, leading to delays for donor deadlines.
- ✗ Material quality was variable because it was

dependent on local markets.

- ✗ The construction process output was directly proportional to the household input so the quality of reconstruction was not uniform across the project.
- ✗ Not all beneficiaries were interested in complying with the recommendations provided, leading to variations in shelter quality.
 - Before the project the majority of flood affected households had a limited understanding of why their previous shelters failed.
 - The vernacular construction typologies differed widely, even within a single village.
 - Reintroduction of lime in the traditional construction process was perceived to be an innovation.
 - Beneficiaries who witnessed the 2011 shelters with improved DRR techniques surviving the 2012 rains were very motivated to learn from the technical trainings, and to implement the recommendations.



Women plastering their one room shelters. The project provided cash to build shelters and training on safer construction with incremental improvements such as stronger plinths and footings to walls. Households chose their own shelter design.

Photos: IOM ORS

Before the floods

Many people in Pakistan could be classified as vulnerable before the floods. 27 per cent of Pakistan's population lived in severe poverty and 23 per cent lived on less than US\$ 1.25 per day. The flooded region is one of the poorest areas in Pakistan.

In 2010 there had been major flooding and the organisation had supported households to build over 38,000 shelters (see [A.24 Shelter Projects 2010](#)). Evaluations of the response indicated that extra action on trainings would enhance the impact and longevity of disaster risk reduction interventions.

After the floods

Monsoon rain in 2011 led to the collapse of many houses due to the weight of waterlogged roofs, or failed due to foundations being compromised by rising water. An estimated 1.2 million people were displaced throughout Sindh and Balochistan provinces, without shelter, access to safe drinking water, health services or food.

It was estimated that 35 per cent of the communities affected in 2011 were also affected by the 2010 floods. This indicates that more than a million people affected by the 2011 floods had barely recovered, or were still trying to recover from the 2010 flooding.

Beneficiary selection

Working through implementing partners and focusing on the most severely affected districts, assessments were made to identify villages where more than 20 per cent of the houses were destroyed

and the social coping mechanisms were stretched to the limit.

Villages to intervene in were selected in phases:

- Phase I was based on the list of most affected union councils (administrative districts).
- Phase II was based on the list of union councils with the most unmet needs.

Village committees were set up to identify the most vulnerable households among those whose shelters had been completely destroyed. Vulnerable households included:

- Female-headed households
- Households with no adult male
- Households with an elderly member (over 60 years old)
- Households with a disabled or chronically ill member
- Households with extremely low income and no livestock
- Households with a dependency rate above 60 per cent.

Implementation

The organisation worked with 27 implementing partners. Each implementing partner agreed to build 500 one-room shelters or support 23 villages. Each one had an average of four field staff members, two social mobilisers and two technical assistants. The organisation also provided its own project staff to support the implementing partners, assisting them in the project and on solving all questions and challenges that arose.

Village committees, in coordination with the beneficiaries, appointed a village focal person

who was responsible for receiving and distributing cash to a group of up to 25 households. The organisation transferred the first tranche of funds as an advance for the beneficiaries to construct the base of the house. Once all the members of group had finished their plinths the organisation transferred the second tranche for the construction of the walls.

This process of advance and milestone construction was completed with the third tranche payment once the roofs were finished. Joint construction provided positive peer pressure and encouraged collaboration.

During the entire construction process, implementing partners and project staff provided practical technical trainings in the villages. This aimed to ensure that safe practices and cost-effective disaster risk reduction techniques were incorporated at all stages of the construction.

Monitoring

To monitor the distributed funds and construction progress the project team scrutinised a minimum five per cent of the total shelters committed. Households were chosen to be monitored at random from the project beneficiary database.

The aim was to ensure that the monitoring process was evenly distributed amongst all groups. Monitoring plans were devised in such a way that they guaranteed a visit to each village. The process continued throughout the project, starting from verification of beneficiary



A homeowner using lime to prepare stabilised adobe bricks for the walls of his house.
Photo: IOM ORS



Some homeowners decorated their houses. This was encouraged as a way of building pride in traditional architecture.
Photo: IOM ORS

selection, to construction oversight and cash distribution.

Coordination

The project activities and implementation locations were coordinated with the national interagency coordinating body (see the case study on coordination in Pakistan, A.21). This reduced duplications and maximised coverage in line with agreed priorities. The coordination team also supported organisations to liaise with the authorities and donors, creating a platform for information collection and sharing amongst all shelter actors.

Regular progress reports were publicly shared. Close coordination was maintained with the disaster management authorities at the district, provincial and national levels to ensure a coherent approach towards shelter recovery.

Accountability

A complaints telephone hotline was established to encourage transparency and to provide beneficiaries with a direct link to a complaints and feedback process. It also provided beneficiaries, implementing partners and project staff a channel to report irregularities and challenges. Trained staff, fluent in local languages, responded to queries and recorded complaints in a database. At the end of every week, the complaints were forwarded to the project manager and followed-up by the field teams.

Shelter staff in the field informed all beneficiaries and their implementing partners about the complaints referral mechanism. A

free telephone hotline was set up to record any complaints. Colour posters and business cards with key messages and phone numbers were distributed. Awareness raising sessions were provided to all beneficiaries, implementing partner representatives and focal points before the first payment.

Training

In order to identify the most cost-effective local construction methods, a build-back-better survey on vernacular construction was conducted in the six priority districts with support from a local technical implementing partner (see case study A.23).

The survey was designed to record existing conditions in the flood-affected districts with a focus on local self-built techniques. It assessed the strengths and weaknesses of existent vernacular construction practices. The main aim was to record the different types of structures that survived, the techniques and practices that largely withstood the flood waters and the ones that led to house collapse.

Once the best construction methods were identified and improved they were compiled into a construction manual used for practical and theoretical capacity building trainings for affected households. The programme also provided a Training of Trainers course which had theoretical and practical sessions. It was based on the construction manual and educated all technical and field staff working with the communities.

A core component of the project was to train flood affected households on how to build back safer using disaster risk reduction techniques. The objective of the trainings was to build the resilience of affected populations enabling them to cope with future disasters on their own.

Each implementing partner conducted four trainings per village during the construction process. Affected people could also request additional trainings. By December 2012 the programme had delivered 2,071 trainings that were attended by over 55,900 villagers.

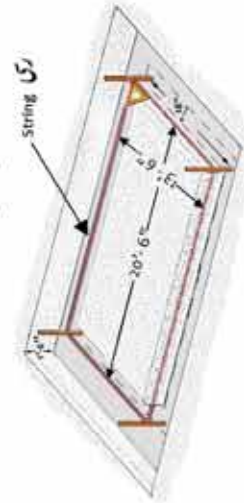
In September 2012, there were two weeks of intense rain. At the time, all beneficiaries and implementing partners were very worried that all the constructions were going to be washed away. However, plinths and platforms were minimally damaged and people could repair them, and continue construction within a short time.

Although not yet quantified, there are anecdotal examples of villages where families who did not receive the cash grants copied the construction techniques because they had free access to the village trainings.

TYPE B-4 with KARAVAN CHAURA ROOF REED/LOH-KHAT MODULE CONSTRUCTION GUIDELINES



ORIENTATION
سورج کاربٹ



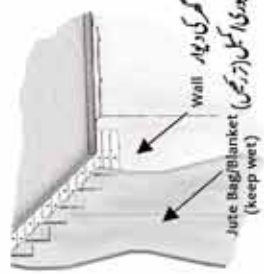
SHELTER LAYOUT
ٹائپے کا لائوت

Slake lime in water for one week

چونے کو ایک ہفتے تک پانی میں



LIME PIT
چونا تیار کرنے کا گڑھا



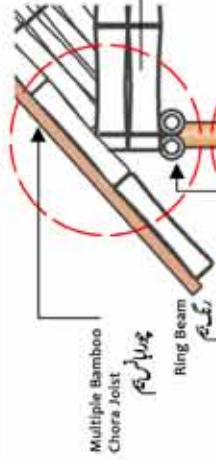
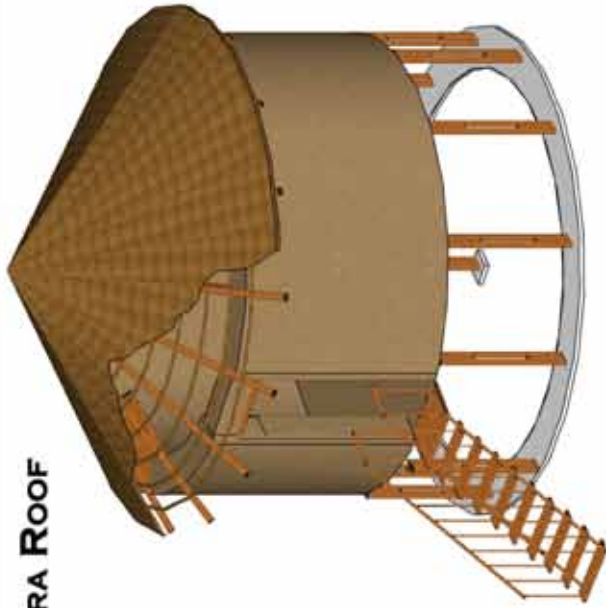
LIME CURING
(one week)
چونے کا استعمال

LIME

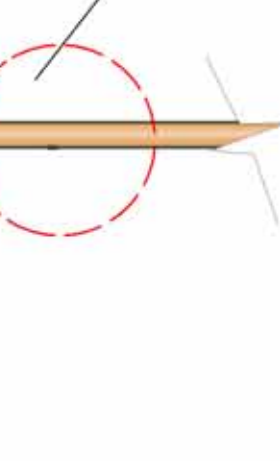
- Use Lime with lumps.
- Soak pit with water for 1 day.
- Fill pit with water and pour lime.
- Lime should be slaked for min. 1 week before use.
- Lime finish to be cured for 1 week.

چونا

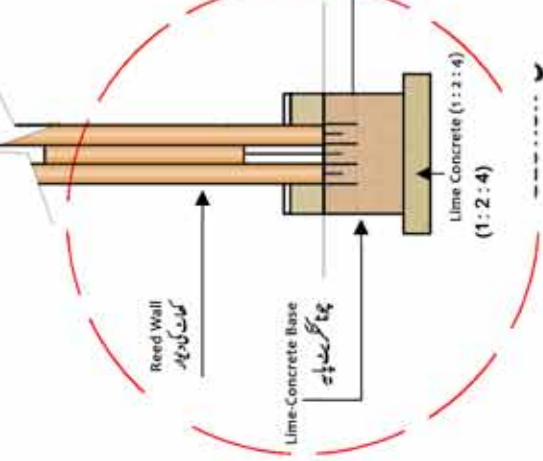
- چوڑی چونے کا استعمال کریں۔
- گڑھے کو ایک دن تک پانی سے بھرا رکھیں۔
- دوسرے دن گڑھے کو پانی سے بھر دیں اور لیمے ڈالیں۔
- چوڑے لیمے کو ہلکا کر دیں۔
- ہفتہ بعد پورے چونے کو ایک ہفتے تک چھڑائی کریں۔



Multiple Bamboo Chora Joist
چونے کی لکڑی



Reed Wall
گھٹ کی دیوار



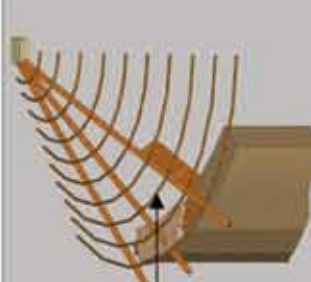
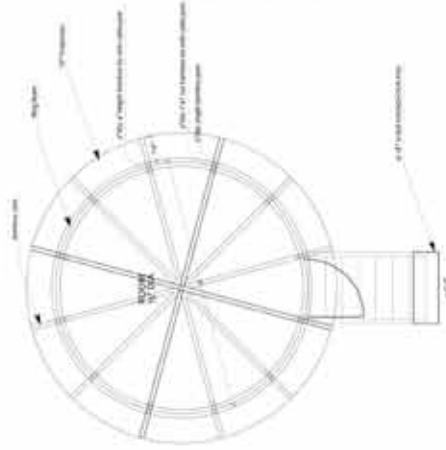
مٹی / بانس

- 20% - 40% مٹی کا استعمال کریں۔
- مٹی کو ایک ہفتے تک چھڑائی کریں اور پانی سے بھرا رکھیں۔
- دیوار بناتے وقت مٹی کی موٹائی 18" سے کم نہ کریں۔
- لیمے اور بانس کو مٹی کی موٹائی 20cm (8") سے کم نہ کریں۔
- لیمے اور بانس کو مٹی کی موٹائی 20cm (8") سے کم نہ کریں۔
- لیمے اور بانس کو مٹی کی موٹائی 20cm (8") سے کم نہ کریں۔
- لیمے اور بانس کو مٹی کی موٹائی 20cm (8") سے کم نہ کریں۔

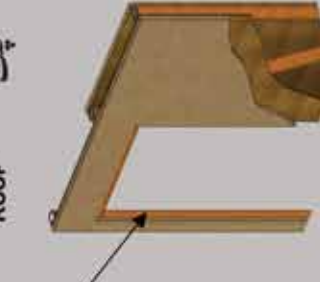
ADOBE / MUD - BAMBOO

- Use soil with 20% - 40% clay using bottle test.
- Soak soil for 1 week and mix thoroughly.
- Begin constructing from the corners. Thickness of the wall should not be less than 18".
- Use mature, well cured bamboo (3 yrs +).
- Do not use bamboo poles with vertical cracks.
- Make sure bamboo ends are protected by lime cream bio-degradable special masala.

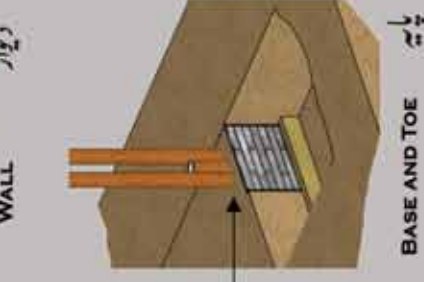
FLOOR PLAN



چھت
ROOF



ریمو
WALL



پائے
BASE AND TOE

MIXES

- Plain Lime Concrete 1:2:4 (Lime : Sand : Aggregate)
- Plaster 1:2:3 (Lime : Sand : Soil)
- Karavan Roof Finish 1:2:4 (Lime : Sand : Brickdust)
- Non-accessible Roof Finish 1:2:3 (Lime : Sand : Soil)
- Mud Mortar 1:6 (Lime-Mud mixed with straw)

A.23 Pakistan – 2011 – Floods

Case Study: **Keywords:** Non-displaced, Core housing construction, Housing repair and retrofitting, Training, Guidelines and training materials, Advocacy.

Country:

Pakistan

Project location:

Sindh Province

Disaster:

Floods

Disaster date:

2011 to 2012

Number of houses damaged / destroyed:

2011: 750,000–950,000

2012: 275,000

Project outputs:

887 shelters,

Training attended by 55,914

villagers, 60 artisans and 160

implementing staff

Changes to national

reconstruction policy

Occupancy rate on handover:

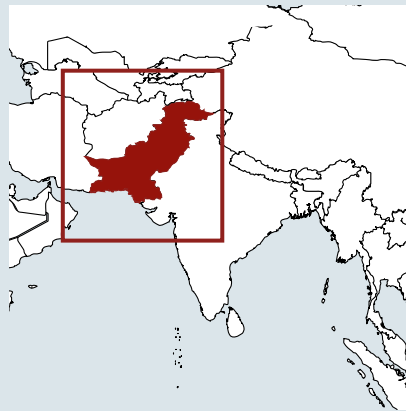
100 per cent

Shelter size:

16.2m², 13.8m², 20.88m²

Project cost per shelter:

This was primarily a training, assessment and advocacy project



Project timeline



Project description

The organisation provided research, training, assessment, design, technical assistance and construction monitoring and mentoring support to 7,500 households (to an additional 17,500 later) following the 2011 floods. Based on the organisation’s experience in disaster-affected areas since the 2005 earthquake, the project focused on developing improved vernacular construction through the use of low-cost sustainable building materials and training. The organisation provided technical guidance based on its programme “Build Back Safer with Vernacular Methodologies”, leading to stronger and safer structures that have withstood hazards.

Strengths and weaknesses

- ✓ The organisation was able to shift national shelter policy by rapidly implementing pilot projects with viable project models.
- ✓ The focus was on improved low-cost construction using traditional construction materials and methods, fostering pride in familiar materials such as mud.
- ✓ Involvement of student volunteers in various stages of construction and monitoring developed a spirit of giving and of unity.
- ✓ Training in safe eco-building techniques was provided to NGO personnel, social mobilisers, architects, engineers, students and master artisans.
- ✗ Lack of testing of structural elements due to lack of specific funding for the purpose.
- ✗ Households were unable to enlarge constructions

due to extreme poverty levels and lack of access to microcredits.

- ✗ Lack of funds to promote trained builders into building entrepreneurs or technical advisors for large-scale self-sustaining shelter programme.
- ✗ Failure to promote bamboo farming on a large scale.
- ✗ Challenges in convincing a large number of other organisations of the efficacy of the project methodology.
- Further work is required to improve quality and reach of low-cost technical support.
- Disaster Risk Reduction compliant community structures needed to be built in large numbers to provide safety of life, water, food, livestock, and livestock feed etc.



Disaster Risk Reduction components included the use of lime, reinforced plinths and strong accessible roofs.
Photo: Sohail Z. Lari, Heritage Foundation



The project was supported by student volunteers. One of the project aims was to promote traditional construction.
Photo: Mariyam Nizam, Heritage Foundation

Before the disaster

The rural communities in Lower Sindh province suffered from high levels of illiteracy, lack of access to primary healthcare, and were disadvantaged and marginalised. Most people worked in fields as tenants for low wages. There were limited other livelihood opportunities.

There are major variations in construction technology, materials, climate and hazards across Pakistan, and even between adjacent villages.

Following the 2010 floods, the organisation provided assistance to over 400 households. Following the 2011 floods, it built on these projects to extend their impact.

After the floods

Following the floods of 2010 and 2011, the affected communities were in a much worse state. After two successive years of floods, they had lost all their reserves, and there were some signs of aid dependency among affected households.

Selection of beneficiaries

Initially villages were chosen on the basis of damage and of existing relationships by the organisation with major landowners and authorities. Later in the project, choice of location was informed by a detailed housing damage survey.

Depending upon the project location, the organisation worked from lists provided by the Provincial Government, on its own assessment data or from lists of priority needs provided by its donor organisation.

Most people did not wish to move from their place of origin and/

or did not have access to any other land. As a result, shelters were mainly rebuilt on old plots.

Implementation

The organisation began its 2011 response by conducting a survey of housing typologies and damage.

During the assessment phase, the organisation divided its teams into two groups, a survey group and a construction group, each with 12 student volunteers. The survey team was led by an experienced architect, the construction team was led by the field coordinator. Teams worked in rotations of three weeks in the field after which the data was compiled and analysed in the head office by an experienced technical team.

During the project, more than 80 volunteer students were involved. Students were mainly from architectural colleges in their third or fourth year of study. Social sciences students were also involved in some parts of the project. The organisation also engaged professional architects, horticulturists, artists, textile designers and product developers for different project stages.

The organisation normally had up to four people on site, with support from its head office.

Survey

The organisation assessed vernacular architecture, surveying 170 homes in 35 *tehsils* (sub-districts) in eight priority districts.

The results were used to develop a database of vernacular construction typologies in the province of Sindh. This database was later used

to develop the eight shelter typologies which are being constructed in internationally-funded projects (see A.22)

The damage to the different types of houses was recorded and used to analyse the reasons for structural failures. These were used to help communities understand the technical failings of their homes and how to build back safer with designs developed by eminent architects and engineers associated with the organisation.

Many mud walls that had been partially damaged were rehabilitated after an engineering review. The rehabilitation included repairs on walls, bases and plasters, along with the use of accessible roofs using bamboo.

Demonstration shelters were constructed in some affected villages.

Construction

The initial projects responding to the 2011 floods focussed on households rehabilitating the walls of their shelters, and the organisation supporting in the retrofitting of new strong roofs. In the pilot project, complete shelters were built for people with disabilities and for female-headed households. In these initial projects, no money was directly given to the householders.

In two locations, the organisation established workshops to make bamboo joists. In other locations, where different construction methods were used, fabrication of bamboo roofs was done by local artisans trained by the organisation.

After a trial phase, the organisation signed an agreement with an international agency to provide technical support to other organisations who were collectively aiming to build 22,750 shelters.

Monitoring construction was challenging due to lack of internet and communication, on-site difficulties, harsh climate and long distances.

With the increase in scale it was difficult to check all stages of construction. Each area of work also had its own set of problems that had to be dealt with differently. To resolve these challenges, the organisation worked out a system of forms, and a strict set of rules for organisations to control construction and material quality. This was overseen by visits from its monitoring and mentoring field teams.

As it scaled up, the organisation had to increase the number of architects working on-site.

Training

The training programme consisted of eight shelter typology modules for Disaster Risk Reduced construction. The trainings were adapted to the different building methods in each location.

