

# SHELTER PROJECTS

## SITE PLANNING 16 Case Studies

*CASE STUDIES OF HUMANITARIAN SHELTER AND SETTLEMENT RESPONSES WITH SITE PLANNING COMPONENT*



**Global Shelter Cluster**  
ShelterCluster.org  
Coordinating Humanitarian Shelter

## Shelter Projects - Site Planning: 16 Case Studies

Released in May 2019 by the International Organization for Migration (IOM), on behalf of the Global Shelter Cluster.

All case studies are available online from [www.shelterprojects.org](http://www.shelterprojects.org)

Copyright for this book is retained by IFRC, IOM, UNHCR, and UN-HABITAT. Reproduction for non-profitable objectives is encouraged.

The copyright for the photographs and images remains with the photographers or entities whose names appear on each picture or in the caption. The Global Shelter Cluster and its members may use the pictures, if appropriately credited.

This booklet has been compiled and printed thanks to the support of USAID/OFDA and IOM.

Case studies in the Shelter Projects publication have been provided by organizations and individuals listed online at: [www.shelterprojects.org/partners.html](http://www.shelterprojects.org/partners.html)

### DISCLAIMER

The maps contained in this publication are for illustrative purposes only and should not be considered authoritative. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by IOM, IFRC, UNHCR or UN-HABITAT. Whilst every effort has been made to ensure the accuracy and completeness of the content of this booklet, no liability can be accepted for any errors or omissions contained within it.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Global Shelter Cluster concerning the legal status of any country, territory, city or area, or of its authorities, or concerning delimitation of its frontiers or boundaries, or regarding its economic system or degree of development.

This report has been published without formal editing.

Approximate prices are given in US Dollars (USD), based on exchange rates around the time of the project.

Copyright for front cover photo: ©Rainer Gonzalez Palau, Wau Protection of Civilian Site (PoC), South Sudan.

Copyright for back cover photos (top to bottom, left to right):

© Rikka Tupaz, Wau PoC, South Sudan.

© Shelter-NFI-CCCM Sector Working Group, Bakassi camp, Nigeria.

© Raber Aziz, Qayyarah Airstrip, Iraq.

© Rainer Gonzalez Palau, Wau PoC, South Sudan.



# TABLE OF CONTENTS

1 / D.4 / BANGLADESH / 1975 / Conflict	1
2 / A.14 / BANGLADESH / 2017-2018 / Refugees	4
3 / A.1 / BURUNDI / 2017-2018 / Camp closure	10
4 / A.9 / HAITI / 2010 / Earthquake	15
5 / D.2 / INDIA / 1971 / Refugees	18
6 / A.35 / IRAQ / 2014-2015 / Refugees	21
7 / A.26 / IRAQ / 2016-2017 / Conflict	25
8 / A.15 / KENYA (Dadaab) / 2011 / Refugees	31
9 / D.3 / NICARAGUA / 1973 / Earthquake	36
10 / A.19 / PAKISTAN / 2012 / Floods	39
11 / A.25 / SOUTH SUDAN / 2014-2016 / Conflict	43
12 / A.9 / SOUTH SUDAN / 2018 / Conflict	48
13 / D.9 / SUDAN / 1985 / Refugees	53
14 / D.7 / THAILAND / 1979-1980 / Refugees	56
15 / A.31 / TUNISIA / 2011 / Refugees and Migrants	58
16 / C.21 / TURKEY, Gediz / 1970 / Earthquake	62

\* Note that the original case study codes from past Shelter Projects editions are retained on each case study.



Kutupalong-Balukhali Expansion settlement in Cox's Bazar district, Bangladesh.

## INTRODUCTION

Camps and sites are a last resort and should be avoided wherever possible. However, in many cases there are no other options to support displaced people to find safe, dignified and healthy shelter. This booklet is a compilation of sixteen case studies of projects from 13 countries illustrating various issues in site planning from 1970 to the present day.

This booklet contains some of the site and settlement planning case studies extracted from the past seven editions of Shelter Projects, an inter-agency publication containing case studies of humanitarian shelter and settlements responses. This series of publications, contains contributions from 485 shelter programme staff from over 50 agencies, and includes responses from humanitarian agencies and host governments.

These case studies use various terms such as “temporary sites”, “spontaneous settlements” and “camps” sometimes interchangeably. Each case study reflects the language and terminology that is agreed locally. For this document the focus is on sites which are established in response to an emergency mass shelter need. Although they are often established by affected populations themselves, or by supporting agencies as an emergency measure, they may remain for years or even decades.

The site planning projects in this edition include all phases of response from site selection and start up to care and maintenance to site closure. They also include site planning case studies from six refugee responses and planning for sites in response to natural disasters, complex crises and conflict.

Although all case studies include strengths and weaknesses, the key determinant in any project design is the context. Issues such as nature of the displacement, anticipated duration, topography, climate, funding environment, host community practices, and security all lead to very different needs, requirements, and responses. Because of this variation, no two sites look alike. The case studies in this document discuss interventions in sites varying in size from 700 people to over 600,000 people, with site durations of up to decades. Whilst some of the sites were planned from scratch on greenfield sites, many more were retrofitted to meet the needs of displaced people who found available land and built their own shelters.

This publication is intended to support learning by highlighting the strengths, weaknesses and some of the lessons that can be learnt from different settlement planning projects. Whilst it does not encourage the formation of camps, it recognizes that when sites do need to be built, the planning of them can have long lasting impacts on both displaced and host communities. Whereas a well-planned site can help to safeguard those within it, a poorly planned or located site can increase the risk of exposure to Gender Based Violence, conflict, natural hazards, lack of livelihoods and disease.

The target audience of this project is anyone involved in the creation, planning or closure of sites. Although every context is unique, there are many recurrent themes that can be learnt from the past so that we do not make the same mistakes, and know what works best in the future.

*All case studies contained in this booklet as well as other case studies of Shelter Projects can be downloaded from [shelterprojects.org](http://shelterprojects.org)*

# 1 / D.4 Bangladesh- 1975 - Conflict - People displaced

## Case study: Shelter upgrades

### Project type:

Cyclone-resistant shelters in camps for the displaced

### Disaster:

Bangladesh War of Independence, 1971

### No. of people displaced:

Hundreds of thousands

### Project target population:

Three camps

### Occupancy rate on handover:

100%

### Shelter size

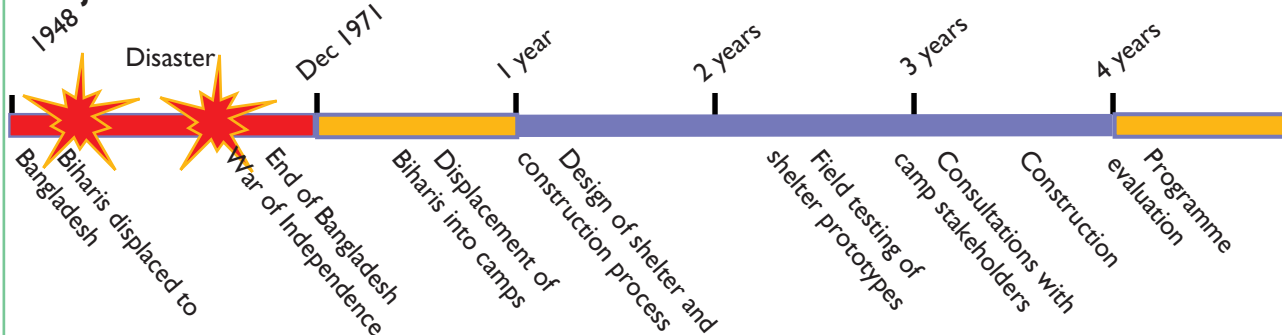
Various



## Summary

Long-term camps for displaced stateless populations were upgraded using cyclone-resistant shelter designs made from local materials in order to reorganise and upgrade small camps along community cluster designs.

## Project timeline



## Strengths and weaknesses

- ✓ Shelters made from local materials were successfully designed to withstand strong winds.
- ✓ Small clusters of shelters allowed for privacy and for community support.
- ✓ Reorganisation of the camp layout gave more personal outdoor space to each family and allowed for better drainage.
- ✓ Implementation was quick, due to use of locally available materials.
- ✗ The A-frame design was structurally sound but reduced indoor space and made extension of shelter difficult.
- ✗ Lack of involvement of the target population in the design process resulted in lower levels of beneficiary satisfaction post-occupancy.

Case study credits: Cuny Center



## Before the upgrading of the camps

Hundreds of thousands of Urdu-speaking Biharis migrated from eastern India to what was then East Pakistan during the partition period of 1948. During the Bangladesh War of Independence in 1971, the Biharis sided with the Government of Pakistan. After the surrender and evacuation of Pakistani armed forces, the Biharis were left behind, declared to be enemy citizens by the new Bangladesh government, denied the right to resettle in Pakistan by the Pakistan government, and were rendered stateless.

During the 1972-1974 period, the Biharis were displaced into camps, often under force from the Bangladeshi authorities. A number of those camps were scattered on marginal lands on the periphery of Dacca. In 1972, some NGOs had given shelters or shelter materials to the camps, but the camp layouts were often poorly organised, and the shelters themselves had not been upgraded since that point.

In 1974-75, local police forced some of the Biharis into new camp sites. This had the initial effect of making NGOs reluctant to support the camps, in case they were seen as supporting the government policies. This attitude only changed after April 1975, after storms had caused major damage to some camps.

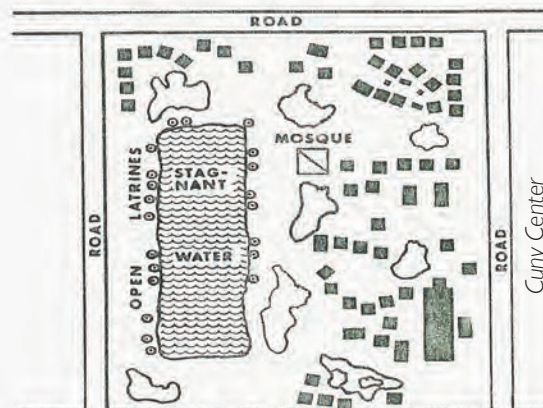
The Intertext consultancy had been working with US university researchers on the development of emergency shelter designs and implementation processes since late 1973. In 1975, they were given donor assistance to deploy shelter prototypes in the field. After that, Intertext persuaded NGOs working in three different camps to use their designs for shelters, camp layout and construction processes.

The aims of the research project had been to design shelters that:

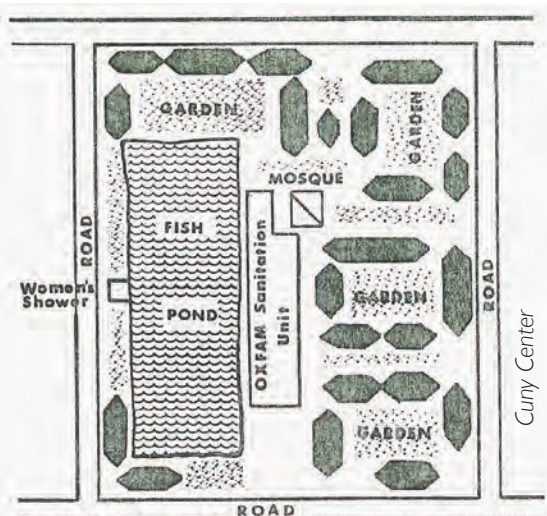
- would be sustainable and resistant to hazard;
- could be constructed by the beneficiaries;
- would instruct the beneficiaries in hazard-resistant design through the construction process; and
- could be made in large numbers, and could be made out of low-cost, local materials.

## MIRPUR REDEVELOPMENT PROJECT

### Original Conditions



### After Reconstruction



A joint project of:

CMU  
INTERTECT  
MCC  
OXFAM  
UNICEF

Site plans before and after upgrade

## After the upgrading of the camps

There continued to be very minor technical issues with the structures themselves. These issues, such as the angle and placement of the windows, were easily fixable by the occupants. However, it was noted that the families did little if anything to improve or adapt their shelters.

Later assessments showed that although the beneficiaries were generally satisfied with their new shelters, the A-frame design made it difficult to make extensions or additions. There were also complaints that although the A-frame was highly resistant to high winds, it also reduced the head height.

In general, the lack of beneficiary participation in the design process was seen in the reduced sense of ownership or responsibility after occupancy.

## Selection of beneficiaries (and assessment)

People were largely self-selected by arriving at the camp. All families in the camp were eligible for the new shelters. Assessments of beneficiary satisfaction (and the reasons for any dissatisfaction) were included in the project's final report of October 1975. Members of the consultancy team made further assessments in 1977.

## Land rights / ownership

The Bihari camp residents continue to be stateless (recent rulings give the option of Bangladeshi citizenship only to later-born generations) and do not own the land.

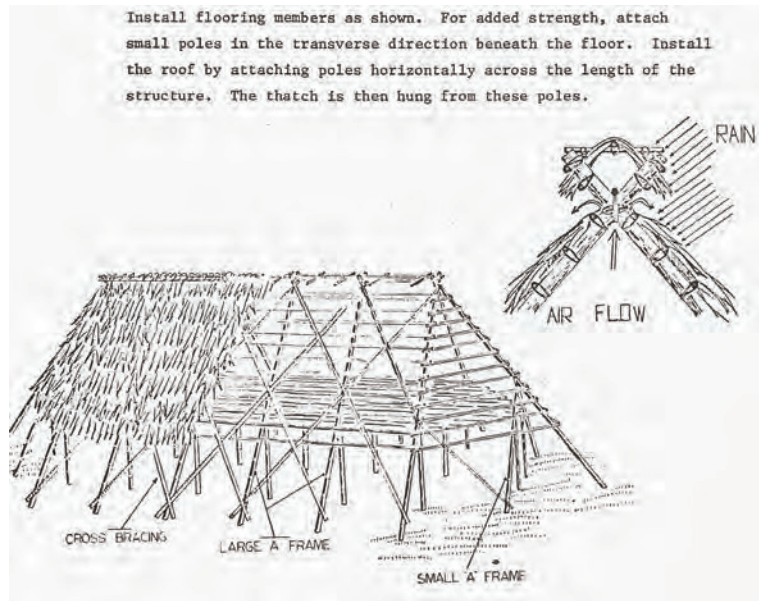
## Technical solutions

Multi-family shelters were designed using bamboo poles, palm thatch, matting and jute rope. The design was that of an A-frame with cross-bracing, which had performed best in strong-wind tests back in the US.

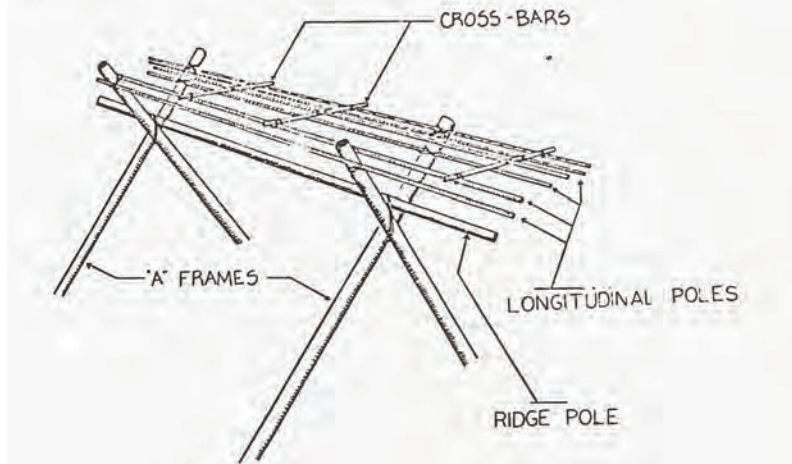
The shelters built in the camps also had raised floors to protect the families from flooding. A small number of alternative models were made with varying lengths and for varying numbers of families.

The consultant recognised that most post-natural disaster situations generally required single-family shelters that could be built on each family's plot. But it was felt that in the planned camps for the Biharis, with very limited amounts of space, the multiple-family shelters were appropriate. The same basic design principles could be used for single-family shelters if required.

The layout of the camps was based upon small U-shaped clusters of shelters. These were later simplified to square clusters in some camps. Space within the U was intended for the use of women, particularly those observing purdah. The areas outside the U shape, along the access routes through the camp, were intended for use by the men. In this way, the public men's area was also intended to be made available for workshops or other livelihoods activities, and also gave each community more control over the public space nearest their shelter cluster. Washing and cooking areas were contained within each cluster.



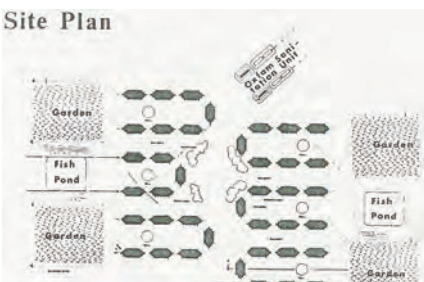
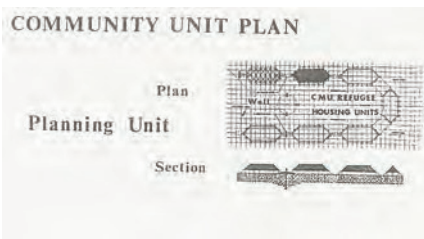
At the top of the shelter, longitudinal poles should be attached as shown.



Shelter design details

Cuny Center

Cuny Center



U-shaped community block plans

**Implementation**

Two prototypes of the shelter were built in the field under the supervision of the university/consultant team and were occupied by refugee families. Based on observations of environmental issues, minor changes in structure were made. After further consultations with camp stakeholders (local government officials, NGOs, camp residents), the upgrading was started in phases, with sections of the camp being upgraded in rotation.