Training of trainers sessions for implementing partners were accompanied by mentoring during the construction phases by the organisation's technical teams.

Members from each household attended trainings, by the end of which they were able to construct shelters themselves.

The organisation trained 60 craftsmen in the following construction skills: layout, excavations, masonry, bamboo fabrication, mud-brick making, layered mud construction, plastering and finishing and the use of lime.

DRR components

The project had a very strong focus on improving resilience of communities. As there was repeated heavy rain and flooding in Sindh, shelter performance was monitored. All of the improved structures had withstood the flooding and rains.

The methodology became locally known as 'katcha kot' or "unfired clay fortress."

Technical solutions

The assessment made differing conclusions for different types of houses. These became key training messages:

- Shelters should be constructed in a hazard-free location wherever possible.
- Houses should be orientated north-south to reduce heat gain. Openings on opposite walls improves air circulation.
- Houses should have a strong base to protect the walls. Lime can stabilise mud walls, plasters and renders. Renders need to

be well cured after application.

- Use salinity-free soil and clean water for stronger construction.
- Use bamboo reinforced lime concrete beams and bamboo lintels above openings.
- Encourage roof projections to improve drainage and to protect top of mud walls.
- Use lighter but stronger materials for roof construction, such as bamboo joists.
- Maintain a slope on floors and roofs to drain water.

Project impacts

The project had significant impacts on the overall national response. By rapidly mobilising skilled volunteers to conduct technical assessments, the organisation was able to produce accurate and usable information as well as proof of concept pilot projects.

The method was rapidly adopted as a key component of the national "Pakistan Initial Floods Response Plan" and in grant applications to donors. Thus, a relatively small but experienced technical organisation was able to have a significant impact beyond the scale of its own projects.

Many beneficiaries spent time to decorate and beautify their new homes, showing pride and giving each house an individual character.

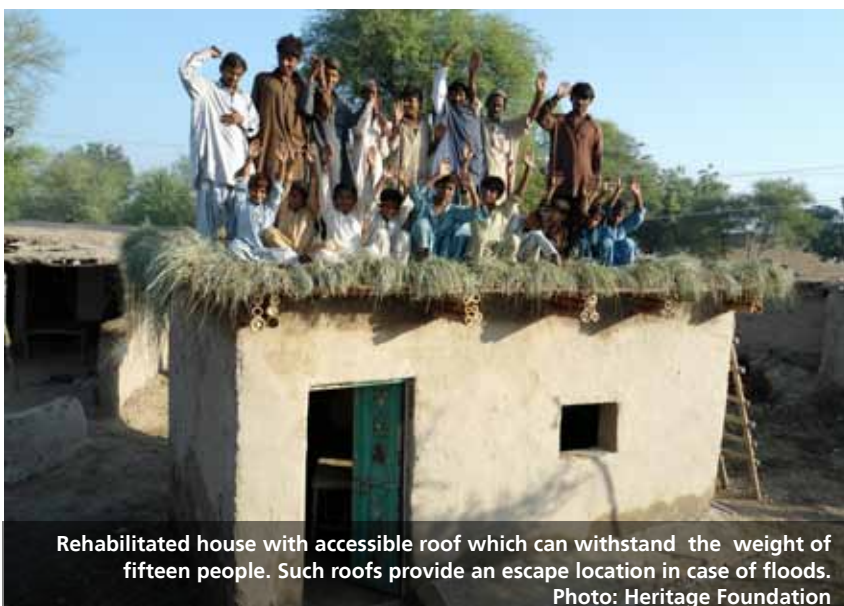
Logistics

Most materials were procured locally reducing transportation costs and stimulating the local economy.

Materials

Below are the key materials for the different shelters types built.

Materials	Quantity
Flat roofs – accessible roofs 18'x10'	
Bamboo	628ft.
Lime (50 kg/bags)	350kg
Mud bricks	14,580
Layered mud/adobe	1,170ft ³
Loh-khat walls + roof 18'x10'	
Bamboo	918ft
Lime	350kg
Mud bricks	47ft ³
Loh-khat (reed filling for walls)	464ft ²
Conical Chaura roof Size 16' diameter	
Bamboo	224ft
Lime	350kg
Layered mud/adobe	1380ft ³



Rehabilitated house with accessible roof which can withstand the weight of fifteen people. Such roofs provide an escape location in case of floods. Photo: Heritage Foundation

A.24 Peru – 2012 – Flooding and Land Slides

Case Study: **Keywords:** Unplanned / Unmanaged camps, Household NFIs, Tools, Emergency shelter, Training.

Country:

Peru

Project location:

Central Peru and Lima

Disaster:

Floods and Landslides

Disaster date:

November 2011 to May 2012

Number of people displaced:

November 2011 to May 2012
278,800 people made homeless

Project target population:

409 families

Project outputs:

409 tents and non food item kits

Occupancy rate on handover:

100 per cent

Shelter size:

18.5m²

Materials cost per shelter:

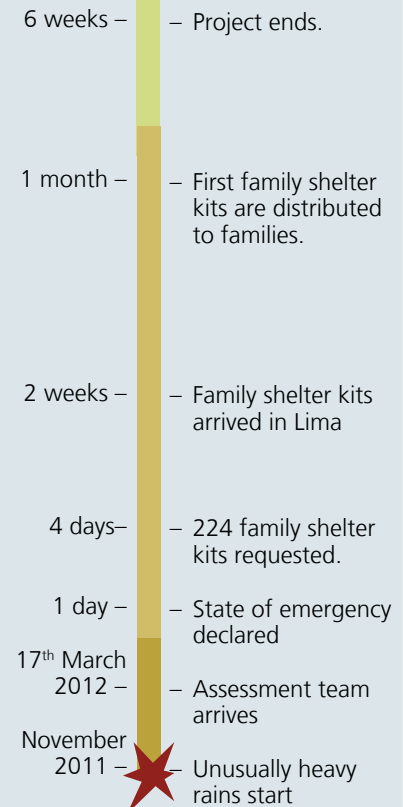
US\$ 280: Tent

US\$ 455: Non food item kit

Excluding transport and personnel



Project timeline



Project description

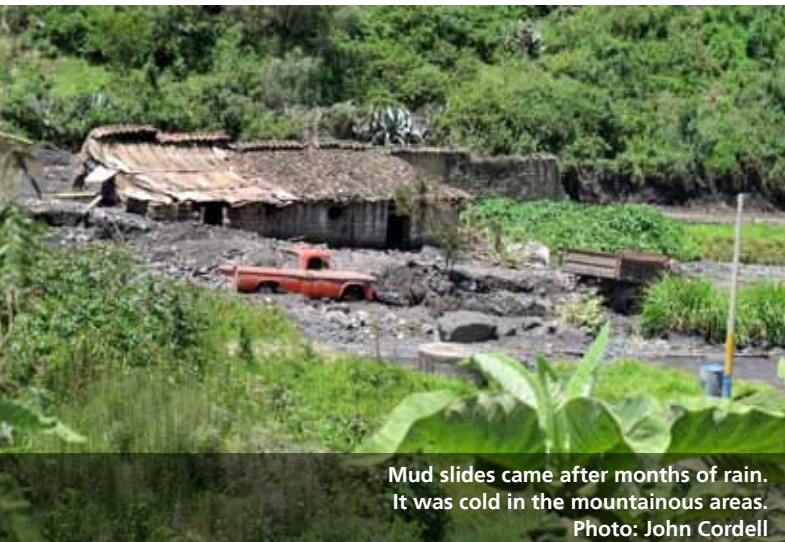
Tents and non-food items were provided to families who had lost their homes as a result of landslides. The tents and family kits were shipped into the country from international pre-positioning locations in coordination with the local disaster management authorities. The entire distribution project lasted 6 weeks.

Strengths and weaknesses

- ✓ Regionally prepositioned stock overcame the time-restraints of procurement lead-times.
- ✓ Tents and blankets provided a rapid shelter solution that provided protection from the elements. Fuller construction would have been difficult as the construction season had passed.
- ✓ The emergency shelter was distributed with various non food items, including a tool kit.
- ✓ Families were allocated safer land by the authorities.
- ✓ Given the challenges of access, the portability of single-family kits was useful.
- ✗ Relatively high per household cost for an emergency intervention compared to other relief operations in response to the floods.
- ✗ The organisation provided tents and non food items as emergency shelter, but did not actively engage in water sanitation and hygiene promotion or other needs. There were few other actors involved in the sites leaving a newly formed but small settlements

with limited services.

- ✗ Time was lost in resolving national and regional import regimes.
- ✗ Materials were imported before clarifying customs and handling fees. This led to delays and protracted negotiations.
- ✗ The small size of the project team restricted the ability of staff to actively participate with beneficiaries and monitor the response.
- Although tents and non food item distribution is not the sole solution in emergency response, and may not directly support recovery programming, there are clear times when they meet a humanitarian need.
- The organisation relies on small teams of expat volunteers to oversee distribution so as to keep running costs low. However, this combined with the wide geographical area of the distribution left the team little time to train people in how to erect the tent or to use the water purification equipment.



Mud slides came after months of rain. It was cold in the mountainous areas.

Photo: John Cordell



The project provided imported tents and non-food items, creating temporary settlements of up to 60 families.

Photo: ShelterBox

Before the floods / landslides

Peru is prone to natural disasters, including droughts, fires, floods, landslides and avalanches, extreme temperatures and earthquakes.

Since 2008, Peru's economy has grown at around 9 per cent annually, mainly as a result of its natural resources. However, there are huge economic disparities throughout the country, with more than half of the population living below the poverty line.

The government disaster management agency, INDECI, consists of a federal body and departmental bodies that have different amounts of resources at their disposal, dependent on the wealth of their department.

Construction practices vary across Peru. In the central highlands, the majority of houses are built from mud blocks with corrugated iron roofs. The construction season is dependent on the amount of water available which is very limited during the dry season.

After the floods / landslides

La Niña, a macro weather phenomenon, combined with local systems, caused the Amazon River to reach a historically high level. This led to a State of Emergency to be declared on 18th March in 18 of the 24 departments in Peru. This state of emergency was later extended for an additional 60 days.

The floods most severely affected people living in the region of Loreto, which was also one of the poorest areas in the country. As a result, coordination of humanitarian activities mainly focused on this region.

The landslides affected homes in the south eastern part of Peru. In the case of mud slides, both the damage and the needs were very localised.

The circumstances of the people displaced by the landslides varied. Some stayed with families, others received a (temporary) stipend from the government to live in guest houses. Others were living in tents of variable quality that were on loan from the government disaster management agency, or lived under plastic sheeting that was open at both ends. The temperatures ranged from 3 to 25 degrees centigrade depending upon location.

Following the landslides, many people slept outside or in simple makeshift shelters.

Selection of beneficiaries

Working with the local INDECI office, the assessment team decided to provide some support to 173 households in Loreto district and 409 households affected by landslides in the central Peruvian highlands. The majority of this case study will refer to the intervention in the highlands.

The main selection of locations and beneficiaries was through the local INDECI office with some in-

dependent validation. Initially, selection criteria included particular vulnerabilities (specifically the very young and old, pregnant women and people with physical and mental disability). Healthcare professionals were consulted on what were likely to be the most vulnerable groups in specific geographic areas of need, taking in account climate and altitude.

However, as more accurate needs assessments were compiled, it became clear that the organisation would not be able to provide emergency materials for the entire displaced population in the Andean states. At this stage the initial selection criteria were dropped. Distribution was then coordinated with the elected representatives of camps for displaced people. Generally, these representatives were connected to the project staff by the local Civil Defence. Occasionally the project staff were approached directly.

Additionally, locally elected relief representatives produced detailed lists of people requiring support.

Site selection

Approximately ten percent of the affected households were staying with host families. For these groups, tents had been erected on individual plots of land adjacent to host families' houses.

For the majority of households, the land that their houses were on had been destroyed by the landslides, and new sites had to be iden-



Families made modifications and upgrades to their shelters. Left: in the highlands, Right: in the lowlands. Photo: ShelterBox

tified. These new sites were identified and permanently allocated by the authorities in agreement with the hosting villages. These sites varied in size, the largest site of one hectare initially housed 76 households.

Implementation

The organisation did not have any staff in Peru before the disaster. However, a team had travelled to the country to perform a needs assessment in the country in March 2011 following reports of flooding. As a result the team was able to draw upon pre-existing contacts, such as INDECI, who became the key project partner.

The organisation imported kits containing emergency tents and household non-food items. It delivered these to families who had been removed from their homes by landslides.

The organisation deployed three consecutive expatriate volunteer teams over the course of six weeks, starting the day after the mud slides. The first team of two people conducted a needs assessment. This was followed by two four person teams who oversaw the distributions and trainings on the erection and maintenance of tents. Three months after the end of the project, a monitoring and evaluation team travelled to the affected region.

In the newly established sites, the disaster management authority provided some clean water, containers and some very basic latrines.

There were very few other organisations operating in the area, and no organisations took on sanitation or hygiene promotion activities at the sites.

Training

As the disaster affected people had never lived in tents before the teams conducted some basic trainings in erecting and maintaining tents. The main focus was on tightening guy ropes sufficiently so that the tents did not blow about, but not tightening them too much so that the tents ripped. There was also a short training on locating and orientating tents and the distance between them.

As the organisation also distributed some water purification equipment and conducted a training on its use. However, this may not have been fully adequate.

Logistics and supply

All items had been transported by sea to Panama where they were pre-positioned. From Panama they were flown to Lima. Within Peru the boxes were transported by air, truck and/or boat. 69 out of the boxes that were sent to the Loreto region were flown as gifts-in-kind. Transport for staff was paid for through gifts-in-kind.

INDECI offices at the departmental level acted as the consignee for bringing tents and shelter kits into the country. This created significant delays as negotiation was required between federal and local offices to agree who would pay

for the import and handling fees. In the end, the international organisation covered the handling fees to prevent further delays, and the disaster management agency covered all other costs.

The shelter kits were brought to their final locations in 4 wheel drive vehicles, or carried by hand. The strong packaging made this task much easier.

Adaptation of tents

Three months after the distribution, an evaluation found that the majority of families were still living in the tents that had been provided. There were no projects in process to build more durable shelter or housing.

Many families had built a kitchen and a shaded area as an extension out of timber and tarpaulins. This was observed both in the highlands and in the lowland locations.

Materials list – if relevant

Materials	Quantity
Box	1
Relief tent	1
Blankets	5
Ground sheets	2
Landtrade mosquito nets	2
Kitchen set	1
Water carriers	2
Family water filtration unit	1
Toolbag with hammer saw, pliers and rope	1

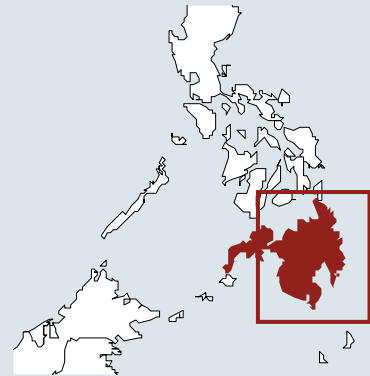
A.25 Philippines – 2011 – Cyclone

Overview:

Summary

In late 2011, over 39,000 houses were damaged and over 400,000 people were displaced by winds, floods and landslides following tropical storm Washi (also known as Sendong). Collective centres were established and non-food items were distributed in the first phase of the response.

After the emergency phase of response, transitional sites were established and programming shifted to include reconstruction on newly identified relocation sites (see A.27), transitional shelter programming in existing urban areas (see A.26), and repair and rehabilitation of damaged houses. After one year, 7,800 people remained in 38 different evacuation centres.



Background

The Philippines is a middle-income country, with a well-educated population and engaged local and national authorities. The Philippines regularly faces natural disasters and the country has had previous experience of coordination with the cluster system. This helped to manage the response efficiently.

Many low income families had settled in particularly vulnerable locations on river banks and other marginal land. In large parts of Mindanao there had not been any major disasters in recent memory.

In rural areas, families commonly lived in *amakan* type shelters (with woven bamboo walls) with frames made from bamboo and other varieties of wood.

For urban areas, people living at or below poverty line, lived in a mixture of raggedly constructed shanties and semi-concrete houses.

After the cyclone

Tropical storm Washi, (also known as Sendong), hit the Mindanao region of the Philippines from the 16th to the 18th of December 2011. The storm brought strong winds and heavy rain that led to flash floods, landslides and protracted flooding. 624,600 people were affected, 430,000 people were displaced and 39,000 houses were damaged or destroyed. The primary impacts were in Cagayan de Oro City and Iligan City.

In the immediate aftermath of the storm, people found shelter in evacuation centres, with host families, in rented accommodation, in makeshift shelters at the site of destroyed houses or in damaged houses.

The government immediately mounted a major emergency rescue, evacuation and response operation. Coordination was rapidly

established in northern Mindanao by the Office of Civil Defence. It worked closely with international organisations, and established co-ordination groups for shelter, camp management coordination and for non-food items.

Approximately three quarters of those people affected by the storm lived at or below the poverty line with limited means for self-recovery. Of the partially damaged houses, nearly half had no structural damage but needed to be cleaned before families could move back in.

Two months after the storm, moderate to heavy rains fell over parts of Mindanao and Visayas islands, triggering some flooding and landslides. Although no flooding was reported in the areas affected by the tropical storm, the rain worsened the conditions in temporary shelters.



Before the cyclone, many families were living in locations that were vulnerable to storms and flooding, but that had access to livelihoods. The government declared that some of these were “no build” zones, and new sites had to be identified. Photo: Wan Sophonpanich



Heavy rain caused over 400,000 people to be displaced. Most people made temporary repairs to their houses or moved in with host families. Photos: Anna Pont

Evacuation centres

A total of 119 evacuation centres were established, housing 100,000 people (20,000 families). Initial response mainly focussed on meeting the needs of people in these often crowded evacuation centres. Camp management committees were established in many of the sites.

By the end of 2012 many evacuation centres had closed, leaving 7,800 people (1,700 families) in 38 evacuation centres.

Tented camps

Some tented camps were established to decongest some of the most overcrowded evacuation centres, and to provide shelter for people living in evacuation centres which needed to be returned to their previous use (such as schools).

Transitional sites and Relocation sites

Where temporarily available land could be found, transitional sites were established as a more durable solution to camps (See A.26).

When land for construction could be negotiated on a long term basis, relocation sites were established (See A.27). After four months, seven relocation projects were underway, with a planned capacity of nearly 6,000 houses for households whose land was unsafe.

By the end of 2012, nine permanent relocation sites had been established by the local government working with NGOs. 3,147 shelters were complete, 2,943 of which were handed over. 359 more permanent shelters were being built.

Host families

Despite the early focus of relief activities on collective centres and the comparative ease of delivering large scale assistance to these centralised sites, the majority of the affected population found accommodation with host families. After 2 months, 260,000 people were living with host families. The main support that these families received was through emergency distribution.

Recovery

An interagency shelter assessment based on secondary data sources was conducted within the first month of the storm, but took some time to be finally published. It provided numbers of damaged and destroyed houses that were used as planning figures.

Following these results, the shelter organisations collectively agreed to prioritise support to the most vulnerable 65 per cent of people whose houses had been lost or damaged:

- families/occupants of the 13,850 structurally damaged houses who were at or below the poverty line
- families from all the 11,427 totally destroyed houses.

The government established a reconstruction policy that included:

- the establishment of no build zones
- permanent housing
- material supplies
- site upgrading for informal settler families
- housing loans for families in formal settlement sites.

In practice, the only no-build zones that were officially declared were in Isla de Oro and Cala-cala. These highly damaged settlements were directly in the path of the river. No official declaration was made regarding other high risk and medium risk areas.

Land

One of the major constraints in the provision of temporary and permanent shelter was the lack of available land. Identifying land and preparing transitional and permanent relocation sites took many months.



Camps were established for people living in closing or overcrowded evacuation centres. Some of the camps were very dense. Photo: Anna Pont



Some transitional sites were established as more durable solutions than camps. Photo: Anna Pont

A.26 Philippines – 2012 – Cyclone

Case Study:

Country:

The Philippines

Project location:

Mindanao

Disaster:

Tropical Storm Washi (Sendong)

Disaster date:

December 16th 2011

Number of houses damaged / destroyed:

39,000

Number of people displaced:

30 per cent of the 600,000 population of Cagayan de Oro City

Project outputs:

30 transitional settlement sites with services
1,823 t-shelters

Occupancy rate on handover:

92 per cent

Shelter size:

18m² for family of five

Materials cost per shelter:

US\$ 410 for relocation sites
US\$ 550 for on-site construction.



Project timeline



Project description

The organisation implemented an urban transitional settlement programme building 1,823 transitional shelters. Many complex issues arose, including land and property rights, zoning issues, high-risk settlements and providing shelter solutions to those without land rights. This programme demonstrated the importance of and challenges to acquiring land for transitional settlements.