It was estimated that it would take a multi-person team two days to build one shelter, with different small teams assembled to take charge of different simultaneous tasks. However, problems were encountered in instructing the work teams in both the design and the construction techniques. The manuals

previously designed in the US were too cumbersome and too detailed.

The work teams preferred to be trained verbally, but this slowed down the rate of construction. This meant that large-scale production of the shelters would be impossible or would have to rely on large numbers of trainers and supervisors. Eventually, flip charts with simplified graphics were also developed for use in the project.

**Logistics and materials**

The basic materials were provided to the refugees by the humanitarian organisations. All materials were available locally.



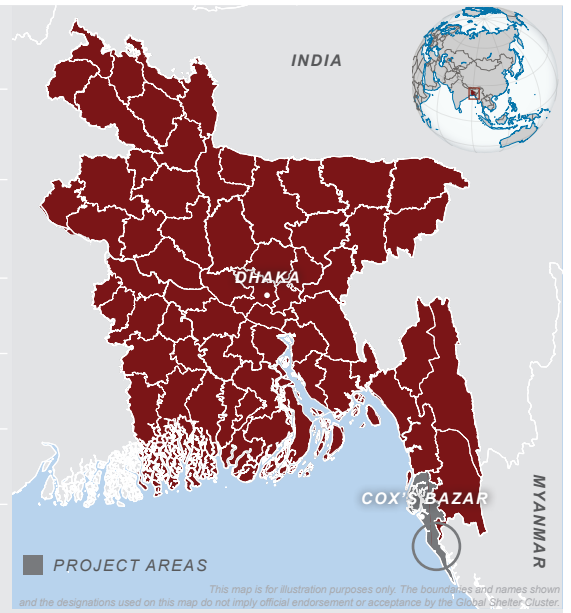
CASE STUDY

2 / A.14

# BANGLADESH 2017–2018 / ROHINGYA CRISIS

**KEYWORDS:** Site planning, Coordination, Disaster Risk Reduction

<b>CRISIS</b>	<b>Rohingya Refugee Crisis, Cox's Bazar, 25 August 2017–onwards</b>
<b>TOTAL PEOPLE AFFECTED*</b>	<b>260,000 households</b> (1.3 million individuals), incl. host community
<b>TOTAL PEOPLE DISPLACED*</b>	<b>134,200 households</b> (671,000 new arrivals) <b>120,480 households</b> (602,400 refugees) in KBE
<b>PROJECT LOCATION</b>	Kutupalong-Balukhali Expansion (KBE) Site, Cox's Bazar
<b>PROJECT BENEFICIARIES</b>	Over <b>120,000 households</b> (600,000 individuals).
<b>PROJECT OUTPUTS</b>	<b>Site planning for the KBE site</b>



**SITE DENSITIES\*\*** 10–20m<sup>2</sup> per person in fully developed areas

\* Figures as of 25 Feb 2018. Joint Response Plan (JRP) for Rohingya Humanitarian Crisis.  
\*\* Typical planning figures are between 45m<sup>2</sup> and 60m<sup>2</sup> per person depending on the context. In exceptional circumstances, 35m<sup>2</sup> per person is acceptable.

**PROJECT SUMMARY**

In less than two months, over 400,000 refugees self-settled around existing refugee settlements in Cox's Bazar. This case study highlights the challenges site planners faced in the first six months working in this context. More refugees continued to arrive, secondary displacement increased, and agencies requested additional land to provide infrastructure and basic services. The case study chronicles the first attempts to map and understand the spontaneous settlements, identify additional land and design the first planned resettlement areas, to prepare for and mitigate the effects of the imminent monsoon season.

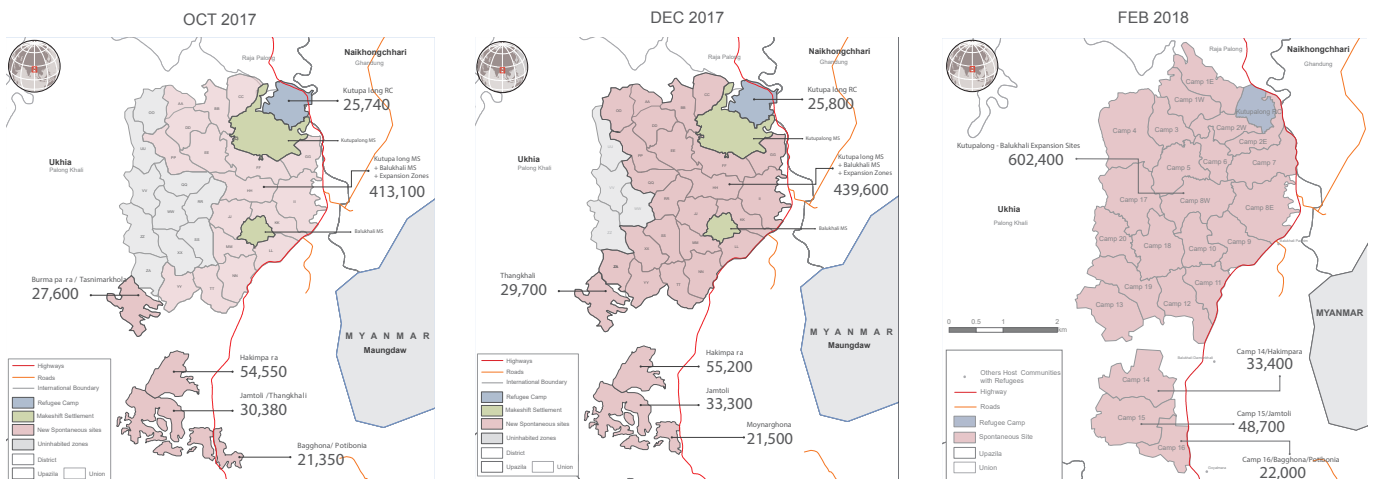


**STRENGTHS**

- + Early decisions were key to shaping the response.
- + Drones helped understand the site and terrain, and communicate to the government.
- + Disaster risk prevention specialists were brought in early.
- + Good inter-agency collaboration.

**WEAKNESSES**

- Site planners struggled to find an efficient technical forum.
- Resources were spread unequally across the entire site.
- Lack of an agreed zoning system caused confusion.
- The Macro Settlement Development Plan was not adopted.
- Refugees were not engaged in site planning early on.



After 25 August 2017, new refugee arrivals settled around existing settlements along the border with Myanmar. In six months, over 600,000 refugees were living in the Kutupalong-Balukhali Expansion site, occupying the whole expansion zone allocated by the government of Bangladesh (maps: ISCG).

**BACKGROUND AND CONTEXT**

For information on the 2017 influx and the Shelter-NFI response, see overview A.13.

Before the 2017 influx, no site planning, basic layout or erection of emergency shelters had started in the areas around the existing Rohingya settlements.<sup>1</sup>

Starting in late August, in less than two months, over 400,000 refugees arrived in and around these settlements. One year later, the whole area was regarded as the largest refugee camp in the world, hosting 631,000 refugees.<sup>2</sup> The massive influx dispersed into the existing settlements and host communities along the border, with the majority heading to the largest existing refugee camp of Kutupalong and the make-shift settlement of Balukhali.

Given the scale and speed of the influx, actors on the ground focused on providing life-saving assistance for the most vulnerable and let others self-settle. As a result, when site planning teams from the lead agencies started to draw up the first plans, they were faced with an unregulated and organically growing camp. Refugees were leading the decision-making on where to settle, where to pave new footpaths and bridges, and how to provide shelter for their families.

The hilly site was prone to flooding and landslides, and this was exacerbated as the need to rapidly settle the refugees further destabilized the slopes, removed natural drainage and infiltration capacities, and increased the chances of intense flooding. This became particularly relevant with the approaching monsoon season.

This case study focuses on activities and decisions made in the first six months of the emergency. It includes the very first attempts by site planners to understand the extension of the Kutupalong-Balukhali Expansion (KBE) areas and the start of a formal process of site planning. This period can be broken down into four distinct phases, ending in February 2018 as works began to prepare the site for the monsoon.

**PHASE 1 – UNDERSTANDING THE CONTEXT**

In the first weeks, the rains and lack of road infrastructure made movement within the KBE site extremely difficult and time consuming. There were no maps of the expansion and no formal roads.

<sup>1</sup> Prior to August 2017, there were over 100,000 Rohingya refugees living in the KBE area. The existing sites were planned, to a certain extent.

<sup>2</sup> As of 31 Aug 2018. JRP Mid-term Review.

Understanding the scale of the camp was difficult, as new arrivals were pushing the boundaries further north and south at alarming speed, with the most significant expansion to the west towards the national forest reserve. A breakdown of the area to enable better inter-agency coordination prompted the creation of the first “zones”.

Combining these maps with early population figures paved the way for the first estimates of densities and, more importantly, forecast potential population capacities. The maps also revealed the urgent need to improve access. The “Army Road” was commissioned, following the western border of the first expansion zone at the time. Another key decision taken was the rapid creation of the Transit Site alongside the existing “highway” and close to the Kutupalong Registered Camp.

The focus of this phase was on settling the new arrivals and assisting the most vulnerable with their immediate needs. A lack of staff and partners called for flexibility in roles and, as a result, site planners were drawn into other duties and field assignments, such as assisting with urgent relocations. In hindsight, it would have been better if site planners had focused more on the bigger picture, without getting too involved in field operations.

*The majority of settlements grow organically and are shaped by the physical environment and the locations of key infrastructural elements. So, decisions made during the first few months of the emergency have ramifications for years. It is important to be balanced when evaluating the urgency of decisions and the growth of settlements whilst understanding their long-term impact.*



© Richard Evans / UNHCR

*Prior to the establishment of the transit centre, refugees self-settled on improvised plots using whatever material they could find, as agencies did not have time to plan in advance of people settling.*



© Philipp Hübner / UNHCR/SDC

ZONE OO IN OCT 2017 BEFORE THE EXPANSION



**PHASE 2 – THE BASICS**

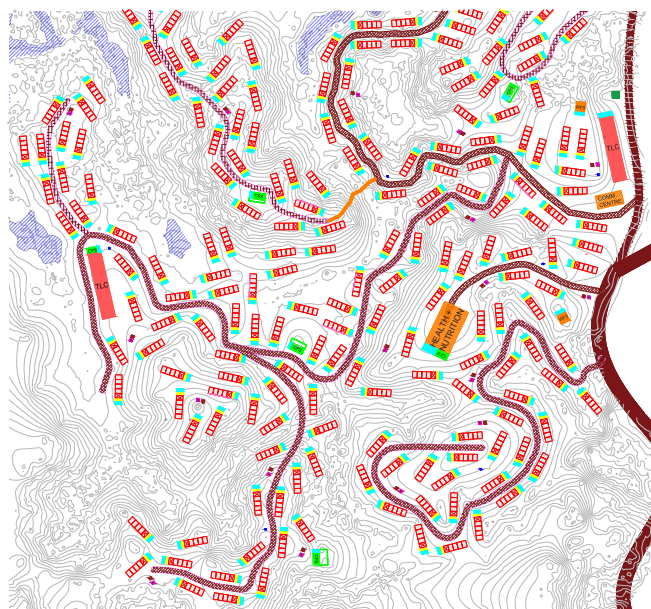
Following the production of the first maps, density calculations and an open channel of communication with the government, an additional 1,000 acres of land was released to the humanitarian community to accommodate the new arrivals and reduce population densities around the existing sites. The issuing of the new land enabled site planners to prepare in advance of refugees settling. For the first time in two months, land was surveyed and formal site plans were drawn up using international humanitarian standards and following contextualized best practice. However, it was still a race against time, as the unsustainable densities in existing settled areas were forcing refugees to spontaneously expand into the new land.

One of the very first areas in the expansion (labelled OO) was largely designed before refugees settled. Crucial land was reserved for schools, clinics and community buildings, while areas prone to landslides and flooding were demarcated as unsuitable for shelters.

As the understanding of the topography, geology and drainage patterns improved, the original zonal maps became more detailed. General consensus within the humanitarian community led to the use of the same base map, employing the notation of AA, BB, CC, etc., dividing the camp into zones ranging in size from 45 to 150 acres, each corresponding to approximately 20,000 refugees.<sup>3</sup> This sub-division was widely adopted by the Inter Sector Coordination Group (ISCG) and partners on the ground, yet, it was crucially not adopted by the Government’s Office of the Refugee Relief and Repatriation Commission (RRRC), the Army and the refugees themselves, who were all using different zoning systems. There was a significant failure to communicate and coordinate between stakeholders, resulting in confusion and delays as key groups could not “talk the same language”.

This phase was chaotic, with new actors and funds coming in, and activities being geared up. With the needs outweighing the resources, an efficient and coordinated response was needed. However, spatial communication issues (due to lack of maps and agreed notation) rendered coordination challenging. Agencies were unable to effectively follow-up on cases and track resources, and time was lost in the field as assessments could not be compared, because the exact locations could not be specified. GPS was not commonly used by agencies and geo-referenced data reporting was not standardized. This led to duplication, such as distribution in the same areas.

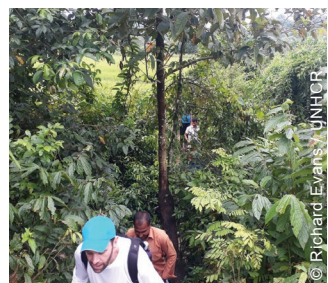
<sup>3</sup> Based on average population of AA–NN in October 2017.



Site planners started to draw the first plans following minimum agreed standards in October 2017, and some of the expansion zones were prepared in advance of refugees settling (Plan: Phoebe Goodwin / UNHCR).



In the initial phase of site planning in the field, drones were used to identify prime land for communal facilities, that was demarcated by teams on the ground.

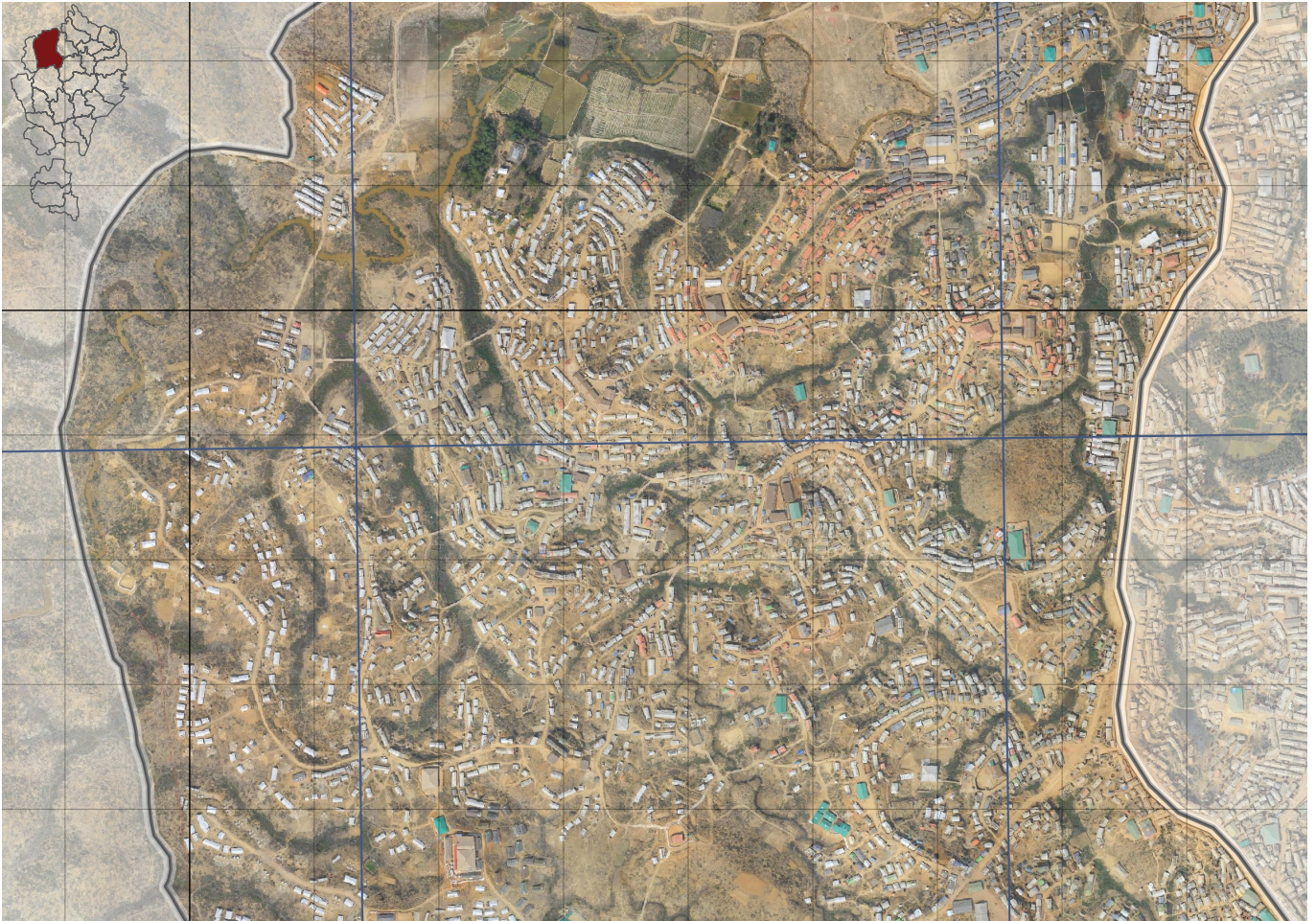


Access to the site was challenging and agencies fenced the west side of the zone to prevent uncontrolled expansion towards the natural reserve area.