Strengths and weaknesses

- ✓ The transitional shelter (t-shelter) design cost US\$ 410, including labour. This was cheaper than emergency tents (US\$ 800-1,000, including airfreight).
- ✓ The t-shelter design and was inspired by the local vernacular architecture. Shelters could be maintained and materials could be re-used.
- ✓ The integration of WASH and shelter was emphasised from the beginning of the program.
- ✓ The agency put a great deal of effort into persuading land owners to release their land.
- ✓ The agency successfully negotiated the free installation and use of water and electricity for two months for 7 relocation sites.
- ✗ There were questions around how disaster-resistant the t-shelter design was.
- ✗ The organisation would have benefitted from hiring a liaison officer to better understand the political system and accelerate the project.
- ✗ There were difficulties in verifying beneficiaries for

on-site shelter support. Additional targeting criteria and stricter decision-making timeframes would have improved beneficiary selection.

- ✗ The project was unable to support some of the most vulnerable affected populations, notably people in 'high-risk zones' (due to official objections) and people with ambiguous land tenure.
- ✗ An alternative shelter design for people with disabilities should have been developed.
- An ill-defined 'no-build zone' policy created challenges. A number of landowners remained in 'limbo' because their homes were within no-build zones, and new land was not allocated.
- Different stakeholders, such as the church and local government, had different approaches to beneficiary selection and prioritisation.
- Some affected households refused to move into a transitional settlement because they thought this would impact on their right to promised permanent housing.

Before the cyclone

(See overview A.25 for background.)

Until 2011, there had been no major floods in the area since the 1950s. The population of Cagayan de Oro had spread along risk areas, such as river banks and delta areas. In Macasandig, one of the most affected areas, there was a mix of commercial and residential buildings. Residents ranged from poor in shanty areas to middle-class in apartment buildings.

Despite the well-developed local administration, the complexities of addressing housing, land and property issues in an urban transitional response presented real challenges in supporting the most vulnerable.

After the cyclone

The flash floods caused by Tropical Storm Washi destroyed a large portion of the city centre of Cagayan de Oro. Macasandig and Isla de Oro were the worst affected urban *barangays* (the smallest administrative boundary, equivalent to a village).

Poor families residing in makeshift shelters by the river banks suffered the most. Many middle-class households who rented or owned apartments were also affected.

As the emergency response unfolded, the government launched their permanent housing programme. The agency proposed a two-tier transitional shelter programme to plug the gap between emergency shelter and permanent housing.

Land Acquisition

The following criteria were used to verify the suitability of land:

- clarity of land ownership
- land is donated rent-free for up to 2 years
- land owner clearly understands the purpose and the nature of transitional settlements
- land is well drained and is not at



Emergency shelters such as schools and gymnasiums quickly became overcrowded in the aftermath of the storm.
Photo: CRS/S.Hirano

- risk of flooding or landslide
- access to roads
- access to water (either groundwater or pipe connection) and electricity
- costs of travelling into the city from the site were not prohibitively expensive for beneficiaries
- the proximity of public facilities such as schools, health centers and markets.

Different types of agreement were required with different landowners. In most sites, there was a guarantee that land would be returned to owner. Overall 30 sites were established.

The types of agreement are summarised in the table below.

owner	type of agreement	endorsed by
City	Verbal agreement for temporary use. Other conditions included requests for certain shelter recipients or, in one case, early closure of the site in order for the land to be used for permanent shelter.	Mayor
Private	Written MoA between the Archdiocese of Cagayan de Oro and the landowner with terms and conditions.	Landowner
Church	Verbal agreement after request of Archbishop.	Archbishop

Selection of beneficiaries Relocation

There were only two organisations who responded with transitional shelter projects in the Philippines. As a result, there was considerable pressure from government officials, church leaders, camp managers and other NGOs to prioritise certain evacuation centres or specific beneficiaries.

The government prioritised closing evacuation centers and tent cities before assisting community-based IDPs as the evacuation centres were costly and water and sanitation services were over-stretched. Meanwhile, organisations working on education issues advocated for emptying schools to address protection concerns associated with having displaced people living on school grounds.

Families who wanted to return to their places of origin were given lowest priority on the permanent housing waiting list.

The organisation faced the challenges of determining whether informal settlers had really lost their homes in the storm. There were some cases of 'opportunists' trying to use the system to receive a shelter although their home remained intact.



Transitional shelters could be relocated.
Photo: Charisse Mae Borja / CRS



Transitional shelters could be placed on available plots of land.
Photo: Seki Hirano / CRS

The organisation aimed to retain community social structures as far as possible when relocating beneficiaries in the most affected areas. This was not always possible due to variations in site location, timing of response, and the number of shelters available on each site.

On site Construction

Affected households whose houses had been totally destroyed, and who lived in low to medium risk zones, were offered flood-resistant transitional shelters sited in their original neighbourhood. Water and Sanitation facilities were organised within community groups and elevated septic tanks were constructed.

Informal settlers were often without official land or house tenure papers. This meant it was difficult to confirm whether they had lost their home during Washi or if they had lived elsewhere.

To identify households for on-site rebuilding, the organisation conducted a community mapping process. This involved visiting former housing locations, verifying the damage to houses, verifying the lack of shelter, interviewing neighbours and verifying lists of names with ward leaders and community leaders. This ward specific approach was taken helped to retain the community structure.

It was challenging to identify those most in need. As time passed, a number of people had begun rebuilding, making it difficult to verify the original level of damage.

Implementation

To address the range of needs the agency offered two transitional shelter options: construction on either the original site or in one of 15 relocation sites.

Transitional shelter design

Transitional shelters erected on relocation sites needed to be moveable and make minimal impact on the land.

The agency worked with a local architect and local engineers to design an adaptation of the traditional *Amakan* (bamboo or palm leaf weave) house.

Amakan houses have been built for centuries and are well adapted to the tropical climate of the Philippines. They can also easily be repaired or rebuilt. The design used locally available *amakan* (palm was used) for the walls and coco lumber, which is durable and inexpensive, for the structural frames.

The design was based on the following design criteria:

- Culturally appropriate: Provides privacy, uses local materials and provides protection from rain and heat
- Relocatable: Can be carried by 20 persons or easily dismantled
- Speed of construction: Can be built in 2-3 days
- Economical
- Flexible: Design can be adjusted for relocated families or those returning to original sites
- Upgradeable: Can be upgraded to a permanent home.

DRR components

Drainage, sewage channels and other essential infrastructure were provided where necessary. This was to ensure the protection of both the people living on the land and the land itself.

On-site transitional shelters were constructed using a reinforced concrete foundation enabling the shelter to be securely anchored, preventing it from being upturned by flood or strong winds.

The design featured a raised floor to provide flood protection, facilitate ventilation and to keep out vermin.

Logistics

Drying timber and limited road access were the biggest logistical issues, affecting delivery time and costs. One truck could carry enough timber for 28 transitional shelters, meaning that over 75 truckloads of timber were required for the whole project.

Materials list

Materials	Quantity
Portland cement(40kg)	5 bags
Mixed gravel	1 bags
10mmx6.0m re-bar	12m
8mmx6.0m re-bar	3m
Coco Lumber 4"x4"x12'	64 ft.
Coco Lumber 2"x3"x12'	128 ft.
Coco Lumber 2"x4"x8'	128 ft.
Coco Lumber 2"x2"x8'	75 ft.
Coco Lumber 2"x4"x8'	32 ft.
2" umbrella nails	1kg
Bamboo slats	3 bundle
Nails	9kg
Plywood 3/4"x4"x8"	6 sheets
Plywood 3/16"x4"x8'	6 sheets
Amakan 4'x8'	13 sheets
Sealant	1 pint

A.27 Philippines – 2012 – Cyclone

Case Study: **Keywords:** Resettlement, Household NFIs, Construction materials, Core housing construction, Housing repair and retrofitting, Site planning, Infrastructure, Training.

Country:

The Philippines

Project location:

Mindanao

Disaster:

Tropical Storm Washi (Sendong)

Disaster date:

16th December 2011

Number of houses damaged / destroyed:

39,000

Project outputs:

5,000 emergency shelter kits
6,000 permanent core houses
(90 per cent complete)

Occupancy rate on handover:

70 per cent occupancy

Shelter size:

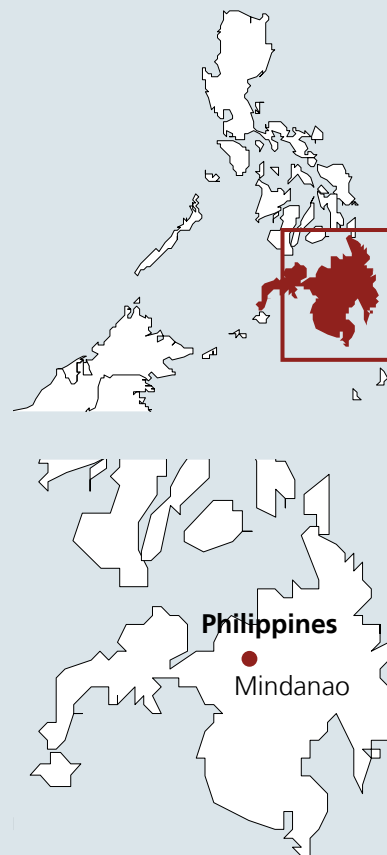
21m² - permanent core house

Materials cost per shelter:

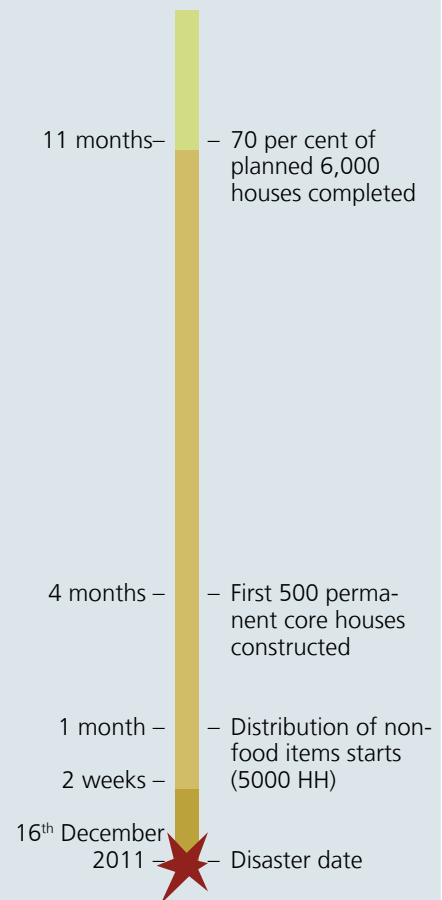
US\$ 50: emergency shelter kit
US\$ 2,750: permanent core house

Project cost per shelter:

US\$ 3,100



Project timeline



Project description

The organisation distributed 5,000 shelter repair kits and built 6,000 housing units for displaced families. It built the houses with services on new relocation sites using contractors, volunteers and working with partners. It deployed three construction mobilisation units for the repair and restoration of houses and communities damaged by the storm.

Strengths and weaknesses

- ✓ Good relations were established with local authorities. As a result, land for relocation sites and resources for site development were readily available from the authorities.
- ✓ Quick development of family selection criteria and process. As a result, displaced families could be offered a clear path to recovery in a relatively short time.
- ✓ Good management of construction activities in multiple sites with a variety of contractors contributing to a steady delivery of permanent shelter.
- ✓ The project has allowed the development of block-making, welding and carpentry skills among the affected populations.
- ✗ Due to limited availability of local construction materials and high prices, advance scouting became necessary to order from suppliers. This created some backlog in implementation.
- ✗ Price hikes of 30 per cent and more created a

negative impact in the project and the local economy.

- ✗ Relocation introduced the need to develop new networks and community relations among the relocated population. These activities had very little funding support from the project.

- ✗ Delays among other organisations providing infrastructure and services to the sites meant that only 70 per cent of the houses were occupied by the end of 2012.

- Strong coordination with other organisations through national coordination and local interagency group meetings was needed to avoid duplication of material distributions. Several organisations provided similar products, such as repair kits.

- At the end of 2012, Typhoon Bopha (Pablo) hit Mindanao. Previously, Mindanao was seldom hit by cyclones and typhoons, as a result preparedness was lower than elsewhere.



The organisation rapidly completed 70 per cent of a planned 6,000 houses within 11 months of the storm on safer permanent relocation sites.
Photo: Mikel Flamm

Before the cyclone

See Section A.25 for background.

Families were settled along the river banks of the Cagayan de Oro river and other minor streams in northern Mindanao. The locations are extremely hazardous and in high-risk for flash floods. While being high risk areas, these locations were well located economically, being near the cities' commercial districts where most families found support for their livelihoods.

After the cyclone

Rain from the severe tropical storm Washi (Sendong) created flash floods. Most houses located by the river banks were completely destroyed. Homes in safer locations were damaged by high winds.

The government issued a decree to prevent re-settlement and reconstruction of houses in some high risk areas. As a result, families were displaced into camps set up by the local authorities and international humanitarian organisations.

The Government of the Philippines made an early decision after the disaster to relocate affected families who had been living in the river banks of the Cagayan de Oro river. Their homes were completely washed away by the floods.

Local government entities provided land for temporary camps in the outskirts of cities, to accommodate the displaced until permanent shelter could be secured.

Implementation

The organisation distributed 5,000 emergency shelter kits containing construction materials (timber, corrugated galvanised sheets, nails, etc.) and basic tools to support emergency repairs on damaged homes.

Staff made an initial damage assessment in affected neighbourhoods and issued vouchers. The distribution was made out of a centrally located warehouse.

In coordination with local and national authorities, the organisation conducted assessments and planned to construct 6,000 permanent shelters in 10 relocation sites in Cagayan de Oro City and Iligan.

Government agencies provided land from pre-existing land banks and facilitated planning resources and heavy machinery for site development. The organisation was put in charge of overall programme coordination and the construction of the permanent shelters.

Selection of beneficiaries

The Philippines' national Department of Social Welfare and Development, conducted a thorough survey and census of affected families. It used this to determine eligibility for assistance and shelter support. Families prevented from resettling in high risk areas were placed in tented camps and selected for relocation to the nearest site where permanent shelter was being built.



New relocation sites were planned in locations with lower cyclone risk.
Photo: Mikel Flamm



Non-food items and housing repair kits were distributed to 5,000 households.
Photo: Leonilo Escalada



Construction was implemented using contractors, volunteers and by working with partner organisations.
Photo: Mikel Flamm

Implementation

The organisation used 22 small construction groups as external contractors. These worked in combination with its own staff, volunteers and implementing partner organisations.

Family participation in project activities was limited to unskilled tasks and attendance to skills development training (carpentry, welding, and concrete block-making).

Coordination

From the beginning of the response, it became clear that there would be a division of labour between humanitarian organisations responding to the disaster.

While some organisations invested efforts in tents and transitional shelter in camp settings, this organisation was keen to embark on a permanent shelter construction programme to allow for the next stage in the recovery. Coordination was key in helping to clearly define these roles, and to provide a pathway to permanent shelter for affected families.

DRR components

The different relocation sites were located in low-risk areas, with reduced natural threats. These relocation sites were safer than families' original plots by the river.

The permanent core houses were structurally designed by engineers, incorporating strapping and reinforcements and were approved by the relevant authorities. The sites were provided with drainage infrastructure and roads, and walkways were built to manage erosion.

Before families moved into their new homes, as part of the induction to the new settlements, they received an initial training induction on disaster preparedness. This was coordinated with the local emergency management agency.

Technical solutions

The core house was built from concrete blocks, with a reinforced masonry design. There were steel reinforcement bars, both vertically and horizontally. The roof structure was made of metal trusses and purlins, with a cover of zinc/aluminium sheeting. Doors and windows used metal frames, and the floor was covered with ceramic tiles.

Each shelter unit had a multiple purpose room, an attached sanitary unit (toilet and bath area) and a small kitchen area. The height of the buildings allowed a mezzanine level to be built by occupants to create a raised sleeping area. This could potentially increase the living space from 21m² to 36m².

"At the beginning, we were doubtful we could be in a permanent house so soon after Washi. We are happy that we could move out of the tent into a permanent house."

A new housholder at the Calaanan site, Cagayan de Oro City

Logistics

On account of its scale, the project presented many logistical hurdles related to the supply of construction materials.

The organisation purchased cement, reinforcement bar and other materials in bulk to minimize the price rises following the disaster. These materials were then distributed to contractors as required by the progress of construction.

The project benefitted from skilled and experienced managerial staff coming from the organisation's central office in Manila, as well as newly hired staff.

A.28 Somalia – 2011 – Famine / Conflict

Update:

Keywords: Urban neighbourhoods, Household NFIs, Construction materials, Transitional shelter, Site planning, Infrastructure, Coordination.

Country:

Somalia

Project location:

Mogadishu

Conflict / disaster:

July 2011 Famine and Continuing conflict

Number of people displaced:

200,000 IDPs in Mogadishu

Project target population:

Approximately 36,000

Project outputs:

3,645 housing units complete
WASH and health facilities

Occupancy rate on handover:

100 per cent - November 2012

Shelter size:

15.8m² (3.6m x 4.4m)

Materials cost per household:

US\$ 420



Project timeline



Project description

The Tri-Cluster project is a coordinated group of 16 projects implemented by 14 partners across the sectors of shelter, WASH and health. Zona K in Mogadishu was chosen as the target area as it had the densest concentration of IDPs and was the least likely IDP settlement to be evicted once Mogadishu stabilised and developed. The project goal was to improve the protection for displaced people living in Zona K through improved settlement planning and the provision of integrated services from multiple sectors.

Strengths and weaknesses

- ✓ Regular coordination meetings achieved a common understanding of aims and objectives amongst all partners.
- ✓ By integrating services the project was able to act more efficiently to provide shelter, access to water and sanitation and basic health services.
- ✓ Settlement planning has enabled organisations to have better access and the beneficiaries have an enhanced sense of community. Displaced people were involved in the development of context-specific planning standards which helped manage expectations.
- ✗ Underestimation of the impact of other projects funded through other sources active in the same project area.
- ✗ Although eviction is unlikely in the short-term, there is no clear ownership of land and so displaced people are vulnerable to the Somali 'gatekeepers'.
- ✗ A weak community structure combined with the

fact that many people were already settled within the settlement meant that it was not always possible to follow site plans and meet minimum standards.

- ✗ Communal spaces have been eroded by an increase in the numbers of people living in Zona K.
 - As the sectors work at different levels (shelter with households, WASH with groups of five families per latrine and health with the whole community) synchronising activities required complex work plans.
 - Mapping all the stakeholders in the process was difficult, and their influence changed over time.
 - The project had a high profile, putting implementing partners under pressure to produce results quickly, compromising planning and construction quality.
 - The Tri-Cluster coordinator took on many of the camp management and camp coordination duties.



An urban area of Mogadishu was re-planned and many organisations worked together working in three sectors of intervention. These shelters have been upgraded by inhabitants who have built their own external shaded and cooking areas. Photo: Richard Evans

Before the displacement

Mogadishu has hosted displaced people from conflicts since 1991. However, as drought worsened in late 2010 and famine approached in early 2011, more and more Somalis were driven away from rural areas to Mogadishu looking for assistance and safety.

Displacement was compounded by the ongoing conflict in Somalia.

After the displacement

Upon arrival in Mogadishu, the Internally Displaced Persons (IDPs) settled on any unoccupied land. This process of self-settlement meant that there was no site planning. Services such as water and sanitation, and access to the 100 or so settlements were sporadic. As the number of sites closer to the centre of town reduced and as Al-Shabaab's influence lessened, many IDPs settled into the area which became known as Zona K.

Zona K's mixed ownership, between the government, the university and some private individuals, meant that it was one of the least likely sites to be evicted. By the end of 2012, the site covered an area of over 3km² with an estimated

70,000 IDPs living in make-shift shelters called *buuls* (traditional Somali thatched shelter). These were constructed by the IDPs themselves from scavenged materials and items received from humanitarian organisations.

Any attempt to coordinate settlements in Mogadishu would have directly interfered with the economic relationship between the host population and the IDPs. As a result, no formal camp coordination mechanism was established.

As a response to the influx of IDPs into Mogadishu, a three-phase strategy was developed in July 2011:

- Provide all displaced people with a non-food item packages
- Provide transitional shelter solutions
- Provide site planning to improve living conditions and access to other basic services such as WASH and health.

The shelter coordination did not advocate the creation of new settlements for the IDPs. This strategy was attempted in Puntland (see A.8 in *Shelter Projects 2008*) but was not very successful. Instead, the

Cluster advocated that organisations should provide humanitarian assistance to the locations where IDPs had self-settled. This has been the approach in Somaliland and Puntland where the conditions and access are more favourable.

The mechanics that control the creation of new camps were deemed too complex and unpredictable to encourage new sites.

Implementation

Under the umbrella of the Tri-Cluster there were five shelter projects, with a total value of US\$ 4 million.

The first project focused on mapping the existing settlement, producing settlement plans, and creating access roads and storm drainage.

This mapping was followed by consultations with the beneficiary community and landowners to ensure that people would not be evicted once work was completed.

One organisation chose to work through long-standing partner organisations while the other contracted the work to local construction companies.

Where possible the implementing organisations followed the site plans, but they were often forced to deviate from them. Reasons for this included the need to accommodate new demands from stakeholders, the construction of new permanent structures that had been built after the initial mapping, and the need to accommodate a larger population.