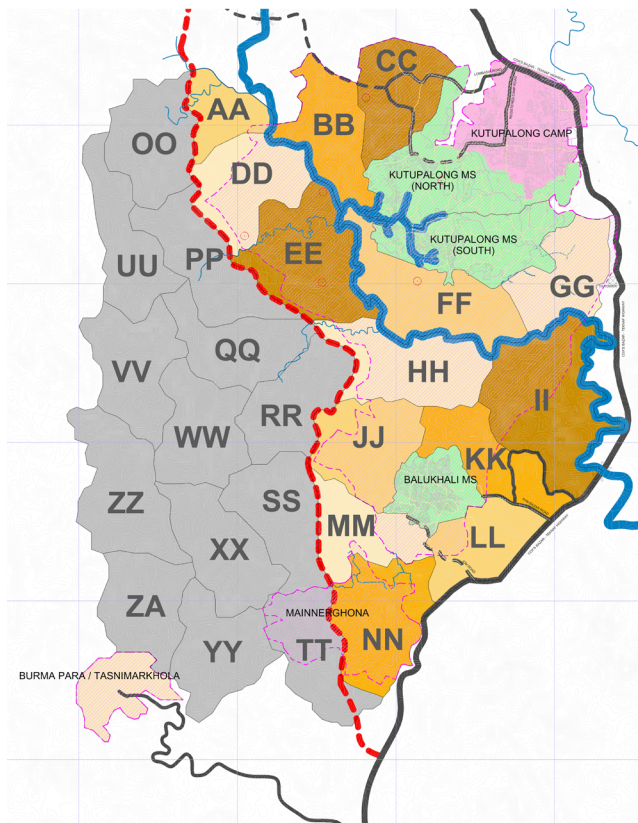


ZONE OO IN AUG 2018 AFTER THE EXPANSION

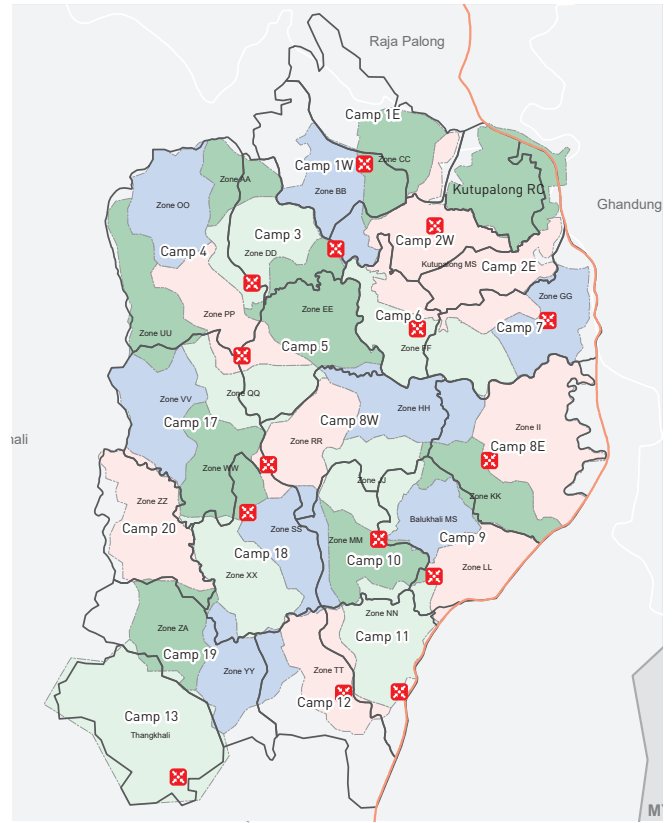




Drone image of zone OO after refugees settled, in February 2018. Densities were lower here than in other parts of the site, and services were relatively well distributed. However, this also meant that assistance was not evenly spread throughout the site, as other areas remained very dense and lacked services (Source: NPM, 14 Feb 2018).



The army road was opened along what used to be the western border of the KBE site at the time it was designed, before the further expansion in the grey zones. The humanitarian community used the notation AA–ZZ for about four months, to divide zones of comparable size (Source: ISCG, 30 Sep 2017).



The government, humanitarians and refugees were all using different zoning systems, which created confusion and caused coordination challenges. To address this, the Site Management Sector conducted a lengthy exercise to adopt a joint approach between the government's "camp" system and the international community's zones (Source: ISCG, 12 Feb 2018).



**PHASE 3 – EXPANSION AND MSDP**

The groundbreaking work undertaken in zone OO was now replicated by all parties involved in site planning, to varying degrees. The use of drones facilitated the collection and sharing of geo-referenced, visual information. Standard Operating Procedures for partners to engage with the site planners were created. For the first time, sectors took an active role in the site to ensure that there was land allocated for their ambitious and often unrealistic funding proposals. This hectic period was a “land-grab” by agencies who planted flags, marked out land and constructed facilities without due diligence or understanding the specifics of the site. Resources were concentrated on green-field areas where construction was seen as an easy win, rather than attempting to negotiate land for services in areas already settled. In a notable example from one area of the expansion zone, there was no space for shelters as all land was reserved for community buildings.

This prompted the development of a Macro Settlement Development Plan (MSDP), with the aim to compile and analyse all data into a single geo-spatially referenced “live” document that would zoom out from an isolated zonal plan perspective to a holistic macro scale across the whole site. The MSDP was intended to be a live planning and advocacy tool to allow decision makers to plan for the future, striving for an equitable distribution of and access to relevant services and infrastructure. Using a series of themes, including health, WASH, roads and bridges, infrastructure and environment, it was designed to have government ownership and to act as single repository for all the site planners to feed into.

The MSDP demonstrated that, in a matter of weeks, the whole KBE site would exceed planning densities and so additional land would be needed, especially if decongestion of the areas surrounding the original camp was to be attempted. Densities of less than 10m<sup>2</sup> per person were creating conditions comparable to the worst urban slums in Dhaka and, due to poor access to life-saving services in many areas, the Health Sector’s warnings were becoming more and more vociferous.

Although well-conceived, the MSDP largely failed to fulfil its potential due to issues of coordination and ownership. The ad-hoc and untested coordination platform was unable to grasp the need for this tool and lift it above the confusion of inter-sectoral coordination. If the MSDP had gained traction, it would have enabled improved planning for the location of key facilities and infrastructure, which have a direct impact on long-term development of the settlement.

**PHASE 4 – PLANNING FOR THE MONSOON**

By the end of 2017, the last of the new arrivals settled and the MSDP was updated with new themes. Planning was shifting away from the immediate allocation of land and provision of life-saving services to the medium and long-term perspectives. Exposure to the situation of the camp and a familiarity with the landscape resulted in an intergovernmental organization specialized in disaster preparedness being commissioned to undertake a landslide risk analysis of the main KBE site. Flood risk analysis was conducted by the lead agencies working on site planning.

It immediately became apparent that the monsoon rains starting in May/June, coupled with the annual cyclone seasons, could trigger a second wave of displacement, with resulting landslides and flooding potentially causing significant damage and loss of life. As the initial results of the analysis were released, coordinated actions were taken to mitigate against the natural hazards.

*The unique nature of the context has underlined the importance of site planning for the long-term safety of the refugees. It has highlighted the need to strengthen the role of site planners and elevate their voices within the coordination platform, as informed and early decisions will improve coordination and, in the long run, significantly improve the lives of those affected by displacement.*



*Without an agreed site plan or camp management structure in place, new arrivals started to level ground for shelter and self-settle.*



*The additional 1,000 acres were quickly occupied in the span of a few months. Given the scale of the site, a macro-settlement approach was needed to identify the strategic location of facilities and plan for the future growth, infrastructure and likely scenarios.*

## STRENGTHS, WEAKNESSES AND LESSONS LEARNED

### WEAKNESSES

- Partly due to the confusion created by the unorthodox co-ordination structure used in the Rohingya response, partly due to the unfavourable location and terrain, **site planning teams struggled to find an efficient technical forum** and “be heard” by the Inter Sector Coordination Group. Various bolt-on technical working groups were formed to try and bring those involved in site planning together. **These working groups often lacked focus and output due to unclear terms of reference**, as there was no precedent.

- Although one zone was planned in advance and more focus put on ensuring minimum standards there, this meant that **resources were spread unequally across the entire site**.

- **A lack of agreed naming and zoning system resulted in confusion**, wasted resources and delayed further key processes, such as a unified address system.

- **The Macro Settlement Development Plan largely failed**, as it was not adopted by the inter-sectoral coordination body.

- **Refugees were not engaged in site planning decisions early on**. This was partly due to the localized site management structure lagging behind the growth of the settlement, and the government camp officers being involved only in 2018.