Once the shelters were completed, two local organisations provided non-food items, including blankets, kitchen sets, jerrycans and fuel-efficient stoves. Beneficiary lists were provided by the main shelter partners, and distributions were undertaken once the shelters were handed over.

Selection of beneficiaries

The whole area was sub-divided into 25 zones, and settlement planning was based on the displaced population at the time of mapping. The two main organisations started in different zones and completed all the construction before moving on to the next. Every IDP that was registered received a shelter and non-food item kits. The other Tri-Cluster partners provided sanitation and water points in the locations identified during the planning process.

Coordination

Effective coordination was crucial for success, as there were 16 projects operating in a very concentrated area. In addition, there were many actors who were already working in Zona K. Therefore, a dedicated Tri-Cluster coordinator was brought in to act as a focal point for the 16 projects.

Initially there was reluctance from some of the implementing partners to work under the same umbrella. The WASH and health partners did not want to wait for the mapping process to be completed, and wanted to implement projects immediately, regardless of the output from the planning phase.

Over a series of meetings, the importance of coordinating activities was emphasised and a plan was developed where some activities could be carried out at the same time as the mapping.



The project integrated shelter WASH, health and site planning.
Photo: Richard Evans

Coordination and communication was needed with the local authorities ensured that they were aware of the project and its implications, and that they approved the temporary development plans. As the final shelter solution was semi-permanent (5 to 10 year lifespan), the urban planning undertaken as part of the Tri-Cluster, will influence the development of this part of the city. Access roads created now, will be the main roads for years to come.

Technical solutions

The shelter actors worked with the main partners to identify a unified shelter typology. Initially, US\$ 80 shelter kits were planned as the land tenure was not known. Later, a 'hybrid' between plastic sheeting and corrugated galvanised iron (CGI) was adopted during the planning stage. This provided a better quality shelter while also keeping a light footprint. The design was developed further just before the construction phase into a full corrugated iron model, partly due to donors and partly due to protection concerns.

Future

The Tri-Cluster project was expanded for 2013 to include education and protection focused projects. It was planned for an additional shelter agency to join the existing two partners, and 3,000-4,000 more shelters were planned.

Once the framework and common understanding on coordination was created, it became feasible to add additional sectors and projects.

The Tri-Cluster approach came about because the Humanitarian Coordinator considered that shelter, WASH and health were the most pressing needs for the IDPs. At the time there was surprise that other sectors were not also included in a multi-sectorial approach. However, the coordination of just three sectors was difficult enough, and in retrospect the presence of additional partners and targets may have reduced the effectiveness of the entire intervention.

Generally, once an organisation secured funding, the focus was immediately on implementing as quickly as possible in order to meet project targets. To combat this "tunnel vision" amongst organisations, the successful multi-agency approach invested heavily in communication and consultation. This always takes time.

Starting with just 3 sectors enabled a culture of coordination to be ingrained. Only once the coordination was working with a few key partners was it possible to expand to the full array of humanitarian services.

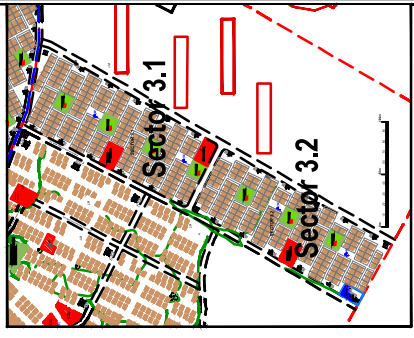
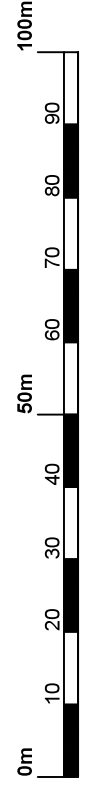


Sector 3.2	
Planning Population:	1248
No. of Shelter:	192
No. of Latrine:	11 (block unit of 3)
No. of Water Point:	2 (6 taps unit)
No. of Garbage Point:	1
Area of Health Center:	240 m ²
Area of School Space:	0 m ²
Area of Open Space:	630 m ²
Area of Communal Space:	290 m ²

Important Notes

- Proposed New plots for Shelter:** Community mobilization for Demarcation of plots 5.1m x 6.9m per Household prior the implementation of shelter.
- Proposed Communal Latrines:** The shown (newly proposed) communal latrines (L) are a preliminary design. Latrines are combined with wash rooms and separated by gender. Septic tank oriented to access road. The WASH Cluster will define a unified final design.
- Measurements:** Distances are indicated from from shelter wall to center line of an existing road/access path.
- New Water Points:** Technical implementation planning to be done by implementing WASH agencies and in line with overall Tri-Cluster Water Infrastructure plan for zone K.
- Spatial Reserves for social services and communal space (CS)** around open spaces, existing schools, creation of new open space etc.
- New Health care facility spaces (H)** are additional spatial reserves along main access roads.

- Legend**
- Existing structures & facilities:**
- Water Point / Water Point non-func.
 - Water Tank / Water Tank non-func.
 - Water Borehole
 - School
 - Health Facility
 - CGI structures
 - Trees / Bushes
- Proposed New Shelter and Facilities:**
- Shelter new 4.4m x 3.6m (Design by NRC/DRC)
 - Block of 3 Latrines & 1 Shower new (Design by WASH Cluster)
 - Water Point (6 taps) new
 - Reserve for Garbage Collection 4m x 4m (Container or Enclosed Collection Point)
 - Reserve for Health Post
 - Reserve for commercial use (min. 10m x 5m with assistance)
 - Reserve for IDP school (min. 10m x 5m with assistance)
 - Reserve for multi-purpose use (central kitchen/massage/police post, etc.)
 - Open Spaces new (playgrounds, sports field, etc.)



Site planning for the urban areas of Mogadishu. Different potential plans were shared with focal groups. In the end, row planning was chosen because people could understand it better and could clearly mark the extent of their 'land'. This would make it easier for people to know what belonged to them and help to avoid conflicts.

A.29 Republic of South Sudan – 2011 – Conflict

Update:

Keywords: Returns, Resettlement, Construction materials, Core housing construction, Site planning, Infrastructure, Training.

Country:

Republic of South Sudan

Conflict:

Post-war reconstruction

Conflict date:

1983 to 2005

Number of people displaced:

2,000,000

Project target population:

70,000 (includes beneficiaries of quick impact projects)

Project outputs:

8,300 shelters

2,200: Compressed mud blocks

6,100: Bamboo / wattle and daub

Occupancy rate on handover:

95 per cent

Shelter size:

16 m² - up to four people

24 m² - five people or more

Materials cost per shelter:

US\$ 400 - 600: poles and bamboo

US\$ 800 - 1100: compressed mud blocks

Labour: US\$ 260

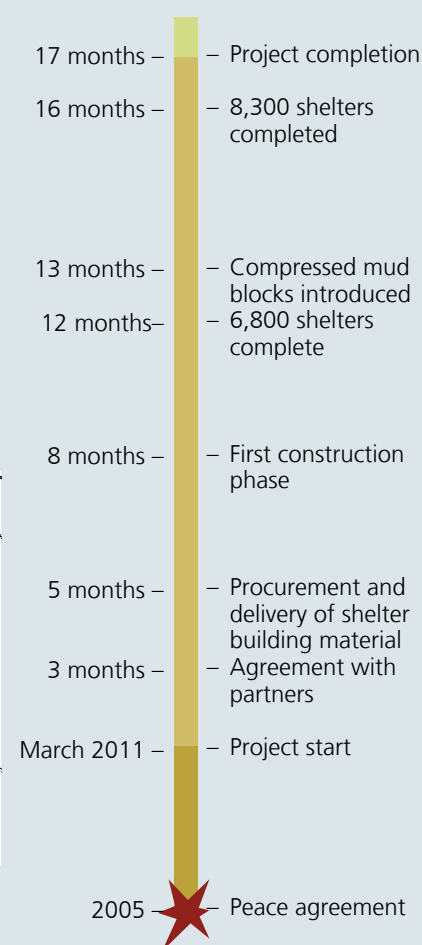
Average: US\$ 1,100

Project cost per shelter:

US\$ 600-1,200



Project timeline



Project description

The project supported reintegration of returnees. It constructed 8,300 shelters on new land plots provided by the government. Basic urban services such as school buildings and boreholes, were constructed through parallel programmes. Two shelter designs were employed: bamboo and thatched-roof shelters (6,800) that could be built quickly to respond to large-scale returns and compressed mud block shelters with CGI sheet roofs (1,500) to provide more durable structures.

Strengths and weaknesses

- ✓ Communities participated in the selection of vulnerable households and in designing shelters.
- ✓ Good coordination prevented returnees from being sited in areas too far from transport or services.
- ✓ Shelter construction was linked to projects to deliver basic services and livelihood opportunities.
- ✓ The project was able to respond to input from authorities and change the shelter design.
- ✓ Training of affected populations improved their construction skills.
- ✓ Partners were required to submit phased progress reports for each household to keep the project on schedule.
- ✗ Communities demanded incentives for their involvement in the construction phase.
- ✗ The target number of shelters was reduced by 35 per

cent due to rising costs and delays in block production.

- ✗ Construction using compressed mud blocks required a highly-skilled lead builder. In some early cases, skills were lacking and build quality was poor.
- ✗ Due to unexpectedly slow block production, the number of mud block shelters was cut by 800.
- ✗ Plans to use drainage activities to supply the mud required for blocks failed due to the lack of organisation at the community level.
- ✗ The project was too big and created unsustainable demands for materials, leading to concerns over the destruction of national forests.
- Compressed mud-blocks needed to be plastered with burnt oil, sandy soil and Arabic gum.
- As the compressed mud-block technique was new to some areas, its performance over time remains untested.



Approximately 25 per cent of the shelters were built using compressed soil blocks. The technique represented a financial and environmental improvement, but was slower, requiring significant efforts to introduce as a new technology.

Photo: Fernando Murillo

Before the conflict

South Sudan became independent from the Republic of the Sudan in 2011 following two civil wars (1955-1972 and 1983-2005). The Comprehensive Peace Agreement in 2005 signalled the beginning of a return process.

In 2011 Sudan, (north and south combined) had an Human Development index of 0.408 placing it in the “low human development” group. South Sudan is relatively less developed than the north and faces considerable challenges in terms of infrastructure development and poverty reduction, with many people unable to access social services or education.

After the conflict

The conflict between The Republic of Sudan and South Sudan stunted development in the South and most returnees had no shelter or land to return to.

2011 marked the peak in return as it coincided with the deadline for southern Sudanese to leave Khartoum, where the majority of IDPs had fled to during the war. There was also a significant return of the diaspora in neighbouring countries, Europe and the USA.

Implementation

The project built 8,300 shelters (6,800 in 2011 and 1,500 in 2012) and more than 42 community buildings (mostly schools) across the 10 states of South Sudan. Land was allocated by the Ministry of Housing and Physical Planning.

The project also implemented quick-impact projects and livelihood schemes.

The project was coordinated by an international agency (with two technical and two administrative staff), and implemented by partner NGOs and community organisations. Construction teams were made up of nine people, including engineers, construction supervisors, masons and carpenters.

Materials were procured by the main agency on behalf of the partners. The materials were distributed as self-construction kits. Experienced masons and carpenters were identified to provide “on-the-job” construction training for young people from both the returnee and host communities.

Construction progress was monitored by giving each shelter one of four statuses:

- To be done: Beneficiaries not yet identified
- In progress: Beneficiaries identified and land title received
- Under construction: Structure and roofing complete
- Finished: Beneficiaries have moved in.

Selection of beneficiaries

Project areas were determined by the agency in collaboration with the Ministry of Humanitarian Affairs. The shelters were distributed according to the proportion of returnees in each county.

Individual beneficiaries were selected jointly by the implementing partner agencies and the government. Criteria included households that were headed by children or women, households with individuals with disabilities and those who had no visible means to support the construction of their own shelter.

Beneficiary lists were then verified by the main agency’s field staff.

The beneficiaries came mostly from the returnee community but 10 per cent of shelters were constructed for families from the host community.

Associated projects such as borehole and school construction benefitted both groups. Land allocation was made through a government lottery process.

Households with special needs had their veranda, kitchen or oven built for them.

Coordination

Coordination was critical since so many actors were involved. The coordinating agency not only had to ensure coordination within the project in terms of working with implementing partners but also had to work closely with national and state authorities who were developing their planning and building regulations from scratch. Despite many delays the land allocation was completed in time for the shelters to be constructed.

Beneficiaries and host communities were also involved in prioritising the type of quick-impact projects to be implemented.

Hazards

There were a number of site hazards, including severe flooding, that prevented access to some areas. Introduction of significantly stronger compressed mud block foundations helped to mitigate the flood risk in shelters. Beneficiaries with technical supervision, voluntarily dug site drainage channels to reduce flooding risks.



New settlement, in Central Equatoria state, showing a bamboo, wattle and daub shelter (far left), and compressed mud blocks (right).

Photo: Fernando Murillo

“Return back home is easy when someone supports you to build your shelter.”

Beneficiary, Central Equatoria State.

Technical solutions

Shelters had a single slope for the roof to improve water harvesting. This design was replicated by other returnees who were not beneficiaries of the programme. A small water tank, that could later be upgraded by homeowners, was provided with every shelter.

The shelter could be expanded with a veranda and an external kitchen to reduce the health risks of smoke from cooking indoors.

Sample shelters were built for the community to examine and comment on. Following feedback, shelters were plastered with burnt oil, Arabic gum and sandy soil.

Different foundation designs were developed for different ground conditions. In poor soil areas, wider foundations were built on top of large stones.

Bamboo model

Initially, shelters were built using poles and bamboo wattle and daub walls. These were relatively quick to build but required significant procurement of timber and bamboo.

Bamboo-based structures required “mudding” to complete and seal the walls. In a number of cases beneficiaries used plastic sheeting for walling instead.

Shelter costs rose during construction due to rising bamboo prices and unplanned transport costs of soil and water for mudding.

Due to the local environmental impacts of using timber, and new conditions set by the government to protect timber sources, it was decided to switch away from these materials.

Compressed mud blocks

Government representatives were aware of a project in the Republic of Sudan which used stabilised soil blocks (SSB) and expressed an interest in this alternative. SSBs had been used for public buildings but were too expensive for domestic purposes.

Using the same press, and mostly black cotton soil, it was possible to make compressed mud blocks without a cement stabiliser.

It was possible to produce 400 compressed blocks a day. While the technique is slower than traditional mud brick production (1,000 per day) it used much less water.

The government was positive and felt that the technique created a new type of industry.

Mud-blocks were less prone to attack by insects compared to bamboo, and enabled construction of strong, load-bearing walls. They were cool by day and warm by night, and did not have to be transported over long distances.

The project also demonstrated to each community how blocks could be used for energy efficient ovens.

The introduction of compressed mud-blocks in 2012 resulted in different reactions from communities.

In some areas, people already built using dried mud-blocks. In other areas the technique was new. In some cases there was resistance to the use of the blocks, as production involved considerable heavy labour. The introduction of the block presses and the realisation

that mud-blocks were a relatively efficient material in terms of water use, led to a more positive view of the mud-blocks.

The holes left behind by the production of mud blocks were an issue in some areas, and more effort could have been made to combine drainage digging with mud block production to facilitate a more efficient use of both labour and soil.

In the first year of using compressed blocks, 500 fewer shelters than planned were built, and the project had to return to the bamboo design instead.

Logistics

Bamboo and compressed mud blocks were procured or produced locally. Plastic sheeting and iron-mongery were imported.

Materials list

Materials	Quantity
CSB (mud) blocks (foundation)	414
Polythene sheet (1m wide)	15m
CSB (mud) blocks-walls/columns	1034
Corrugated iron sheets x 4m	8 pieces
Timber 125mm x 50mm x 4m	4.2 pieces
Timber 100mm x 50mm x 4m	2 pieces
Timber 100mm x 50mm x 4m	4 pieces
Timber 75x50mm x 4m	11 pieces
Timber 50x50mm x 4m	4 pieces
Galvanized drainage zinc 2m	2.5 pieces
Hoop Iron (50m roll)	20m
Nails 4"	2kg
Nails 3"	2kg
Nails 2.5"	1kg
Galvanized spiral roofing nails 3"	2kg
Hinges and bolts	5+1 pieces
Chicken wire	1 piece
Cement (plastering) (1/6 cement/soil)	2 Bags
Soil/sand for mortar	1m ³
Anti termite treatment	2 litres

A.30 Thailand – 2011 – Bangkok Floods

Overview: **Keywords:** Non-displaced, Collective centres, Hosting, Urban neighbourhoods, Guidelines and training materials, mass communications.

Summary

During the 2011 floods in Thailand, social media became a crucial tool for information-sharing and decision-making, both for those affected by the floods and for agencies responding to needs.

The use of social media presents challenges in terms of filtering useful information from misinformation, the reliability and accountability of those distributing message, and identifying communication channels and strategies which will reach specific target groups. Some people may not use social media at all.

This overview draws particularly on two publications: "The role of Twitter during a natural disaster: Case study of 2011 Thai Flood," in Technology Management for Emerging Technologies (PICMET) and "Flooding in Thailand: flee, fight or float", Forced Migration Review No. 41, by Wan Sophonpanich.



This animated video explained the floods, and whether people should stay or evacuate, using whales to help explain the volume of flood waters. It has received over one million internet hits.
Images: Roo Su Flood

Background

A combination of a heavy rainy season and tropical storms caused the worst flooding Thailand had seen for fifty years. Over five per cent of the country's land was under water by November 2011 and the flooding had affected 13 million people and caused 813 deaths.

A novel way of thinking about the volume of water that had accumulated and needed to be dispersed was presented by the animation group *Roo Su Flood* (Know, Fight, Flood).

The billions of litres of water was calculated to be the equivalent of 50 million blue whales, and Roo Su Flood made a popular online animation which explained the impact of the floods in terms of these millions of whales slowly trying to make their way out of the country and into the Gulf of Thailand.

(www.youtube.com/roosuflood)

Response options

As the floods slowly moved towards Bangkok and its surrounding areas, people began to make contingency plans.

Despite the scale of the floods and the number of people affected, the capacity of the Thai authorities, national NGOs, community groups and individuals to deal with problems meant that international organisations played a relatively small role in the response.

Flooding does not automatically lead to displacement. In fact, Thailand's traditional building designs historically coped with floods by allowing water to flow through the bottom floor of a house while the family retreated upstairs to wait for the water to disperse.

However, in many urban areas of Thailand the traditional cultural capacity to mitigate the effects

of flooding has been lost. Those caught up by the flooding can be categorised into the following groups:

- **Precautionary displaced:** People sealed-up their houses and garages and moved away from risk areas until the water levels dropped.
- **Emergency displaced:** People forced to move to collective centres or friends once the flood swamped their homes.
- **Stayed with simple precautions:** People living in areas where flooding is more frequent were able to withstand flood heights of two to three metres, with minimal assistance needed to replace their temporarily lost livelihoods.
- **Stayed with advanced precautions:** People with considerable resources built flood-defence walls,



Livelihoods were most affected for those who chose to relocate. For most people, daily life continued despite the flood waters.

Photo: Thanchanitch Suttichote/IOM Thailand

sandbagged entrances, installed water pumps or bought motor-boats. People in this group often helped out in their neighbourhoods.

- **Stayed with high level of need:** People who chose not to move but lacked the ability to cope with the consequences of the flood and relied on external assistance.

People who relocated sometimes found that they had under-estimated the impact of the floods and were forced to stay away much longer than they initially planned. This had knock-on effects for their livelihoods.

Some of those moving to collective centres were displaced for a second time when the centres themselves flooded.

Information flood

Information was available from a huge number of different sources: the private sector, print and online media, the government, NGOs and informal social media.

The founder of the animation group that produced the Roo Su Flood series, explained how the animations were a response to the difficulty in picking out useful information from misinformation.

Information was not only being communicated by a multitude of different actors but was also

competing for attention.

In some cases, for example, politicians offered different advice and assessments with political point-scoring in mind.

“We are not only being flooded by floodwaters, but also by information.”

Reliable information?

Twitter usage in Thailand soared by 20 per cent between September and October 2011. A research paper published in 2012 analysed the most prolific tweeters and most re-tweeted tweets.

The study showed that the content of tweets with the hashtag ‘#thaiflood’ overwhelmingly concerned situational announcements and alerts (39 per cent). Support announcements made up ten per cent, requests for assistance accounted for eight per cent of tweets and requests for information five per cent. 37 per cent of tweets were categorised as “other”. The study found that the majority of the situational and location-based information was tweeted by members of local communities.

To identify which Twitter users were seen as providing reliable information the study looked at the number of retweets users received.

Those retweeted the most were not necessarily those who tweeted the most or had the most followers.

Those with the most retweets included:

- **Thaiflood / kapookdotcom:** These accounts tweeted information from the private sector site thaiflood.com. Thaiflood.com became a major source of information, with an active community and facebook page, and also collaborated with Google’s Thailand Floods Crisis Response site.
- **SiamArsa:** An account belonging to one of the largest volunteer groups. It used Twitter and Facebook to share information about flooding and volunteer work.
- **GCC_1111:** The account belonging to the official government website for the Flood Relief Operation Center (<http://floodthailand.net>) which also facilitated the posting of assistance requests.