### STRENGTHS

+ **Early decisions were key to shaping the response**, such as the building of the “Army Road” bisecting the camp and the development of the transit centre on private land.

+ **The use of drones proved vital** to not only understand the scale of the sites and the terrain, but also to communicate to the government and international community the need for intervention.

+ Recognizing that – with the coming of the monsoon season – the refugee crisis could morph into a physical disaster, **specialists in disaster risk prevention were brought in early** to advise and contribute to the planning.

+ **The lead site planning and site development agencies worked jointly** to formulate contextualized standards, develop the macro settlement development plan and conduct hazard mapping within the site.



Major infrastructure (such as the Army road and culverts) was needed to convert a forest land into a liveable settlement.

### LESSONS LEARNED

- **Demarcation and sub-zones need to be agreed and finalized by all parties as soon as possible.** This process should start immediately, with authorities (military, line ministries, etc.) taking leadership and ownership of the decisions, then trickling down through the humanitarian structure. There is a need to quickly understand the communities' pre-existing structures, as adoption will be quicker if actions are aligned to such social systems. There is often no time or perceived need for wider consultation. A single body of site planners should be given authority and trust, with a clear timeline for finalization. Delays will cause significant interruptions in service delivery. There must be a wider roll-out to communities and actual physical demarcations on the ground, so that refugees can orient and base themselves within appropriate spatial parameters, leading to location addresses.
- **Macro settlement development planning must start immediately.** A unit within the site planning department should start looking at the macro scale of settlement development from the outset. It is important to identify where and how refugee settlements can integrate with host communities and share/enhance existing infrastructure and services. This responsibility must be clearly entrusted to a lead agency who has the skill-set, unless the host government has shown willingness and capacity to take on such a task. The role of the government is crucial, especially when requiring additional land. But the planning will lose relevance unless it keeps pace with the speed of the emergency and humanitarian agencies' demands for land (e.g. hospital, logistic hubs, etc.).
- **Site planners must plan for a variety of possible scenarios, to understand what the site will “look like” 3, 6, 12, 24, 48 months into the future.** Site planners have a role to help interpret the topography, geomorphology, geography, natural hazards and the subtle interplay between the physical site and its socioeconomic development. They can also foresee the spatial impacts of population growth within refugee settlements. Key site planning interventions conducted early could allow for positive expansion and diversification of livelihood opportunities for refugees, increasing their independence and self-dignity. Site planners should have the authority to raise such issues to senior management, so they can be heard with equal value to other sectoral or organizational priorities.
- **Bold decisions must be taken early and with “no-regrets” philosophy.** Decisions related to densities or to where key services are provided will have long-term ramifications and impacts, affecting the residents for years to come. When relocations are part of a well formulated site plan that allows for longevity and natural growth, short-term disadvantages are largely rewarded with the significant improvement of refugees' living conditions. The longer people reside in an unsafe or inappropriate location, the more resistant they are to secondary displacement.



# CASE STUDY 3 / A.1 BURUNDI 2017–2018 / CAMPS CLOSURE

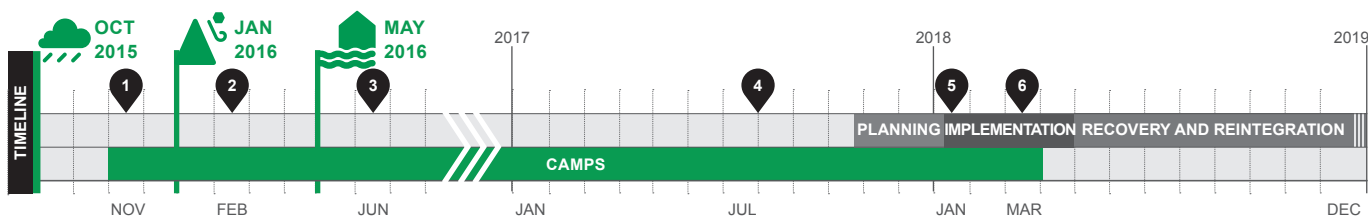
**KEYWORDS:** Camp decommissioning, Semi-permanent shelter, Rental support

<b>CRISIS</b>	<b>El Niño and La Niña rains and floods, October 2015–March 2016</b>
<b>TOTAL PEOPLE AFFECTED</b>	<b>5,068 households</b> (30,408 individuals) as of Jan 2016 (UN OCHA, <a href="https://bit.ly/2FRG533">https://bit.ly/2FRG533</a> )
<b>TOTAL PEOPLE DISPLACED</b>	<b>5,022 people</b> in the targeted provinces
<b>PROJECT LOCATIONS</b>	Provinces of Bujumbura Rural and Rumonge
<b>PROJECT BENEFICIARIES</b>	<b>767 IDP households</b> (5,022 direct beneficiaries) <b>40 households</b> plus 390 individuals from the host community
<b>PROJECT OUTPUTS</b>	<b>434 households</b> assisted with rental support <b>334 semi-permanent shelters</b> constructed Other outputs: provision of 727 NFI kits; 727 Hygiene kits; 434 Agriculture kits; 1,115 cash-for-work grants
<b>MATERIALS COST</b>	<b>USD 1,472</b> for the semi-permanent shelter, including latrine, kitchen and stone foundations <b>USD 1,050</b> for the semi-permanent shelter alone <b>USD 107</b> for the rental support for six months
<b>SHELTER SIZE</b>	<b>45m<sup>2</sup></b> (semi-permanent)
<b>SHELTER DENSITY</b>	<b>7.5m<sup>2</sup></b> per person
<b>PROJECT COST</b>	<b>USD 1,565</b> per household



## PROJECT SUMMARY

The project decommissioned four camps for flood-affected, displaced persons and offered shelter support, NFI kits, transportation and re-integration assistance to the camps' inhabitants. More than 5,000 individuals were resettled in safe and dignified areas, although they remained in need of more secure and durable solutions. Those who could move to a safe piece of land received semi-permanent shelters and latrines, while those who could not were provided with rental support for six months.



- 1** Nov 2015: IDP camp of Gitaza (Rumonge) established.
- 2** Feb 2016: IDP camp of Cashi (Rumonge) established.
- 3** Jun 2016: IDP camps of Mushasha I and Mushasha II (Bujumbura Rural) established.

- 4** Jul–Aug 2017: Return intention survey to evaluate options and the intention of the IDPs to return to their areas of origin.
- 5** Jan 2018: Partial destruction of Bujumbura camps due to floods.
- 6** Mar 2018: Decommissioning of the four camps completed.

### STRENGTHS

- + The organization used its previous role in the camps strategically.
- + Including the admin and finance team in the cash transfer activities.
- + Close involvement of the families.
- + Integrated programming.
- + Diverse group of profiles from different units in the organization.

### WEAKNESSES

- Poor communication and coordination both internally and externally.
- Access to the sites and establishing the beneficiary list took time.
- Not all IDPs could return due to lack of land titles.
- Time needed to deliver materials, safe plots of land and pass customs created delays.
- The project did not cover all the gaps (such as access to water).



The tents provided in the camps were intended to last about six months, but families lived there for two years, in battered tents like these at Cashi camp.

## CONTEXT

Burundi is affected by adverse climate events and an unstable socio-political and security situation. It is located in an earthquake-prone zone, and natural hazards such as floods, landslides and intense storms often cause severe damage to land and lives, particularly in peri-urban and rural areas.

## SITUATION BEFORE THE FLOODS

Close to Lake Tanganyika, communities depend on fishing and subsistence farming to make a living. These activities have encouraged the movement of people from the interior of the country to lakeside or hilly areas, where landslides are frequent during the rainy season. The most vulnerable people in Burundi often earn insufficient income to build flood-resistant houses or buy plots of land in lower-risk areas. Their houses are generally made of mud.

## SITUATION AFTER THE FLOODS

In October 2015, floods and landslides triggered by torrential rains caused thousands of Burundians to lose their homes, livelihoods and, in some cases, their lives. Four emergency camps were set up by the lead organization and its national partner to assist those displaced by the disaster. More than 3,700 people were still there in July 2017, and the rest of the displaced population (about 1,300) moved intermittently between the sites and their communes of origin, often in search of improved shelter or due to seasonal labour migration. The camps were managed by the national partner organization.

The shelter kits initially provided were intended to last approximately six months, though families lived there for more than two years. Living conditions rapidly deteriorated; tents were in dire need of repair; rain poured in from holes in the roofs, creating a muddy sleeping area and leading to increased incidence of pneumonia and other illnesses. In January 2018, the camps of Mushasha I and II were partially destroyed by floods. Many inhabitants expressed their desire to leave and requested assistance for a more durable shelter solution.

## NATIONAL SHELTER STRATEGY

The government and the international humanitarian community worked together to find a solution to close the sites and assist its residents. Activities were coordinated by the Durable Solutions Working Group, led by the Ministry of Social Affairs and co-led by UN agencies. In 2016, the government donated land in Kigwena to the inhabitants of Cashi and Gitaza camps. For those living in the camps of Mushasha I and Mushasha II, by the end of 2018 (two years after the floods) land had not been found yet. In the meantime, IDPs were supported by the organization through rental subsidies provided through this project, until a durable solution could be found.