Lessons to learn

Using and monitoring social media is an important part of disaster response in today’s world. An active analysis of the data can help prioritise communication channels and displacement patterns, while coordinated messaging can reduce panic and misinformation.



Some people moved to evacuation centres, where emergency support was available, often from volunteer group. However the majority of people decided to stay. Photo: Thanchanitch Suttichote/IOM Thailand

The two reports in the summary note the following learnings:

- **Verification:** It was not always possible for people or agencies to easily identify misinformation.
- **Accountability:** Those actors giving advice did not always consider how they might be accountable for the messages they sent out.
- **Rights and responsibilities:** Knowledge and understanding of humanitarian principles and codes of good conduct was often overlooked.
- **Simplicity:** The popularity of Roo Su Flood demonstrated that there was an appetite for easily understandable messages communicated in novel ways.
- **Context and target audience:** The audience for the messages should be made clear. For example, providing information on how to seal up a door may be technically correct for low-level flooding but inappropriate and dangerous in high-risk areas.

Of course, not all the electronic information is available to everyone, and communities with little or no access to the internet not only had less access to information, but were also less able to vocalise their needs.

This is particularly true of highly-excluded groups, such as migrant workers. The migrant workers not only had less access to electronic information due to language issues, but may also have had less access to the support available to Thais. There were reports migrants were denied access to some collective centres and relief items.



Collective centre in a university. Photo: Thanchanitch Suttichote/IOM Thailand



Most people decided to stay in their houses with various levels of precautions against the flood waters. Some vulnerable people did not relocate and did not have access to the electronic information, and required special assistance. Photo: Wan Sopphanpanich

A.31 Tunisia – 2011 – Conflict in Libya

Update: **Keywords:** Planned and managed camps, Resettlement, Household NFIs, Emergency shelter.

Country:

Tunisia

Conflict:

Conflict in Libya

Conflict date:

February 2011 - October 2012

Number of people displaced:

1,000,000

Project target population:

200,000

Project outputs:

Camp with a capacity of 25,000
200,000 people pass through site during project timeframe



Project timeline



Project description

A transit camp was established to assist refugees and migrants fleeing the conflict in Libya. The camp was rapidly established in partnership with the Tunisian authorities and housed a population with more than 60 nationalities mostly for only short periods. The camp management worked closely with organisations providing support for the repatriation of displaced people to ensure that people had a smooth transit from the camp to return locations.

Strengths and weaknesses

- ✓ The organisation was able to work together with the authorities to rapidly establish camps to cover emergency needs.
- ✓ The camps dealt with the complexity of sheltering people from different nationalities by establishing separate sectors for the major nationalities and an overflow sector for minority groups.
- ✓ The organisation worked with fourteen other national and international organisations to provide assistance.
- ✗ Tents initially provided had a very short lifespan and were difficult for people to assemble. They were also poorly suited to the climate.

- ✗ Latrines, showers and water taps were not readily available during the initial phase of the emergency.
- ✗ The lack of a rapid shelter solution that was more durable than tents greatly hampered the ability of the organisation to assist beneficiaries in a timely and efficient manner.
- construction of durable shelter solutions could not be considered given the temporary nature of the transit camp.



Shousha camp was established in Tunisia near the Libyan border. It had a capacity of 25,000 people, with tents provided as shelters. Most of the camp residents were foreign nationals. The majority travelled onwards to their home countries. Photo: A. Branthwaite / UNHCR

Background

The conflict in Libya, began in mid February 2011. It caused a mass exodus of migrants and refugees from Libya. The majority of fleeing Libyans found refuge in Tunisian homes and public institutions.

The first groups of non-Libyan nationals sought shelter in Tunisian public institutions. However, the majority the Tunisian authorities and civil society groups stated that a refugee camp setting would be more suitable for providing necessary humanitarian assistance.

Site selection

The Tunisian military set up an emergency field hospital 9km from the border with Libya when the conflict erupted. The hospital was as a result of concerns that a large number of war wounded individuals would be crossing the border into Tunisia.

The Tunisian authorities requested that the United Nations establish a transit camp (later named Shousha camp) next to the field hospital in order to host and assist thousands of predominantly migrant workers fleeing Libya. The displaced would stay in this camp while waiting to be repatriated to their countries of origin. International organisations did not have a say in the location of the site.

As Tunisia had itself experienced a revolution, the political situation was volatile. The large number of displaced people entering Tunisia meant that the United Nations had no choice but to accept the available option of establishing the camp at the site designated by the Tunisian

authorities. Neighbouring countries like Algeria and Egypt refused to set up camps within their own borders.

Site planning

In the first days of the emergency, the military liaison officer and the international organisation's field unit jointly conducted the site planning. During the first few days, Shousha camp hosted more than 20,000 migrants, predominantly single men from various nationalities. No WASH facilities were available during the first days of the crises.

In the first 24 hours, attempts were made at separating groups by nationalities. However, the attempts failed and Shousha camp accepted large numbers of single men without much organisation.

At this early stage, Shousha camp did not conform to international camp management standards. However, emergency tents, water, medical assistance and food were provided.

As a result of the mixed populations, numerous problems arose amongst camp residents. Coming from very distinct cultures, religions, ethnicities and lifestyles, the camp residents frequently bickered over space and access to humanitarian assistance. The most visible proof of the tensions were the frequent conflicts that arose between communities during food distributions.

In May 2011, a major fire burned down most of Shousha camp. The camp management organisation, operational and implementing partners and the camp

population rebuilt Shousha camp with a much more organised separation of nationalities and ethnicities in order to reduce conflicts and challenges to cultural sensitivities.

Humanitarian assistance and camp services were provided to each community separately, with each community allocated its own food distribution points, water points and sanitation facilities. Distribution points were also strategically placed to reduce conflicts and to ensure that adequate humanitarian assistance was provided in a secure environment.

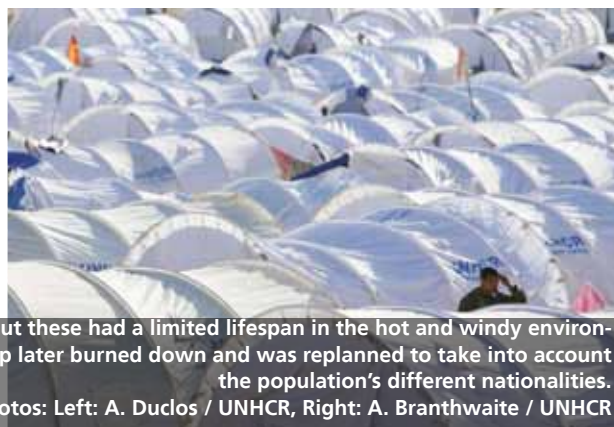
Not every nationality and ethnicity could be accommodated in a separate sector and therefore sector E was created to host minority groups. Communities were given the option to have a separate section for families in their sector.

Site construction

The site was initially constructed by the military who levelled the ground and provided some lighting. The erection of the tents was completed by the military, the two international organisations and the camp residents. Eventually, a local company was contracted to erect tents.

Partners and other international organisations contracted local companies to build sanitation infrastructure and the water network in the camp. International and local organisations provided food.

Additional camps were built by other organisations at nearby locations between March and April 2011.



The camp was originally built using light-weight tunnel tents, but these had a limited lifespan in the hot and windy environment, and were replaced with heavier canvas tents. The camp later burned down and was replanned to take into account the population's different nationalities.

Photos: Left: A. Duclos / UNHCR, Right: A. Branthwaite / UNHCR

Coordination

During the first week of the crisis, the United Nations Disaster Assessment and Coordination team supported daily field coordination meetings in the camp. The organisation also led daily coordination meetings in Zarzis, about 1.5 hours drive from Shousha camp, where all international stakeholders were located.

After the first week, various working groups were formed. Because the response was based in a camp, all working group representatives were present during camp coordination meetings. As the crisis subsided and the camp population diminished, coordination meetings were reduced to once per week and then once per month.

This emergency response involved an exceptionally high level of cooperation with local authorities in general, and the Tunisian army in particular. The Tunisian army acted as the main humanitarian interlocutor, and, in addition to providing security, had a key role in the building of the camp and in the provision of humanitarian assistance (food, shelter and health).

Population movements

In the first two weeks of the emergency, migrants and refugees were mostly transported from the border to the camp by public transport buses mobilised by the Tunisian authorities and civil society. Later international organisation rented buses to carry out this work. Some migrants were forced to walk to the camp during the days where the influx reached its peak.

Some convoys were also organised from Libya into Tunisia. Migrants and refugees were mostly received in Shousha camp. Once the other camps were established, they also received people fleeing Libya.

An arrangement was established to receive migrants from specific nationalities in the different camps. However, this arrangement did not fully succeed given the limited capacity of the other camps, and there was a frequent overflow back into Shousha camp.

Once their return had been organised, camp residents were driven to the airport to be repatriated. All camp residents received humanitarian assistance.

Shelter solutions

Initially, lightweight white tunnel tents were used. These tents proved to be too complicated to construct in a very fast evolving emergency with thousands of migrants and refugees entering the camp during the first days and nights of the emergency.

The tents were also very fragile, breaking very easily. They did not have any exterior shading and were blown away by the wind. After a few weeks, the white tunnel tents were replaced by heavier green canvas tents. These tents were easier to build and a little more robust. However, the roof pole (horizontal beam) was weak and regularly broke.

These tents were also blown away by strong winds and did not have sufficient shading.

A third type of tent was later introduced, and performed much better in the harsh conditions, though they remained technically difficult to erect.

Core relief items such as blankets, quilts and jerrycans were adequately pre-positioned and distributed. Mattresses also distributed and proved to be very useful.

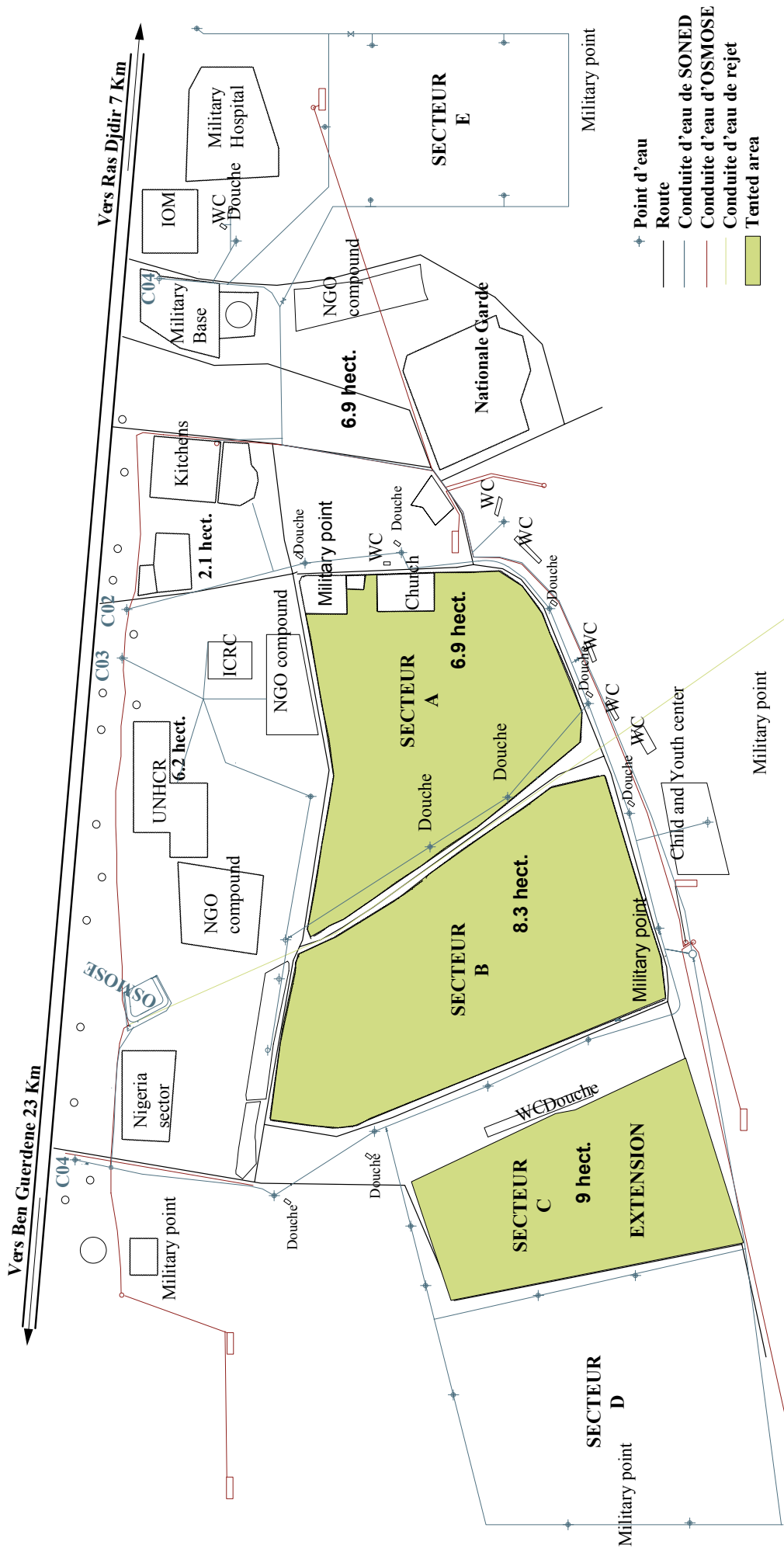
The organisation found itself obliged to set up a very costly electricity grid in the camp which continues to be difficult to manage since the network is constantly tapped into by camp residents.

Exit

By the end of 2012 around 1,200 refugees and asylum seekers remained in the camp. The majority were awaiting resettlement, some within Tunisia. In addition, around 200 rejected asylum seekers remained in the camp. The organisation was in discussion with the Tunisian authorities to find a solution for this group since it was outside of the organisation's mandate to assist them.



Border crossing early in the response. The camp was established near the site of an emergency field hospital 9km from the border. Photos: Left: A. Duclos / UNHCR



1 hect. = 10,000m²

Camps Réfugiés Choucha		Plan Réseaux	
		Ben Guerdene, TUNISIE	
DWG 002-2/11	23-04-2012		

Site plan for rebuilt Shousha camp after the fire. Infrastructure and water supply networks are superimposed. As there were over 60 nationalities present in the camp, not all groups could have their own sector, and Sector E was created to host minority groups.

A.32 USA (Chicago) – 1871 – Fire

Case Study: **Keywords:** Non-displaced / returns, Hosting, Collective Centres, Household NFIs, Construction materials, Transitional Shelter, Rental support, Cash, Guidelines.

Country:

USA

Project location:

Chicago

Disaster:

Great Chicago Fire

Disaster date:

8th to 10th October, 1871

Number of houses destroyed:

18,000 buildings

Number of people displaced:

100,000 left homeless (a third of the population of Chicago)

Project outputs:

45 per cent of the homeless were assisted by Chicago Relief and Aid Society

8000 one-room "isolated houses"

6,000 free rail tickets out of town

Four barracks housing 1,000 families

families

Shelter size:

17.8 m² for 3 people or less

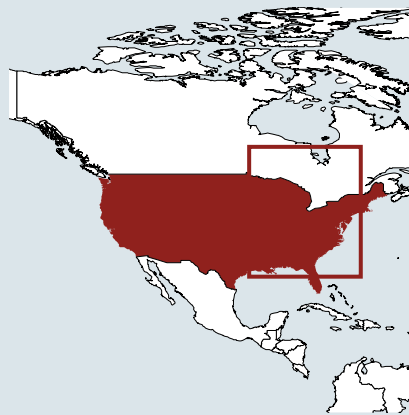
29.7 m² for more than 3 people

Materials cost per shelter:

US\$ 125 for materials and basic

non-food items (approximately

US\$ 2,375 at today's prices)



Project timeline

1874 –	– Society officially finishes its work, having received US\$ 5m in donations
20 months –	– Jubilee week to celebrate the city's recovery
8 weeks –	– 15,000 families provided with food, fuel or shelter
6 weeks –	– Estimate of relief costs for the first 6 months of approximately US\$ 4m (US\$ 800m at today's prices)
1 month –	– Of 6,259 applications for isolated houses, 4,564 had been approved
2 weeks –	– Barracks erected. Distribution of materials for "isolated houses" begins
1 week –	– Responsibility for relief transferred to the "Chicago Relief and Aid Society"
8-10 October 1871 –	– Disaster date

This is one of an ongoing series of "historical" case studies to show how thinking on humanitarian sheltering has evolved. (see also *Section D* of *Shelter Projects 2008*, *Section C* of *Shelter Projects 2009* and *Section C* of *Shelter Projects 2010*)

Project description

The response included non-food item distribution, the building of barracks and one-room shelter construction. The response was administered by the Chicago Relief and Aid Society, a voluntary body, first established with the aim of supporting the poor in areas that the local authorities could not or would not support. The Society used a "scientific charity" method, employing paid professionals to carry out the policies of the executive board, emphasising the importance of public health issues and encouraging self-reliance amongst recipients of aid.

Strengths and weaknesses

- ✓ Use of a non-political, voluntary body as relief administrator reduced potential for corruption.
- ✓ Prioritisation of key-worker support ensured reconstruction work was not hampered.
- ✓ Support of beneficiaries in having their own shelters, rather than living in collective centres, kept the "dependent" population low.
- ✓ Use of relief as economic stimulus meant recovery was reasonably fast.
- ✗ Moralising approach to shelter response. Beneficiary selection was based on class and "worthiness" and not necessarily on need.
- ✗ Long-term sustainability of shelter solutions not fully

considered. Many temporary homes were still used but were in poor condition years later.

- ✗ The Society held on to a surplus of funds through periods of severe economic difficulty, including when protestors marched on the Society's offices in 1873 shouting "Bread or death!".

- Many of the challenges faced by the Society are similar to challenges faced today.

- Chicago benefitted from being economically important and reconstruction began quickly. Over 200 stone buildings were under construction within two months of the fire

- The relief response was aided by the swift arrival of donations from other States and even overseas.



Before the fire

The city of Chicago had a population of around 300,000 people. The city was a growing manufacturing centre. Chicago was known for its leadership and innovation in public health issues, largely due to the activities of the Chicago Relief and Aid Society.

Many of the working classes of Chicago lived within the city limits. The city centre was a mix of expensive stone buildings and cheap wooden-frame houses.

Fires were common in Chicago. The City Fire Marshal reported earlier in 1871 that the previous 12 months had seen 600 fires.

After the fire

The Great Chicago Fire started on the evening of Sunday 8th October 1871. After two days, the fire burnt itself out and rain helped douse the flames.

The fire destroyed nine square kilometres of Chicago, making a third of the population homeless and destroying 18,000 buildings and 200km of wooden pavements. Around half of the damage was insured, but as several insurance companies were burnt out, perhaps only half this was ever paid out.

Those people living in cheap or rented accommodation lost everything.

However, some important parts of the city remained intact, including its heavy industries and its rail infrastructure.

Coordination

In the immediate panic, during and after the fire, there were concerns about public order. The mayor imposed martial law.

Five days after the fire had begun, the mayor handed over responsibility for the administration of relief and reconstruction to the Chicago Relief and Aid Society.

The Society immediately divided itself into eight committees forming a structure not dissimilar to today's coordination systems.

Response

The Society offered different types of shelter and non-food item support:

- 6,000 free rail tickets to those wishing to leave the city
- 8,000 one-room shelters, "isolated houses"
- Barrack accommodation with furniture for 5,000 people
- Rental payments at US\$ 10/month (US\$ 190 equivalent today)
- Furniture, stoves and fuel to families that did not require other shelter support.

The early policy of offering free train passes out of Chicago to allow

people to relocate was quickly stopped as the Society felt that too many skilled workers necessary for reconstruction work were leaving.

Selection of beneficiaries

Selection of beneficiaries was informed by class, skillset, ability to work and vulnerability.

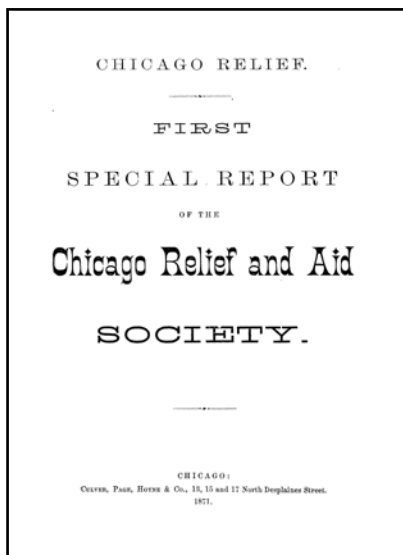
Although the vulnerable were a priority, the Society felt that the "workshy" did not fall into this category. In a Society report the "St. Paul's Rule" is mentioned:

"He who does not work, neither shall he eat."

The two main shelter solutions, barracks or isolated houses (one-room timber-frame shelters), were allocated more or less on the basis of class. Those from the lowest social groups were housed in barracks.