## PROJECT IMPLEMENTATION

The project provided different shelter and settlement assistance options, as described in the diagram in the next page. In most sites, it was directly implemented by the organization, with a team of eighteen national and four international staff. For Kigwena, the implementation was conducted by three organizations: two for shelter and latrine construction and one constructing water supply points.

## DECOMMISSIONING PROCESS

The decommissioning of all camps took place in March 2018. To achieve this, the following activities were carried out.

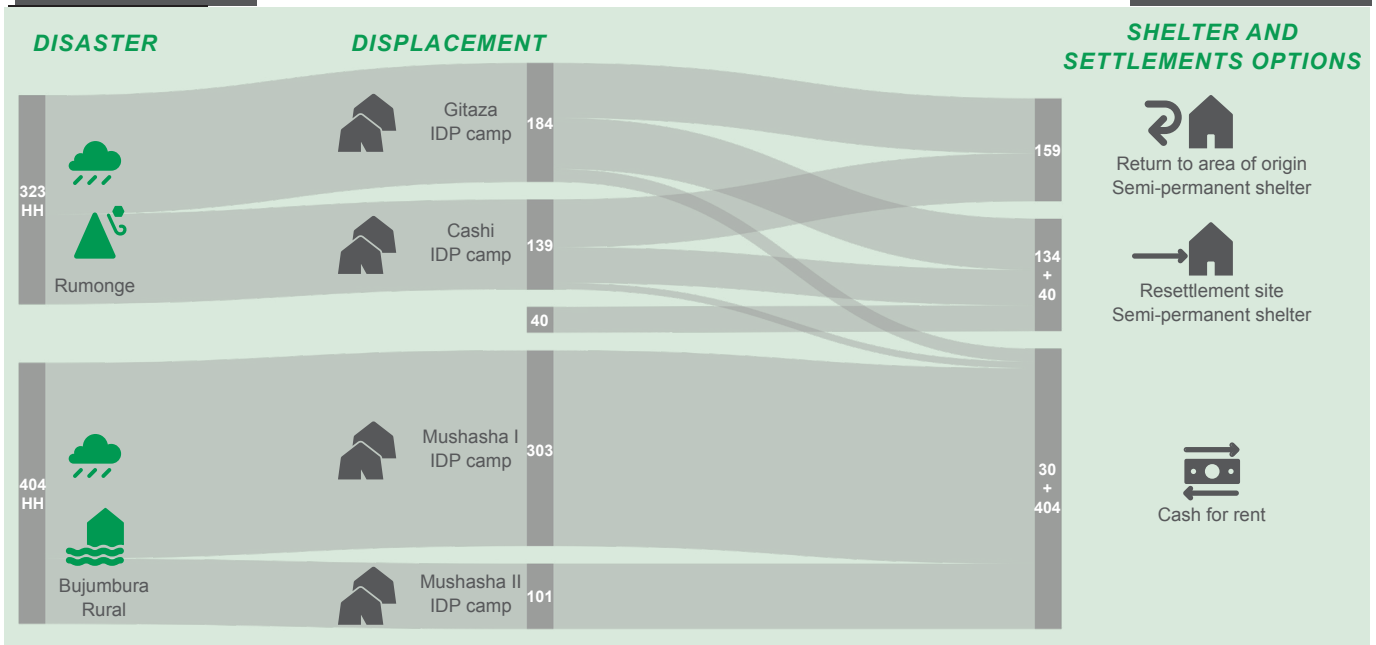
**BENEFICIARY REGISTRATION.** The initial list was provided by the Durable Solutions Working Group, acting as the link with local authorities and the leaders of the sites. This list, which included the type of shelter solution provided, was publicly approved and stamped by the Ministry.

**COMMUNICATION WITH COMMUNITIES.** Focus groups and communication activities were regularly carried out within the camps. The primary objective of these activities was to explain the project and obtain the information needed (including on type of assistance, dates of relocation, criteria for beneficiary selection and focal points in the camp), while also to listen to the needs and concerns of the camp residents. During



To facilitate the decommissioning process, the organization provided transport assistance and a cash-for-work grant for the dismantling and cleaning of tents and family plots in the camps.





Shelter and settlements options for decommissioning the four camps. All beneficiaries also received NFI kits.

these activities, women were encouraged to register as heads of household, participate in cash-for-work activities and be involved in choosing the most suitable shelter solution.

**CASH-FOR-WORK ACTIVITIES.** To generate income and involve them throughout the decommissioning process, all families were provided with a cash-for-work grant for the dismantling and cleaning of their tent and plot in the camp.

**DISMANTLING OF INFRASTRUCTURE.** A service provider was engaged to finalize the dismantling of the camp, taking care of health and pollution risks of WASH facilities.

**TRANSPORT TO THE RELOCATION SITE.** Additional transport assistance was provided for two sites:

- **A cash grant** was given to people returning to their places of origin, to help transport belongings.
- **Direct transportation** led by the Civil Protection of Burundi or IDPs from Gitaza and Cashi to the resettlement site, where they were met upon arrival by the organizations involved in construction.

**SHELTER AND SETTLEMENT OPTIONS**

**A. SEMI-PERMANENT SHELTERS IN RESETTLEMENT SITE.**

Those in Cashi and Gitaza who did not own land were relocated to the government-issued land of Kigwena, where 174 improved semi-permanent shelters were built. These included latrines and kitchens (including 40 for the most vulnerable among the host community). Due to budget restrictions, the shelters were built using corrugated iron sheets on the roof and temporary walls made of tarpaulins. The host community actively participated in the construction, supported through a cash-for-work programme.

**B. SEMI-PERMANENT SHELTER IN AREA OF ORIGIN.**

159 semi-permanent shelters were built in the areas of origin of the population living in Cashi and Gitaza camps, across seven different hilly locations. Due to timing and the complexity of transport to the isolated hills, some of which are located three hours away from a major road, the stone foundation was removed and households received cash to transport the materials (the equivalent of USD 2.50 per trip from the camp to the new land). Each household built its own latrine with materials provided and a cash grant for digging.



The project supported return by providing shelters on a resettlement site on government-issued land in Kigwena (above left). When land tenure and safety allowed it, shelters were built in the area of origin of the IDPs (above right, in the hills of Rumonge).

**C. RENTAL SUPPORT.** For those who could not return or resettle, the organization provided rental grants of about USD 17 per month for six months, to rent a house in their areas of origin until a durable solution could be found. The organization visited the houses to be rented to ensure habitability and acted as witness to avoid fraud during contract signature. The transaction was done by a Burundian bank that paid 50 per cent of the rent to the landlord as an advance to secure the house (as contracts in Burundi request a minimum of three months in advance). The other 50 per cent was paid to the IDPs to safeguard them in case they had problems with the landlord, so that they could move to another house or use it for other needs.

All the inhabitants of Mushasha I and II received rental support, because the plots of land in Gatumba's urban areas were in litigation. However, many IDPs were only living in the camps during the day, while staying with host families at night. The organization assisted all households linked to the camps with rental support to successfully decommission the camps.

For Cashi and Gitaza, rental support was provided for 30 households who could not relocate and whose plots of land were not deemed safe.

### HLP AND DRR

In the Rumonge hills, beneficiaries were unable to provide property titles and safety of the land from risk of landslides needed to be ensured. To address these issues, a team of five workers (lawyers and engineers) from the organization, a technician from the Durable Solutions Working Group and the local authorities, hiked for two weeks in the hills to visit each plot of land and provide technical approval for construction and a community validation document of the property. This was approved by the Ministry as ensuring land ownership.

Of the 220 plots visited, 159 were validated; beneficiaries received a copy of the document to avoid future litigations, while other supporting documents were kept at the organization and the Ministry itself. Many plots were not validated because of the risk of landslides, due to the slope of the land or the proximity to a river. The households in this situation were included in the rental support and agricultural kit activities; the organization supported them in their search for a house to rent.



The project decommissioned four camps for displaced persons in about four months. The sites were returned to the host communities who were able to use them as communal meeting spaces and playgrounds.

### LINKS WITH RECOVERY

The project supported the reintegration of the IDPs in the host communities through cash-for-work programmes and distributing agricultural kits to those receiving rental assistance. Two quick-impact projects were also implemented, focusing on strengthening social cohesion by addressing community needs. These included construction of drainage canals to mitigate the impact of future floods, new water sources and infrastructure. For both projects, part of the works was done by contractors and part through cash for work. 80 workers were recruited, trained and closely monitored by the site engineers.

Additionally, a food-for-work programme encouraged the households that benefited from the semi-permanent shelters to make adobe bricks or earth compressed blocks made by a local youth association. This would enable the upgrading of shelters into more permanent houses.