The isolated houses were reserved for skilled workers or the "respectable" labouring poor, who were needed for reconstruction work and who the Society felt needed a home of their own to maintain their pride and prevent their morals from slipping.

Beneficiaries had to "make an application" to receive the materials to build. In most cases, the isolated house was donated by the Society. In cases where they believed the family to have sufficient financial



The Chicago Relief and Aid Society coordinated the response. The quotes here are taken from their own reports.

resources, recipients were asked to pay back 75 per cent of the value of the shelter over one-year, interest-free.

A "Bureau of Special Relief" was set up to seek out those too proud to ask for assistance. A mechanism was set up to enable this class of beneficiaries to:

"Seek relief where publicity could be avoided, and the shock be lessened to their sensitiveness and reserve."

Barracks

The Society decided that the number of people living in barracks should be limited:

"So large a number, brought into promiscuous and involuntary association, would almost certainly engender disease and promote idleness, disorder, and vice."

The Society was worried that housing people in barracks would reduce their incentive to work, endangering the moral wellbeing of the whole city. This meant that schools and churches that had been used as temporary collective centres were closed as soon as possible.

The cost for housing a family of five people in barracks, including the provision of furniture, was calculated as US\$ 80 for six months, not including food and fuel.

Barracks inhabitants were:

"Under the constant and careful supervision of medical and police superintendents, their moral and sanitary condition is unquestionably better than that which has heretofore obtained in that class."

Implementation

The Society divided the city into districts and then established a series of charity bureaus responsible for assessing beneficiary claims. The supply depots were connected by telegraph.

Beneficiaries were constantly monitored, and each person had his or her own "ledger" completed by a Society representative. Assessors reported in turn to their superintendent, who reported to the General Superintendent. Included in each ledger was the amount of relief supplied and *"whether they are idle or industrious"*.

After five weeks, the Society had a "clerical force" of 498 people at district-level, 111 people working on warehousing and distribution and 34 people working on the planning committees.

In the end, the Society supported around 45 per cent of those affected by the fire with shelter.

Beneficiary feedback

The Society set up a mechanism for beneficiary feedback by placing an advertisement in all newspapers for people to contact the Superintendent of the Chicago Relief and Aid Society with details of cheating or overlooked beneficiaries.

DRR and suburbanisation

New fire regulations were proposed in November 1871 largely banning wooden houses within the city limits, meaning that only the wealthy could construct houses in the city centre. Despite protests, they were eventually passed but without effective penalties for breaking the rules.

Chicago faced further notable but smaller fires in both 1873 and 1874. Stricter safety codes were not put in place until insurers threatened to boycott the Chicago

property market.

The fire led to the suburbanisation of Chicago. New buildings and fire-safety codes led to many working class families moving to new plots in the suburbs. The building of the "isolated houses" outside the city limits was encouraged by lower land prices and a policy that exempted wooden buildings outside the city limits from taxes.

As only richer families could afford the stone buildings that conformed with new fire safety regulations, the centre of Chicago became the business and commercial district, with accommodation for the wealthy. The Society did not appear to find this situation problematic at the time, but several years later the new suburbs of small wooden houses had in some places become overcrowded tenements.

Technical solutions

The Society provided two types of house: a larger 20' x 16' (29.7 m²) model for families of more than three people and a smaller 12' x 16' (17.8 m²) model.

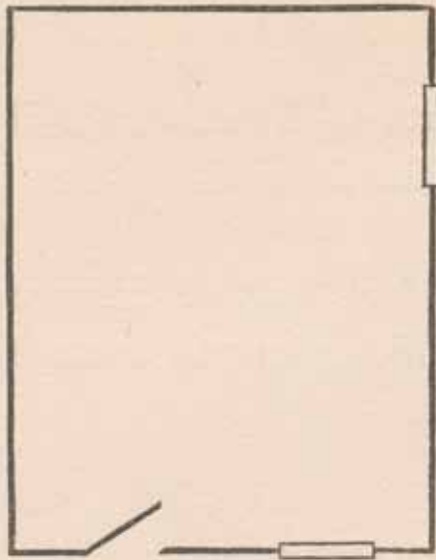
The house design was a wooden structure with a double iron chimney. Walls were lined on the inside with thick felt paper.

Along with the materials for the house, the Society provided chairs, a table, a bed, bedding, a stove and kitchen equipment. The total cost of the materials and non-food items was US\$ 125 (approximately US\$ 2,375 at today's prices).

The houses were designed to be erected by the families themselves, possibly with the assistance of professionals that the family would pay for. If the beneficiaries were *"widows, the infirm or otherwise helpless persons"* then the Society built the house.

The Society assumed that the houses would be improved on at a later date (some families upgraded with second stories or extensions), and provided a screen to allow for the division of the house into two rooms as the family wished.

HOUSE WITH ONE ROOM.

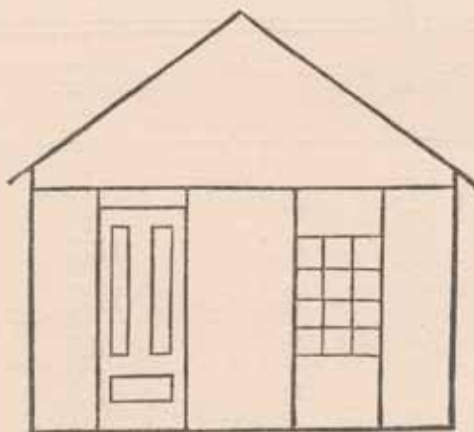


Dimensions.

Size 12 × 16
 Height of Sides 8 feet.
 Studs 16 inches from centres.

Material.

Studs 52 pieces 2 × 4 8
 Joists for 2 Floors . . . 18 pieces 2 × 6 12
 Rafters 10 pieces 2 × 4 8
 Sills 2 pieces 2 × 6 16
 Plates and Ridge . . . 3 pieces 2 × 4 16
 Girders 4 pieces 2 × 4 16
 Sides 500 feet 8 ft. boards.
 Floor 300 feet matched 16 ft. boards.
 Floor Attic, 200 feet rough 16 ft. boards.
 Roof 500 feet rough 8 ft boards.
 Battens 66 pieces.
 Door and Frame.
 Two Windows and Frames.
 Door Trimmings.
 30 pounds 10 d. Nails. 5 pounds 20 d.
 Nails. 5 pounds 8 d. Nails.



Perhaps the earliest recorded drawing and bill of quantities for a one room shelter.
 Source: Report of the Chicago Relief and Aid Society of Disbursement of Contributions
 for the Sufferers by the Chicago Fire, 1874

Logistics

65 million linear feet of timber were destroyed by the fire. Demand for rebuilding was high, and the cost of timber rose dramatically. The Shelter Committee, led by a businessman in charge of one of Chicago's biggest lumber firms, anticipated this and pre-ordered large quantities of timber in the first few days of the response at 80 per cent of the market price that was reached just two weeks later.

The first load of timber was delivered on the same day that the final flames were extinguished.

In the first five days after the fire, 330 rail carriages of goods were received as donations. None of the cars arrived with way-bills. At this point *"the law of humanity was paramount to the laws of commerce"* and most items were distributed without being recorded.

Initially, mainly second-hand summer clothing was available. This could not provide sufficient protection for the winter. The Society supported a number of "Ladies Societies" to produce winter clothes. This employed many women who were otherwise without work after the fire.

Materials list for a shelter

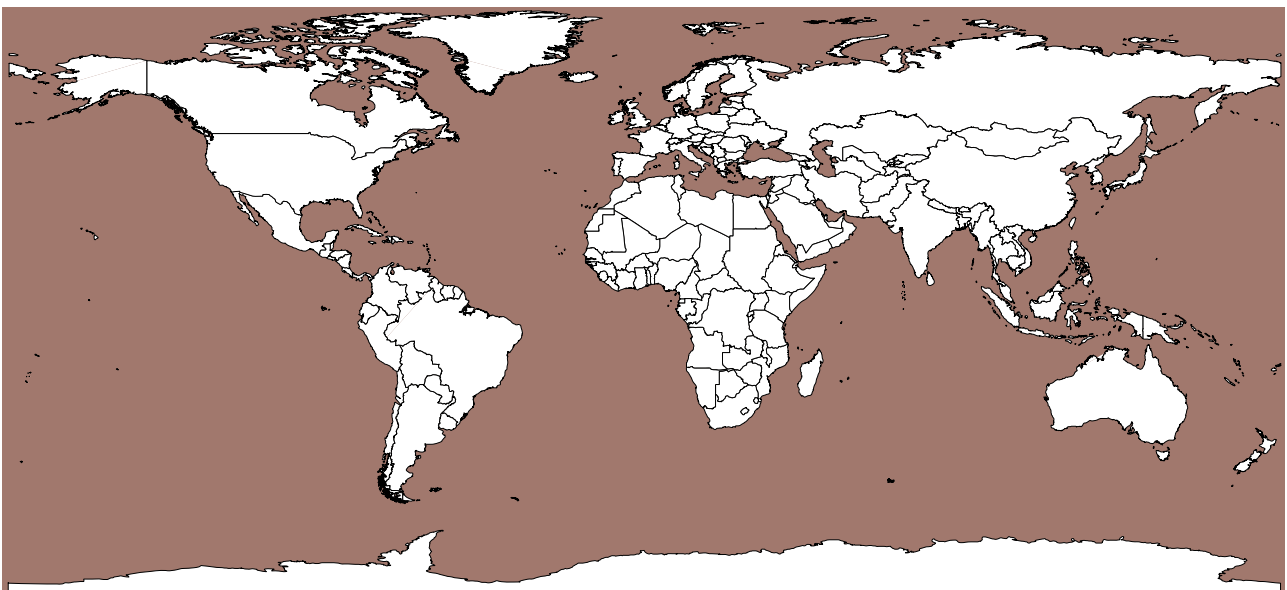
Materials	Quantity
Studs 2"x4" (8 ft lengths)	52
Joists for 2 floors 2"x6" (12 ft lengths)	18
Rafters 2"x4" (8ft lengths)	10
Sills 2"x6" (16ft lengths)	2
Plates and Ridge 2"x4" (16ft lengths)	3
Girders 2"x4" (16ft lengths)	4
Sides (8ft boards)	500ft.
Floor (16 ft boards)	300ft.
Floor Attic (16 ft boards)	200ft.
Roof (8ft boards)	500ft.
Battens	66
Door and Frame	
Two Windows and Frames	
Door Trimmings	
Nails 10.d	30lb
Nails 20 d.	5lb
Nails 8d.	5lb

SECTION B

Opinions

This section contains short discussion documents on various issues in shelter, written by individuals with a specific interests in each subject.

- | | | |
|------------|---|------------|
| B.1 | The History of Three Point Five Square Metres
<i>A review of the origins of the use of 3.5m² as an indicator for covered living space, contrasted with the multiple other indicators that exist.</i> | 104 |
| B.2 | Bankers and Builders:
<i>A review of cash transfer programming in shelter responses.</i> | 106 |
| B.3 | Livestock Sheltering in Humanitarian Situations
<i>An overview of the background and issues in livestock sheltering in humanitarian response</i> | 112 |
| B.4 | A Reflection on the Importance of Settlements in Humanitarian Shelter Assistance
<i>A discussion of the neighbourhoods approach</i> | 115 |



B.1 The History of Three Point Five Square Metres

Of all the numeric indicators commonly used as guidelines in humanitarian shelter response, it is the indicator for covered shelter space that is perhaps the most often quoted – three and a half square metres per person. However, a lack of awareness of where this and other indicators came from has played a part in limiting discussion on the appropriate use of this indicator across all forms of shelter and reconstruction response.

The development of principles and designs for humanitarian shelter started in the early 1970s, when failures to provide adequate support to displaced people in camps resulted in public-health catastrophes, and the reduction in disease-related fatalities was seen as the key improvement to be prioritised above all else. Wanting to avoid repetition of disasters in Biafra and Bangladesh, Fred Cuny and others working for a variety of NGOs, referred back to their own personal experiences in minimum-existence standards for low-cost public housing in Europe and north America, as well as emerging research in non-emergency sites-and-service slum-upgrade projects in Latin America.

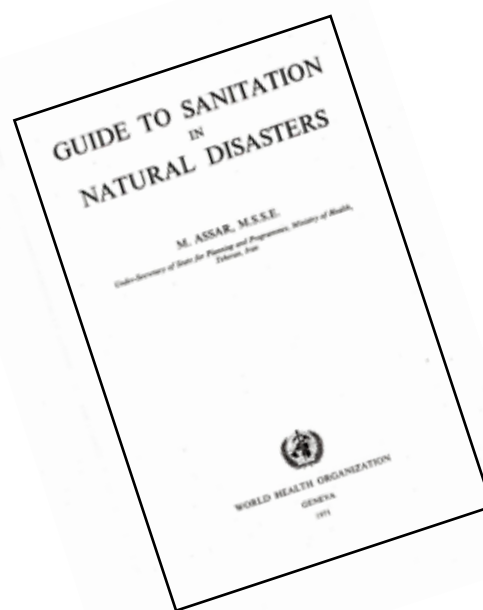
Lessons learnt from the first attempts at community-focused camps in India and Nicaragua, demonstrated that the designs must remain very localised, in order to be culturally acceptable to the inhabitants. At the same time though, there remained the life-and-death challenge of ensuring that everyone in a camp, or in need of shelter support, had the equitable minimum sufficient necessary to actually live. The need to solve this problem was seen as more urgent because with every major humanitarian crisis from the 1970s onwards, the failures of response were made worse by the exponential increase in newly-formed NGOs coming into the field, and the diminishing prospects of giving any sort of personalised guidance to inexperienced organisations or managers.

Cuny and his associates found a short booklet, published for the World Health Organisation in 1971, and written by an under-secretary for the Ministry of Health in Iran, called "*Guide to Sanitation in Natural Disasters*". Here was a seemingly ready-made list of minimum numeric standards specifically for shelter and camps, and with the overriding objective of ensuring adequate public health in disaster situations. For the most part, the booklet does not deal with shelter specifically, but in its list of standards for shelter, lies the standard for covered shelter space – 3m² per person for tents in tent camps, and 3.5m² for buildings. The booklet also offers other shelter standards which have not been adopted more widely since, including one for the actual cubic metres of volume space (rather than just flat floor area), but the author gives no references or evidence to support the shelter numbers. The justifications given for each standard in the booklet come consistently from a public health perspective (the one

reason given for these shelter spatial requirements, is air ventilation, rather than other possible concerns such as climate control, privacy or storage of belongings).

By 1979, with the overwhelming numbers of refugees crossing the borders from Cambodia into camps in Thailand, and institutional fears for the breaking of the principle of "Do No Harm" by another wave of new field organisations, UNHCR regional offices asked Cuny and others to facilitate a series of workshops, with the express purpose of making humanitarian response globally more efficient. Major outputs from these 1980 workshops included the creation of the system of UN 'lead agencies' for each major sector of humanitarian response, the drafting of the first specific book published for emergency responses (UNHCR's Handbook for Emergencies) – and the adoption of a system of numeric minimum standards as control mechanisms, including a number of the standards borrowed from the WHO publication, which included the standard of 3.5m².

During those workshops, there was a debate about the conundrum of applying global standards, when situations and needs were often so vastly different. The analogy used in these debates was once again from the medical perspective – how can doctors have a rigorously universal recommended dosage of medicine on the one hand, and yet still be able to successfully adapt that dosage to each patient's needs on the other? Despite these reservations, the numeric standards were incorporated into the Handbook for Emergencies in 1981, and fifteen years later, despite opposition from some NGOs, had even wider adoption with the first draft publication of Sphere (see www.sphereproject.org).



This document written in 1971 is possibly the first published reference to numerical planning figures for humanitarian emergencies.



"...In the Shelter section [of The Sphere Handbook 2011] of the chapter on Shelter, Settlements and NFIs there are a total of 32 Key Actions, and 10 Indicators, but it is the 3.5m² (which is after all now just part of a Guidance Note) which still gets more attention.."
 Photo: Joseph Ashmore

The first draft of Sphere, in 1998, has only one standard for individual shelter, called 'Housing Standard 1: living quarters' for which the first indicator, and the only indicator with a numeric measurement, was, 'The covered area available per person averages 3.5-4.5m².' As Sphere now clarifies, sometimes this indicator will not be appropriate. There will be situations where 3.5m² per person cannot be met, for example when there are insufficient resources to provide this amount of living space. In such circumstances a pragmatic decision may need to be taken to provide a basic level of shelter for many, rather than meeting the minimum standard for only some. Providing shelter in a cold climate presents another dilemma - 3.5m² per person can be difficult to heat at a time of scarce fuel, or environmentally damaging in an area where using timber for construction leads to deforestation. By the 2004 edition of Sphere, there was a major shift in emphasis, with the guidance notes expanded to include 'Duration', under which Sphere stated that 3.5m² may be appropriate in the first instance, that 3.5m² may be incrementally achieved over time, and that an argument may be made for providing less than this, based upon the shelter norms of the affected or neighbouring populations.

In the latest 2011 edition¹, the Indicators as a section, with all their exact numbers, have been moved further down the page, and their prominence has been replaced by a new section called 'Key Actions'. For the standard on Covered Living Space, both the Key Actions, and for the first time the Guidance Notes, highlight the livelihoods potential provided by adequate shelter. The editions of Sphere subsequent to 2000, have highlighted the qualitative aspects of the standards (compared to what Sphere terms the numeric indicators), and have increasingly emphasised both the incremental process, and the need for localised adaptation of these standards. However, the numeric indicators, despite being pushed progressively further down the page, still exist, and still exist in the project proposals and evaluations for many humanitarian organisations.

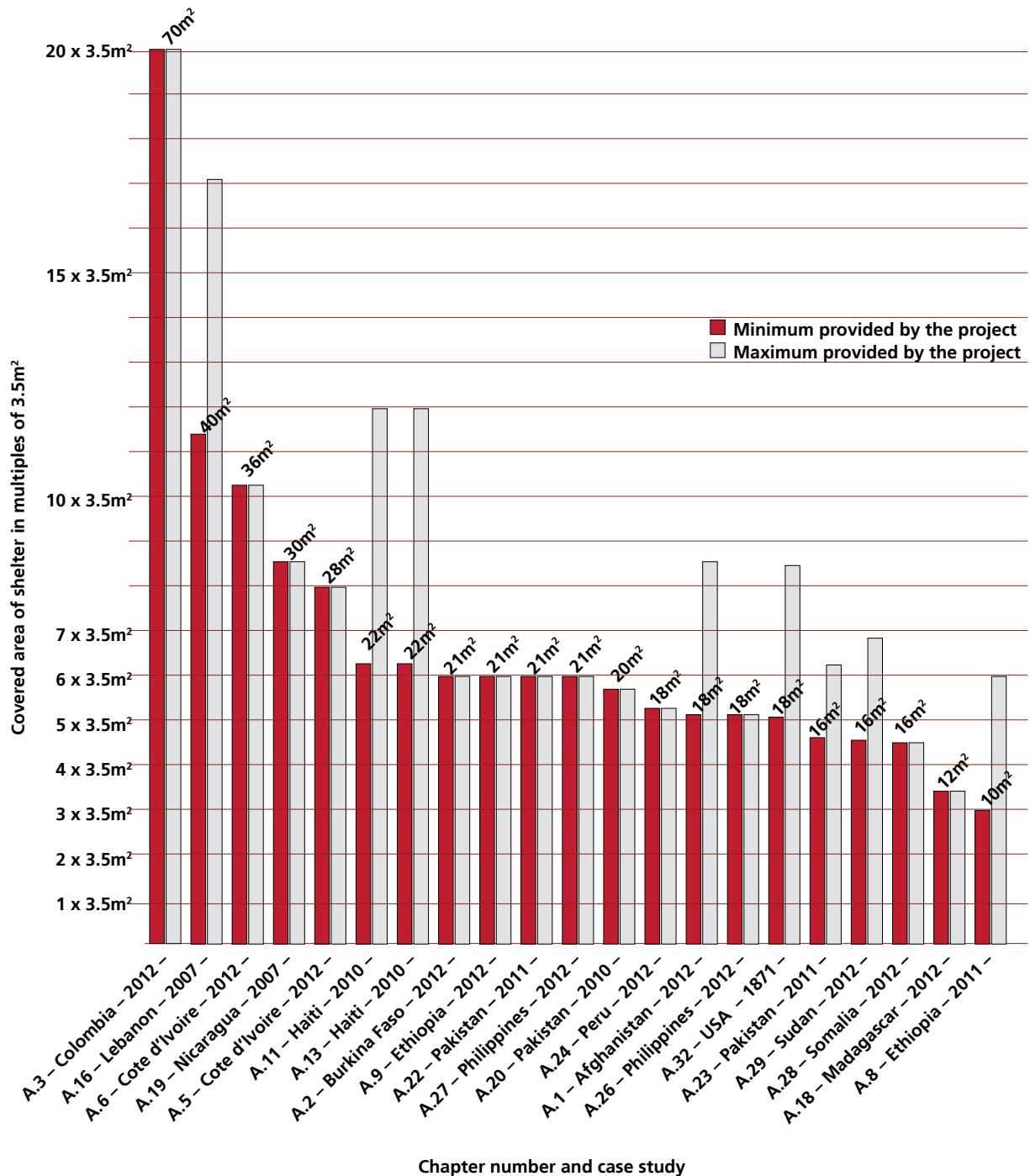
The situation becomes more complex if, as in many cities in both developed and less developed regions, the Sphere minimum standards are better than local living conditions. A further complication, and one which highlights the gap in humanitarian standards in general in not going beyond the individual household, is illustrated by the post-tsunami response in Aceh. Adherence to 3.5m² was a contributing factor in a rapid post-disaster spread of the urban area, through the construction of low-density shelter settlements, into marshlands which would have otherwise provided much of the natural protection for the city, from floods and tsunamis.

In order to determine what is essential it would be more appropriate to apply measures that reflect what shelter does other than just contribute to public health. Shelter can have more impact on areas of humanitarian intervention such as protection and livelihood creation, and indicators that reflect these aspects of shelter impact need to be developed. It would be sensible to reflect these aspects of shelter provision in guidelines for shelter living space. It is telling that for the six Core Standards in Sphere 2011 there are a total of 62 Key Actions, and 27 Indicators, and in the Shelter section of the chapter on Shelter, Settlements and NFIs there are a total of 32 Key Actions, and 10 Indicators, but it is the 3.5m² (which is after all now just part of a Guidance Note) which still gets more attention.

Jim Kennedy
 Charles Parrack

¹ Sphere Project, *Sphere: Humanitarian charter and minimum standards in humanitarian response, 2011*

Reported covered living areas of the shelters in the case studies in this book.



Smaller shelters are often constructed after an assessment of local and host population standards, as well as what is practically possible. Shelter size is not necessarily a good indicator of the quality of a shelter programme, and reflects a diversity of issues, including varying needs, permanency, budgets, logistics constraints, host standards, and official policies.

Note: Covered areas are often reported based on external wall dimensions and not the internal usable space. For example, a 6mx3m shelter with 20cm thick mud block walls will often be reported as being 18m². Practically the usable covered living space will be lower (5.6mx2.6m = 14.5m²).

B.2 Bankers and Builders

The coming of age for cash and shelter projects

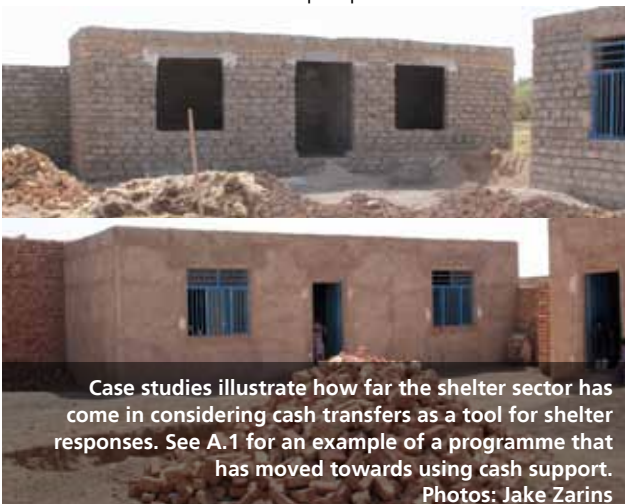
Basic principles

The professionalisation of the shelter sector as a part of humanitarian assistance is often dated to the early 1970s and the work of researchers-cum-practitioners like Fred Cuny and Ian Davis¹. These grand doyens of shelter after disasters helped establish a number of principles for the sector that remain true today, including:

- The aspirations and capacities of affected populations must be at the heart of all settlement planning and shelter reconstruction activities.
- The majority of people displaced by disasters figure out their own shelter solutions, often through the involvement of other relatives, neighbours, or the host community at large.
- To help regenerate livelihoods and provide income to affected households, preference should be given to the use of local labour and local building materials for construction activities.

In the 40 years since these principles of community driven shelter programmes were first espoused, these ideas have been accepted as axioms by the shelter sector as a whole. Yet many of the current debates about the most appropriate shelter solution for affected population are led by architects and builders, not community mobilisers or anthropologists. The first two editions of these case study reports, *Shelter Projects 2008* and *Shelter Projects 2009*, are heavily weighted towards “expert driven” shelter options. Of the 81 case studies in these two volumes, less than 15 per cent refer to shelter projects that included a component that offered affected people a greater choice and responsibilities: the provision of cash transfers directly to beneficiaries.

The case studies in *Shelter Projects 2010* highlight how far the shelter sector has come in considering cash transfers as a tool for shelter responses – almost 50 per cent of the projects cited have a cash component, including an early use of shelter-related cash grants and loans for disaster affected people in 1906².



Case studies illustrate how far the shelter sector has come in considering cash transfers as a tool for shelter responses. See A.1 for an example of a programme that has moved towards using cash support. Photos: Jake Zarins

Cash transfers for shelter

Across all sectors, the direct provision of goods and services to affected populations – in kind assistance – remains the most common form of delivering humanitarian aid. The drivers for in kind assistance among agencies and donors are the same across all sectors: the need for highly visible relief operations; the desire to reduce suffering and disease through quickly launched humanitarian responses; and achieving economies of scale and value for money. There is a growing recognition within the humanitarian community that direct cash transfers to disaster-affected people can help agencies, donors and governments fulfil their mandates and meet public expectations.

As noted in the shelter case studies in *Shelter Projects 2011-2012* and previous volumes, there are two main types of cash transfer methods used in shelter programmes:

• Cash for Work:

- Direct cash payments to beneficiaries for their labour on debris clearance, shelter construction or other community focused infrastructure projects;

• Conditional Cash Grants and/or Vouchers:

- Direct cash payments to beneficiaries or landlords for services defined by agencies or governments; e.g., participating in training programmes; rebuilding homes according to pre-defined plans or construction stages; or rental support;
- A paper, token, or debit card voucher that can be exchanged or redeemed at pre-selected vendors for a pre-determined quantity or value of construction materials or services.

A third type of cash transfer mechanisms used in humanitarian responses is **Unconditional Cash Grants**, where direct cash payments are made to selected beneficiaries (usually the highly vulnerable or poorest) without conditions or requirements. While post distribution monitoring of household expenditures suggest that food, health care, or loan repayments are typical purchases made with unconditional cash grants, there is some evidence to suggest that under certain conditions beneficiaries will choose to spend the money on shelter materials. For example, in Pakistan in 2005, over 95% of earthquake affected households who received a small cash grant (US\$ 40) spent the funds on shelter construction or material transport³.

¹ See C.1 *Shelter Projects 2009*, and D.1, *Shelter Projects 2008*

² See case study B.2, *Shelter Projects 2010*

³ See Humanitarian Exchange Magazine, Issue 34, “Responding to shelter needs in post-earthquake Pakistan: a self-help approach”

Scepticism on cash and shelter

Accompanying the increase in interest by agencies and donors in cash transfers for shelter support programmes is scepticism from some shelter specialists on what is seen as “cash evangelism”. Many of the doubts focus on concerns and perceived risks around unconditional cash transfers and self built reconstruction. How can we ensure, ask the sceptics, that people won't rebuild using inappropriate designs, poor quality materials and unsafe construction techniques if we just give them cash? Fortunately, most mainstream agencies and shelter professionals recognize that cash transfers for shelter projects must be accompanied by technical advice and support, or given in tranches based on a phased approach. Like all humanitarian assistance, however, post distribution monitoring of cash or in-kind assistance is essential to ensure that project goals are met and that the aid given “does no harm” to its recipients.

A second set of concerns on cash transfers for shelter relates to the high cost of safe or safer shelter after disaster. By restricting the number of families who receive cash and shelter assistance, isn't there a risk that social tensions within or between communities will be exacerbated? Does the liquidity of cash potentially increase conflicts between neighbours? While the answers to these questions are possibly yes, humanitarian assistance in all sectors grapple with these questions in each and every response. To date, the best way to avoid these potential conflicts is through coordination, ongoing consultation, and robust accountability mechanisms in place to address community and beneficiary concerns.

Strengths and weaknesses of cash for shelter

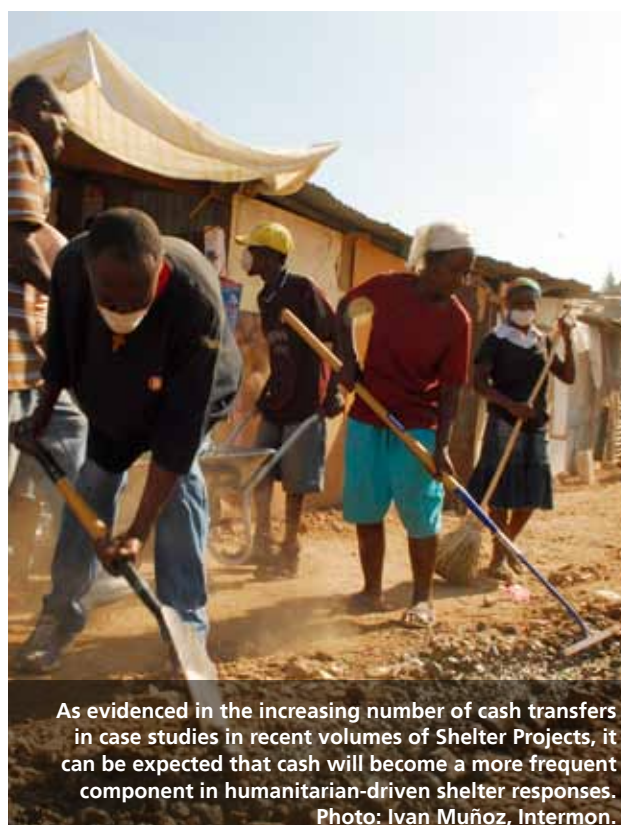
Regardless of the sector, the success of cash transfer interventions is highly dependent upon assessments and a thorough response analysis. Key elements to be considered in shelter programme design using cash as tool are:

- clarity on the programme objectives, and what the shelter programme is trying to achieve within the limits of budgets and time frames
- proper targeting of affected households who are both most likely to benefit from and take advantage of cash transfers programming
- an understanding of household and community economic activity that help inform how cash injections can complement and enhance recovery after disasters
- a market analysis with a sufficient level of detail to know how the disaster or conflict has affected building material supplies, skilled labour, and rental markets, and what might be the negative (inflationary) impact of injecting cash into local economies
- a robust monitoring and evaluation system in place to measure impact and gauge the effectiveness of cash transfers as a programme tool.



“The success of [cash] interventions is highly dependent upon a detailed response analysis.”
Ampara, Sri Lanka.

Photo: Jerry Galea-Oxfam



As evidenced in the increasing number of cash transfers in case studies in recent volumes of Shelter Projects, it can be expected that cash will become a more frequent component in humanitarian-driven shelter responses.

Photo: Ivan Muñoz, Intermon.

		Strengths	Weaknesses
<p>Cash for Work</p>  <p>Cash for Work programme at Tapis Rouge camp, in Port au Prince, Haiti. Phot: Ivan Muñoz, Intermon</p>	<ul style="list-style-type: none"> • Provides a temporary income to affected people, especially vulnerable groups who may not have other sources of income; • Motivates people to participate in relief and recovery operations; • Generally high level of acceptance by authorities. 	<ul style="list-style-type: none"> • Physical labour projects might exclude women and less able-bodied persons; • May create expectations that NGOs will pay people for participation in all relief work; • Could compete with private sector labour; • Cash for Work activities selected may not have strong coherence with shelter activities. 	
	Opportunities	Threats	
	<ul style="list-style-type: none"> • Can help address disaster waste management concerns; • Can link with training programmes to improve building skills and livelihoods. 	<ul style="list-style-type: none"> • Potential health and safety issues; • Quality of work might be poor; • If too high, the wages might discourage normal livelihood activities; if too low, participation may be reduced. 	
		Strengths	Weaknesses
<p>Conditional Cash Grants (including vouchers)</p>  <p>Conditional cash grant used in housing reconstruction. Deah Baro village, Banda Aceh, Sumatra Indonesia. Photo: Jim Holmes, Oxfam</p>	<ul style="list-style-type: none"> • Contributes to economic recovery of local markets; • Cash grants can support access to rental accommodations; • Generally high level of acceptance by authorities. 	<ul style="list-style-type: none"> • Less able bodied and more vulnerable groups may not be able to meet conditions, and will require additional support; • Time commitment by beneficiaries to meet conditions may conflict with seasonal livelihood activities. 	
	Opportunities	Threats	
	<ul style="list-style-type: none"> • Voucher based programmes require close contact with local suppliers, which can help ensure quality in shelter materials; • Setting targets and transferring cash in tranches can support safe onstruction practices • Cash grants to host families can reduce their financial burden and facilitate camp decongestion. 	<ul style="list-style-type: none"> • Increased demand for shelter materials may outstrip local supplies; • Possible inflationary impact on prices by creating high demands for shelter materials. 	

The Future of Cash and Shelter

As evidenced in the increasing number of cash transfers in case studies in recent volumes of Shelter Projects, it can be expected that cash will become a more frequent component in humanitarian-driven shelter responses. With the proliferation of mobile phone access throughout the world and the increase in security of mobile banking transactions, future cash and shelter programmes are likely to be more digitally oriented than what we see now. In other humanitarian sectors such as Water, Sanitation and Hygiene Promotion (WASH), mobile phones are increasingly used to reach wider audiences with key messages and as project monitoring tools. For a sector such as shelter, where hazard reduction principles and “building back better” are the new axioms, the potential of combining mobile phone technology and cash programming are yet to be explored.

While bankers may not have the skill set that agencies and donors look for to help guide cash and shelter programmes, the architects, engineers and builders of the shelter community would be wise to include cash transfers as a potential instrument in their tool box. As with all innovations, however, care must be taken to avoid cash transfers as the default option for all shelter programmes. Builders and bankers alike know the truth to the old adage: if the only tool you have is a hammer, all problems look like nails.

Rick Bauer,
Engineering Adviser and trainer in the use of cash and market assessment tools,
Oxfam GB

B.3 Livestock Sheltering in Humanitarian Situations

Background

Livestock have been sheltered within household infrastructure for hundreds of years. Vernacular buildings in many less developed countries still contain provision for livestock. Fences and bushes within a household plot of land are also traditionally used to shelter livestock. For example in Gujarat, India, thorny fences of *Acacia Arabica* are used to protect the buffaloes. In Sri Lanka, fences of wood and wire are used alongside sheds made of wood or bamboo, roofed with grass or leaves.

In less developed countries, livestock are often people's largest capital asset and keeping them within the household plot is the most obvious way of protecting that asset. Wherever people find shelter, they attempt to make provision for their animals to live close to their dwelling, especially if their livelihoods depend upon them.

Why consider livestock in a shelter response?

Livestock are important to people for a broad range of reasons. They are a key wealth asset acting as a bank account in areas where people have no other means of storing financial capital. Livestock are also important for livelihoods dependent on animal produce and labour, transporting goods and people, providing milk and meat, cultural activities and personal security.

In less developed countries where humanitarian assistance is required post disaster, up to 70 per cent of resource-poor people rely on livestock for their livelihoods. This dependence, coupled with the potential advantages of linking emergency responses with recovery and development programmes, gives a window of opportunity for emergency shelter actors to incorporate a sustainable livelihoods approach at the emergency phase. Assessments of livestock shelter needs could be carried out as part of broader shelter needs assessments.

Designing livestock shelters is one of the simpler parts of an overall shelter response. Support for the construction of sheds, covered areas or secured external spaces can be provided or enough space can be left in settlement planning for people to build these themselves. Livestock sheltering should include consideration of access to grazing, fodder production, environmental impact, vaccines and quarantine. Failure to do so can lead to weak shelter that can be damaging to animal and human health, and is not locally sustainable.

Livestock in shelter responses

Shelter solutions for livestock are seldom seen as a priority by responding organisations during the first stages of an emergency. This is often due to the assumptions that livestock sheltering is a cost at the

expense of human needs or a lack of consideration of livestock shelter needs at all. Planning for livestock shelter need may not incur an additional cost, and will help mitigate issues arising from livestock and people living in close proximity.

A few examples do exist, such as the response to the 2005 Pakistan earthquake, where shelter for livestock has been built by external organisations. More common are accounts of how disaster-affected people make provisions for their livestock themselves, often using the materials that organisations have intended them to use for sheltering their family.

In cold climates, such as northern Pakistan, there is greater consideration of livestock shelter needs as part of a sustainable livelihood solution. In warm climates,



"Livestock have been sheltered within household infrastructure for hundreds of years."

Top to bottom: European farmhouse with space for cattle underneath. Goat shed attached to main house in Sri Lanka. House in Vietnam with pigs sheltered under the raised floor.

Photos: Top Julia Macro, Below Tim Leyland



such as in Haiti post-earthquake 2010, the need to shelter livestock from the elements was reduced. In very hot climates, however, there may be a need for shade which people often take their own steps to find or create.

The argument for sheltering livestock can also be made when there are potential security threats from livestock thieves. If the livestock asset is safely secured and/or out of sight, this can reduce opportunistic livestock raids and reduce the vulnerability of the livestock owner.

Sheltering issues relating to livestock

For displaced and non-displaced disaster-affected people who are keeping livestock, or where people have migrated with their livestock, there are several shelter and settlement issues related to livestock:

Spread of trans-boundary disease: As people migrate with their livestock due to conflict, drought or other natural disasters there is an increased risk of spreading infections. This risk can be mitigated through working with national and regional disease surveillance projects (where available) and planning a locally appropriate response with regional veterinary and public health organisations.

Access to grazing / fodder: There may be reduced grazing land or fodder available or access may be constrained due to insecurity, difficult terrain or host community relations. Competition between host and displaced communities over grazing land and watering points can often cause conflict and is therefore a key consideration in settlement planning.

Location of livestock: When displaced people in a camp or temporary settlement have their livestock with them, space for livestock should be included in site planning. Considerations include living space for the animals, access to grazing, exit routes and a secure



"Accounts [are common] of how disaster-affected people make provisions for their livestock themselves, often using the materials that organisations have intended them to use for sheltering their family".
Above: A child's coat is given to a calf after the Pakistan earthquake, and a shelter is built for the livestock whilst the family are living in a similarly makeshift shelter.
Photos: Joseph Ashmore



and protected location. Cultural norms may prevent communal grouping of livestock as people may prefer to keep their livestock separate for fear of identification problems or sharing disease. For non-displaced people community livestock sheltering may be possible, if identification and disease control are considered. In the majority of cases, people prefer to keep their livestock assets within their own household plot, and consideration of this should be made when planning.

Environmental impact: Livestock can over-graze, pollute water sources and cause local erosion.

Water availability: Households with livestock require extra water for the animals. Household water shortages are sometimes due to a failure to include animals' drinking needs. Separate water points for livestock and people should be planned where possible to reduce contamination of human water sources.

Faeces disposal: The collection and disposal of livestock faeces should be included in a shelter response to prevent health and hygiene problems. Dried dung can be an important, cheap source of fuel.

Host community / Government: Along with firewood and water collection, livestock grazing can place extra demands on fragile natural resources. Arrangements for livestock should be discussed with local communities and government.

As international organisations seldom incorporate livestock considerations into their emergency shelter programmes, problems arise that, with greater awareness and integrated planning, could be mitigated against or eliminated completely.

The Livestock Emergency Guidelines and Standards (LEGS) can be used to support decision making and planning for livestock shelter and settlement interventions. (For further information see www.livestock-emergency.net)



"Dried dung can be used for fuel".
Dung drying in a camp near Kandahar, Afghanistan, 2003.
Photo: Joseph Ashmore



After Cyclone Aila in Bangladesh, with limited space available on road sides or embankments, many families prioritised secure shelter for their livestock.
Photo: Joseph Ashmore



In Dadaab, Kenya, there are restrictions on livestock, but they remain an important livelihoods asset.
Photo: Joseph Ashmore

Conclusion

The need to consider livestock-based livelihoods during the emergency stage of shelter responses is beginning to be identified by some agencies. Simple actions, such as assessing livestock-based livelihoods in a disaster affected community, can enable responding shelter agencies to decide whether there is a need to factor in livestock considerations.

In the majority of cases, conflict and disaster affected people make provisions for their livestock shelter without support or resource allocation from external organisations. Greater awareness of livestock issues by responding organisations could enhance the value of livestock to displaced people by reducing levels of animal ill-health caused by inappropriate sheltering.

Seeing the sheltering of livestock as part of a livelihoods solution may provide organisations with better opportunities for integrating livestock-based interventions. Increasingly organisations want to provide people with the tools they need for self-recovery, where affected people choose how and where they will rebuild, which may involve livestock as a necessity. Improved support for livestock-based livelihoods may be part of an umbrella of interventions to improve resilience.

Julia Macro

B.4 A Reflection on the Importance of Settlements in Humanitarian Shelter Assistance

The convergence of disasters and urban areas has propelled the need to address “settlements” as an important component of disaster assistance. But, urban areas are complex physical and social environments which have forced a considerable increase in the complexity of our humanitarian response and the difficulty of recovering after the disaster. Shelter and Settlements are inextricably linked and can no longer be treated as separate units or responses, but must be managed as a single, indivisible programme undertaking.

The settlement is the framework and platform (physically and socially) that establishes the living space of which shelter is but one component. There can be many types of settlements: good and bad, big and little, temporary and permanent.

It is not the purpose of this reflection to address the features and nuances of the potential types of settlements. What we consider here is the situation of a destroyed, primarily residential, urban area and the general awareness that should be considered in an effective humanitarian response that will both assure good habitable space and properly envision recovery and future growth.

In a large disaster, the primary trigger to action is displacement of people from their living space and the attending problems that accompany such displacement. Although there may be many intermediate objectives, transitional goals or temporary situations, the universal, overriding goal is to get those displaced back to their living space (settlement, housing, etc.) in a timely manner and to a state where the family asset base and the settlement service base can sustain community recovery with minimal outside assistance. This goal must be our prime objective and is the necessary ingredient for sustainability and resilience.

There are three important “habitable space” factors to note in dealing with displacement. The first factor is that a person is not in “recovery” until that person is at least in a stabilised, non-transient living environment

that provides a positive momentum to return to normal. The second factor is that settlements, in the urban context, become more important than the shelters, because the settlement sets the conditions for, and feasibility of, the shelter/housing response and the other qualities necessary for sustainability and resilience. In short, if the settlement does not take hold or is inadequate, recovery cannot begin, and decent, permanent housing will not start. Ultimately, if the settlement fails the housing will fail. Alternatively, if a good settlement start is established, housing will likely commence and develop on its own. The third factor is that urban settlements are often too big to deal with all at once. For this reason the best approach is to work with smaller settlement units or neighbourhoods. Neighbourhoods are the building blocks for urban recovery. A larger urban disaster, seemingly overwhelming, can be effectively addressed one neighbourhood at a time.

In the urban setting, compounding issues which take on elevated importance in the shelter and settlements dynamic include:

- **Livelihoods:** In cities people are depended upon a job to provide the resources necessary to buy food, services, housing and other needs. Removing them from their neighbourhood usually removes them from their work/living.
- **Dense population:** Living space is much more controlled, confined and limited; buildings are much closer together and “affect” one another; habitable space goes up rather than out; and people are more often renters than owners. All these factors make sheltering and recovery difficult.
- **Land conflicts:** Land use is more regulated; services to land (water, electricity, pathways, etc.) are essential and transcend land ownership boundaries; land related activities, particularly where construction is involved, often have to be coordinated and phased with similar activities of the owners and users of surrounding land.

“...Shelter and Settlements are inextricably linked and can no longer be treated as separate units or responses...”



Muzafarabad, Pakistan 2005 after an earthquake.
Photo: Joseph Ashmore

“A neighbourhood is a settlement which has a socially defined closeness of the inhabitants in the common aspects of their lives”



Gonaives, Haiti 2008, following extensive flooding.
Photo: Joseph Ashmore

- **Social issues:** Political and economic issues; land and property rights; and the interacting impacts of all these issues become important, are germane, and need to be programme components.
- **Poverty:** Urban areas often have large concentrations of impoverished families who live in poor housing, hazardous conditions, and infrastructure and service deficient communities, all of which makes these populations highly vulnerable and difficult to assist.

The operational unit – the Neighbourhood

A neighbourhood is a settlement which, in addition to having a “territory”, has a socially defined closeness of the inhabitants in the common aspects of their lives. This closeness may reflect economic, physical, cultural, ethnic, religious, political, administrative and other characteristics. It is important to prioritise these factors in terms of their importance in any given situation. The neighbourhood is the rough urban equivalent of a village in the rural setting, but significantly more complicated.

All the necessary elements of the settlement (discussed below) become interrelated, interconnected, and interacting with shelter/housing at the centre. The neighbourhood approach becomes the mechanism in which we optimise all the competing factors and create the transformative platform to re-establish, and hopefully improve, the “living space” of the population after the disaster. When linked together through an emergency urban plan, neighbourhoods can serve as the basis of recovery in extended or complicated urban areas.



“Debris removal is decisive... Drainage is essential...”
Photo: Joseph Ashmore

Elements defining a neighbourhood

What constitutes a “neighbourhood” for disaster assistance shelter and settlements purposes is driven first by context and then by need, to provide a safe, functional, and appropriate living space, in accordance with our universal humanitarian principles. There are no “magic bullet” factors (although “driving” factors usually emerge). The ultimate specification of the settlement is an optimisation process that will define the neighbourhood and which may involve the balancing of competing factors. This article does not address how to weigh factors, how to identify “driving” factors, or how to use the resulting neighbourhood attributes in the design function. Those are topics for separate articles. Also the process will differ if one is working in an existing neighbourhood as distinguished from creating a new neighbourhood. In this reflection we consider the situation of working in an existing neighbourhood.

The neighbourhood is defined both by physical attributes and affinity relationships. Factors important to the determination of the neighbourhood for our disaster assistance response purposes include:

a) Physical attributes

- **The neighbourhood should have reasonably defined and determinable natural/physical boundaries.**

Boundaries may be set by streets, railroad lines, etc.; by building types (residential vs. business); by natural features (ravines, waterways, etc.); and/or legal requirements (zoning, land use policy, etc.). The important aspect is that the area determined is reasonably compact, can be serviceable without complex, complicated or involved physical or social infrastructure.

- **For most shelter and settlement programs, the neighbourhood should be largely residential in character, since sheltering care is the primary focus of our humanitarian response.**

Neighbourhoods, many times, will have elements of business, industry or dominant uses. The more these elements are brought into the programme design the more complicated and conflicted the situation can become. One should consider edge matching to these factors rather than bringing them in as major elements. These elements, if important may have to be considered as part of any livelihoods component.



The neighbourhood is defined both by physical attributes and affinity relationships.
Photo: Joseph Ashmore

b) Affinity relationships

- **The neighbourhood must have a reasonable level of social cohesion.**

The cohesion requirement is necessary for community involvement and participation in the neighbourhood design, planning, and implementation functions, all of which are important factors in our participatory shelter and settlements programming.

- **Major consideration should be given to neighbourhoods where compatible organisations (also potential partners) have already been working.**

Any neighbourhood programme will require the use of local assistance to get the job done. In this regard have available community organisations and group that can mesh with the programme can be very valuable.

c) Minimum elements and considerations

- **Land mapping, social occupancy mapping and rights**

Mapping and a community, participatory, land boundary identification process is critical. This approach is necessary to: properly establish land rights for the project; have the agreed parcel boundaries before demolition; and, provide a basis for the settlement design, particularly in improving roadways, housing accesses, drainage and land use. The mapping process must be done in such a way as to fill the gaps in the country's civil land system and to be compatible with that system as it develops.

- **Debris removal, land stabilisation and drainage**

Debris removal is decisive. Even relief response cannot effectively start without rubble removal, much less recovery or development. Drainage is essential because it will dictate the quality of the storm water (which affects floods) and waste water systems (which affects sanitation). Drainage will be tied to a mitigating topology which is also important because most of the places in which responders serve involve hazardous lands.

- **Pathways and roadways**

Pathways and roads must be one of the first design elements because they are hard to establish after the fact. These elements, have a big impact on drainage as so must be considered contemporaneously with land topology work and drainage. Road and pathways also play an important role in access and egress in the case of emergencies and evacuations.

- **Economic viability and livelihoods**

As noted, livelihoods are a critical element in urban disasters, so the settlement response must take account of minimal economic considerations, including the long term economical viability of the settlement location and the context after the disaster.

LeGrand L. Malany, P.E.

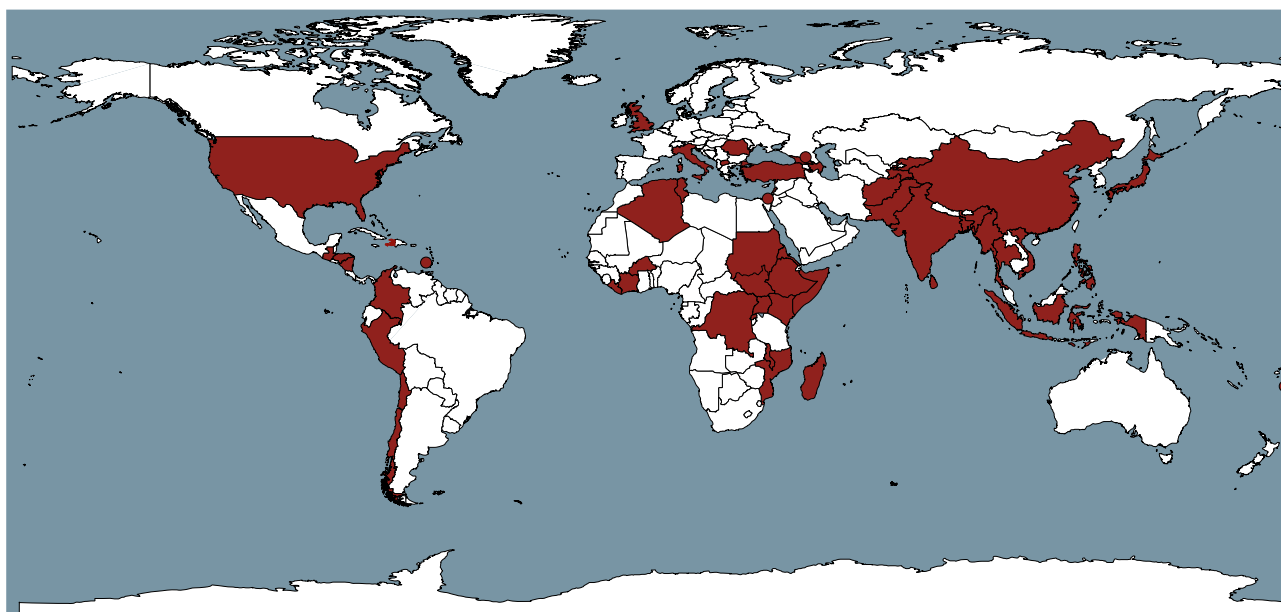
Independent shelter and Settlements Advisor,
USAID/OFDA.

Annexes

The Annexes contain a list of case studies in the four editions of this report to date, tables of conversion factors and further reading. The further reading includes some of the public documentation on which Shelter Projects 2011-2012 was based on.

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Annex 1 - Index - by Country



This index is to help readers find case studies of shelter projects from Shelter Projects 2008, Shelter Projects 2009, Shelter Projects 2010 and Shelter Projects 2011-2012. It is sorted by country and by date. Projects are colour coded as follows:

- Case studies
- Updates - Follow up reports on existing case studies, and technical analyses of individual shelter designs.
- Historic case studies - Case studies of projects before 2000

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Vietnam, 2004, Typhoon	Technical.....	Transitional shelters: 8 designs
Yugoslavia (ex republic of:), 1963, Earthquake.....	Case study	Shelter Projects 2009

Annex 2 - Conversion Tables

These tables are included to help readers convert the measurements in the Bills of Quantities.

The data on this page is all rounded to 4 significant figures. Penny sizes are rounded to the nearest mm.

Length				
Imperial	1 inch (in.)	1 feet (ft.) = 12in.	1 yard (yd.) = 3ft. = 36in.	1 mile = 1760yd.
↕				
Metric	25.4mm = 2.54cm	304.8mm	0.9144m	1.609km

For equivalence tables in timber sizing see UNOCHA / IFRC / CARE International, Timber

Area			
Imperial	1 square feet (sq. ft.)	1 square yard (yd ²) = 9sq. ft.	1 acre
↕			
Metric	0.0929m ²	0.8361m ²	4046.9m ²

1 perch = 30.25yd²

1 acre = 4,840yd²

1 hectare = 10 000m²

Volume		
Imperial	1 cubic feet (ft ³)	1 cubic yard (yd ³)
↕		
Metric	28.32 litres = 0.02832m ³	0.7646m ³

1 US liquid gallon = 3.785 litres

1 US dry gallon = 4.405 litres

1 imperial (UK) gallon = 4.546 litres

Weight			
Imperial	1pound (lb)	Ton (UK, long ton)	Ton (US, net ton, short ton)
↕			
Metric	0.4536kg	1.1016MT = 1016kg	0.9072MT = 907.2kg

Note that there are several different imperial systems of weights. We quote the British imperial ton as in the Weights and Measures Act of 1824, and the United States customary system. Additional useful conversions are:

1lb = 16 Ounces (Oz.)

1 stone = 14 pounds (lb.)

1 hundredweight (cwt.) - UK = 112lb.

1 hundredweight (cwt.) - US = 100lb.

Nails - "penny sizes"													
Imperial	Penny size	2d	3d	4d	6d	8d	10d	16d	20d	40d	50d	60d	100d
	↕	Inches	1	1 ¼	1 ½	2	2 ½	3	3 ½	4	5	5 ½	6
Metric	↕												
	Nearest length (mm)	25	32	38	51	64	76	89	102	127	140	152	254

Annex 2 - Further Reading

In compiling this edition of Shelter Projects, we have drawn on key informant interviews and a variety of sources. The published sources are listed below under General statistics and websites.

We also include a list of background documents - these are key shelter texts in which readers can find further reading on many of the shelter related issues raised by these case studies. Some of them are directly referred to in the text.

General statistics and case study related information

CRED, EM-DAT disaster database

www.emdat.be

Global database of world disasters.

IFRC, World Disasters Report, 2011 - Focus on hunger and malnutrition

IFRC, World Disasters Report, 2010 - Urban Risk

Available from www.ifrc.org

Annual report providing a global overview of disaster trends.

IFRC, reports

Available from reliefweb.int

These include Appeals, Operational updates, final, mid year and annual reports.

IDMC/ NRC, Internal Displacement Global Overview 2011: People internally displaced by conflict and violence, April 2012

Available from www.internal-displacement.org

Overview of IDP issues.

OCHA, Sitreps,

Available from reliefweb.int

Situation reports on major responses. Where possible these have been used for response timeline data and figures for the number of houses damaged.

OCHA appeal documents

www.unocha.org/cap

Financial appeals, action plans and reviews with narratives for OCHA coordinated responses.

UNHCR, Global Trends 2011

Available from www.unhcr.org

Annual summary of global statistics relating to refugees and persons of concern to UNHCR.

Websites

www.disasterassessment.org

A site where members of the disaster management community can meet to exchange tools and case studies related to disaster risk assessment.

<http://www.humanitarianresponse.info>

Humanitarian Response aims to be the central website for Information Management tools and services, enabling information exchange among operational responders during either a protracted or sudden onset emergency.

IFRC/ICRC Emergency relief items catalogue - website

procurement.ifrc.org/catalogue/

Detailed specifications of all items commonly used by IFRC and ICRC.

IFRC Shelter video channel

bit.ly/ifrcshelter

Red Cross Red Crescent videos related to emergency shelter.

www.reliefweb.int

Up to date information on complex emergencies and natural disasters as well as an archive of information, field reports and situation reports from emergencies since 1996. OCHA situation reports (sitreps) and IFRC appeal documents and operations updates have been of particular use in compiling these case studies.

SDC - Cash transfer Projects

www.sdc-cashprojects.ch/en/Home/Experiences/SDC_Cash_Transfer_Projects

Compilation of cash projects by SDC. Includes shelter case studies.

www.shelterlibrary.org

A library of free documents relating to transitional settlement and reconstruction.

www.sheltercluster.org

Home page of the global shelter cluster - the coordination mechanism for shelter responses. Contains links to individual responses, including strategy documents.

www.sphereproject.org

Download the sphere handbook, find information on trainings and other activities from the Sphere Project. The Sphere Project aims to improve the quality of humanitarian assistance and the accountability of humanitarian actors to their constituents, donors and affected populations.

UNHCR Data portals (data.unhcr.org/portfolio/):

data.unhcr.org/horn-of-africa

data.unhcr.org/MaliSituation

data.unhcr.org/syrianrefugees

Regional response portals for individual refugee related responses.

Background Documents

Mike Albu, The Emergency Market Mapping and Analysis Toolkit, 2010

Available from: www.emma-toolkit.org

A toolkit designed for generalists, as well as specialist staff on how to conduct an emergency market mapping analysis.

Sultan Barakat, HPN Network paper 043, Housing reconstruction after conflict and disaster, ODI, 2003

Available from: www.odihpn.org/documents/networkpaper043.pdf

Review of housing reconstruction experiences and approaches.

Camp management project, Camp Management Toolkit, 2008

Available from: www.nrc.no/camp

A comprehensive field manual for camp management organisations and stakeholders involved in camp operations.

Corsellis and Vitale, Transitional Settlement: Displaced Populations, Oxfam publishing, 2005

Available from: www.shelterlibrary.org

Guidelines for the strategic planning and implementation of settlement responses for displaced populations.

CRS, Managing Post-disaster (Re)-Construction Projects, 2013

Available from : www.crsprogramquality.org

Step-by-step guide on management of owner-driven and contractor-built construction.

CRS, Learning From the Urban Transitional Shelter Response in Haiti - 2012

www.crsprogramquality.org

CRS's experiences in planning and implementing its urban transitional shelter response in Port-au-Prince, Haiti.

CRS, Learning From Urban Transitional Settlement Response in the Philippines: Housing, Land and Property - 2012

Available from: www.crsprogramquality.org

Reflections and questions to ask to improve future transitional settlement and land programs.

IASC, Shelter Centre, Selecting NFIs for shelter, 2008

Available from: www.shelterlibrary.org

Provides information, case studies and guidance on how to choose the best items to distribute to those affected by natural disaster or conflict.

ICRC/IFRC Guidelines for cash transfer programming, 2007

Available from: www.ifrc.org

Provides information on when and how to distribute cash in disaster response.

IFRC, Guidelines for assessment in emergencies, 2008

Available from: www.ifrc.org

Practical information and guidance on how to conduct assessments in emergencies.

IFRC Owner Driven Housing Reconstruction Guidelines (ODHR), 2010

Available from: www.ifrc.org

Guidance on the planning and implementation of assisted self help reconstruction projects.

IFRC, Oxfam GB, Plastic sheeting, 2007

Available from: www.plastic-sheeting.org

A guide to the use and specification of plastic sheeting in humanitarian relief, 2007. An illustrated booklet on when and how to use plastic sheeting most effectively in emergencies.

IFRC, The IFRC shelter kit, 2010

Available from: www.shelterlibrary.org

A guide on the IFRC shelter kit and how to use it.

IFRC, Transitional Shelter: Eight Designs, 2011

Available from: www.ShelterCaseStudies.org

A review of risks in shelter construction and detailed structural analysis of eight different transitional shelters designs that have been used in the field in large scale projects.

NRC, Shelter Centre, Urban Shelter Guidelines, 2010

Available from: www.shelterlibrary.org

General guidance for urban humanitarian response.

Shelter Centre, UN, DfID, Shelter after disaster - Strategies for transitional settlement and reconstruction, 2010

Available from: www.shelterlibrary.org

A book containing information and guidance on how to agree strategies for reconstruction after natural disasters. contains description of the types of shelter programmes that organisations can implement.

Sphere Project, Sphere - Humanitarian charter and minimum standards in humanitarian response, 2011

Available from: www.sphereproject.org

Contains consensus standards agreed among major humanitarian organisations for key sectors, including shelter and settlement. It also contains actions, indicators and guidance notes as to whether standards have been achieved.

UNDRO, (now UNOCHA), Davis, I., Shelter After Disaster, Guidelines for Assistance, 1982

Available from: www.shelterlibrary.org

Guidelines and description of shelter provision in all aspects of natural disasters (from preparedness to reconstruction).

UNHABITAT, UNHCR, IFRC, Shelter Projects 2010

Available from: www.ShelterCaseStudies.org

Case studies of shelter projects implemented between 1906 and 2010. Includes many different types of response.

UNHABITAT, IFRC, Shelter Projects 2009

Available from: www.ShelterCaseStudies.org

Case studies of shelter projects implemented between 1945 and 2009. Includes many different types of response.

UNHABITAT, IFRC, UNHCR, Shelter Projects 2008

Available from: www.ShelterCaseStudies.org

More case studies. See also UNHABITAT, IFRC, Shelter Projects 2009.

UNHABITAT, Land and Natural Disasters - Guidance for Practitioners, 2010

Available from: www.disasterassessment.org or from www.unhabitat.org

A book containing guidance on land issues following natural disasters.

UNHCR, Handbook for Emergencies, Third Edition, 2007

Available from: www.unhcr.org

A book containing guidance on the management and all the key sectors in refugee emergencies.

UNICEF, Compendium of Temporary Learning Spaces (TLS): Design and practice in emergencies 2011

Designs and guidance on the construction of temporary learning spaces.

UN/IOCHA, Tents - A guide to the use and logistics of tents in humanitarian relief, 2004

Available from: www.shelterlibrary.org

A booklet describing when and how to use tents as well how to support those living in them to best adapt them to meet their needs.

UN/IOCHA / IFRC / CARE International, Timber as a construction material in humanitarian operations, 2009

Available from: www.humanitarianitimer.org

An illustrated booklet on how to source and use timber for the construction of basic structures.