### MAIN CHALLENGES

Coordination posed a significant challenge, as each stakeholder involved had different goals, approaches and timelines. This created delays in the workplan, and additional staff and cars were needed to be present in various locations at the same time.

As the project was implemented at the beginning of the first wet season, rain prevented the construction of adobe bricks, which is why tarpaulins were eventually used for the walls.

### WIDER IMPACTS OF THE PROJECT

Improved semi-permanent shelters were built for the first time in Burundi, proving to be a well-adapted solution during the rainy season. It was accepted by the community and the Shelter Sector partners.

Thanks to the Kigwena resettlement intervention, one community had access to clean water sources and better schools. This project removed the need for women and children to walk for three hours for water each day and improved the access to education.

The communities where the camps were settled recovered their public spaces and transformed them into football fields, playgrounds and community meeting spaces.





## STRENGTHS, WEAKNESSES AND LESSONS LEARNED

### WEAKNESSES

- **Communication and external coordination with various stakeholders could have been improved.** Each stakeholder had different needs in terms of timing, project approach and goals. **Internal coordination and handover** between staff within the organization could have been better organized, as certain critical information, such as beneficiary lists and surveys, was difficult to find and the incoming project manager had to extensively search for it.

- **Access to the sites and establishing the beneficiary list took time** due to the constant mobility of the households living in the area; more than two months were needed to reach an agreement with the local authorities on the final list.

- **The shelters could only be built where beneficiaries could ensure a land title.** For those whose land could not be validated, the organization provided rental support grants for six months, but this did not represent a durable solution.

- To ensure quality, tarpaulins and NFI kits were procured internationally. This **created some delays** and caused the original workplan to be adapted. This issue could have been identified during the project development phase and used as an argument to extend the four-month implementation period imposed by the donor. **The organization could have also improved planning** for the procurement of the items, as soon as the funding had been confirmed.

- **The project did not cover all the needs.** Improved hygiene and sanitation were achieved among some, but not all, beneficiaries. **Access to clean water** remained a challenge for a few beneficiaries due to distance to water sources. Additionally, as semi-permanent shelters were not intended to last beyond one or two years, **further support would be required to rebuild them as durable houses.**

### STRENGTHS

+ **The organization strategically used its presence and role in the set-up of the camps** to inform the design of project activities. Access to previous evaluations provided a clear overview of the context and the needs, and camp set-up activities strengthened the capacity of the community to assist.

+ **Including the organization's administrative and finance team during cash transfer activities was helpful** to ensure transparency and accountability. **Transfers were made through a local bank and beneficiaries did not need to have a bank account** in order to participate. This solution provided anonymity to the beneficiaries and landlords, as well as improving security at the site and for project staff.

+ To help ensure community engagement and sustainability, **the organization closely involved the families** to select the site of their shelters and the type of assistance needed.

+ **Shelter activities were complemented** with WASH, counter-trafficking, health and reintegration programmes.

+ The programme benefited from **diverse profiles from different units in the organization**, including: engineers, lawyers, economists, psychologists and social workers, to provide comprehensive support.



*Although not all beneficiaries received a durable shelter solution, the programme successfully decommissioned all the camps and included reintegration components that benefited entire communities.*

### LESSONS LEARNED

- **The programme should have been longer.** Providing rental support within a very tight timeframe reduces the intentionality and sustainability required for a long-term reintegration objective. In a four-month project, the results can be achieved but the quality of the intervention in terms of counselling, capacity-building and social cohesion is reduced.
- **To reinforce the coordination** between partners in the field, ensure that all have the same goals, priorities and deadlines, which must be agreed upon before collaboration begins. **More time and resources should be dedicated to improving coordination** in future projects when multiple stakeholders are involved, as this would save time during implementation and facilitate the interventions.
- **In situations where different types of assistance are provided, better comparison of the options** is required, to reduce real or perceived discrimination and to ensure the final outcomes for all beneficiaries are as similar as possible.
- **External factors affecting implementation should be carefully considered**, and possible delays discussed with the donor early on. For instance, construction should have happened during the dry season, allowing for lower costs and more durable shelter outcomes. **Longer-term options should also be discussed in advance, to ensure project sustainability** and to avoid leaving beneficiaries in precarious conditions after the assistance ends.

## 4 / A.9

## Haiti - 2010 - Earthquake

## Case study:

See "A.4 Haiti - 2010 - Earthquake - Overview" p.12 for background.

**Country:**

Haiti

**Disaster:**

Earthquake

**Disaster Date:**January 12<sup>th</sup> 2010**No. of houses damaged or destroyed:**

180,000

**No. of people displaced:**

Approximately 1.5 million

**Project target population:**

1,356 families

**Occupancy rate on handover:**

105%

**Site density:**30m<sup>2</sup> / person**Materials Cost per shelter:**

Tent 300 USD (excluding transport)

Transitional Shelter 1,600 USD

**Project cost per shelter:**

Unknown

**Project timeline****Project description**

Families were relocated from a spontaneous settlement in the Haitian capital to a new planned camp in an area called Corail 20km away. The initial establishment of the camp was according to a carefully considered plan and relocation took place within a month. As with many sites in Haiti, two years after the earthquake, the future for the camp based population remained unclear.

**Strengths and weaknesses**

- ✓ Key actors worked together to prepare the site within an extremely limited timeframe.
- ✓ Strong coordination greatly assisted with the logistics of the relocation through information campaigns and consultation with the affected population.
- ✗ The urgency of the relocation initially left little opportunity for activities beyond the provision of shelter, water, sanitation, food, education and health services.
- ✗ Greater emphasis on ensuring access to existing or developing livelihood activities would have been beneficial had time allowed and the site was far from existing livelihoods.
- ✗ There was a significant delay in the follow up construction of transitional shelters, meaning people had to stay in tents in an area with little natural shade

from the sun and wind.

- ✗ The site does not represent a durable solution for the relocating families and remains one of 802 occupied camps for displaced families in Haiti.
- ✗ Rapid site preparation required significant investment at a time when financial resources for the provision of basic services were limited.
- The impact of having a camp in any location has to be carefully considered since it might end up as a permanent settlement.
- The decision to relocate the people was based on an engineering assessment of the risk of flash floods (high volume, fast moving water) at several spontaneous IDP locations. The identified population faced life threatening risk in their current location. In addition, there was an urgent need to decongest the camp to allow the introduction of basic services.





Left: an aerial photo of a typical spontaneous settlement in Port au Prince.  
Right: An aerial photo of Corail shortly after construction.  
Photo: Shaun Scales / NRC

## Background

See "A.4 Haiti - 2010 - Earthquake - Overview" p.12.

### Identification of families

Given the large population in camps within Port au Prince, weeks after the disaster, assessment teams identified specific areas at risk from flash flooding. They also assessed which engineering works could mitigate identified threats to life.

The assessment was conducted in spontaneous settlements within Port-au-Prince. Amongst others, it identified the Delmas 48 site as being at risk from flash floods and landslides during the approaching seasonal rains. The site had over 25,000 people living in high densities on a steep hillside.

The engineering team developed a mitigation plan that included the diversion of surface water and land stabilisation works. To complete these works, an estimated 7,500 people would be required to move from their current high risk plots.

The area of the settlement that needed to be vacated was marked. The high density population left little room for internal relocation and re-organisation.

### Selecting the site

State land is limited in Haiti and the power of the government to claim land for public emergency use is even more limited. Identifying alternative land close to neighbourhoods of origin was problematic as most potential sites were already occupied. The only immediately available land of sufficient size was 16km away. This did restrict opportunities for relocating families whilst maintaining access to livelihoods.

## Planning the site

The new site was based on a firm plan. Site assessments identified four separate 'sectors' for development with 'Sector 4' selected as the first to be prepared and occupied by the relocating population from Delmas 48.

The outline of the site was determined by existing natural drainage. This was upgraded to protect plots from surface water from above the site and to allow the development of an internal drainage network.

The camp was planned for occupancy as a transitional site with defined individual family plots, internal road networks and space for education, health, recreation and distribution facilities. The plan was strictly followed so that future development with longer term infrastructure could be possible. Although the site was officially temporary, the site planners took account of the possibility that it might not close soon.

Pending the development of durable solutions for the significant displaced population within Haiti, the maintenance of essential services to all camps, including Corail, remains a prolonged and significant challenge.

## Site construction

Land clearance and the development of a gravel road network were completed within two weeks. Construction progress was accelerated by foreign military forces, some who were due to depart imminently.

Land clearance allowed plots to be marked for shelter and infrastructure. Tents were then erected and temporary water and sanitation facilities provided. Fire breaks were built and a population density of 30m<sup>2</sup> per person was maintained.

## Why tents?

Allowing relocating families to bring their existing shelter materials with them was not seen as a sensible approach as they were generally of too poor a quality to re-use and it was too logistically challenging.

It was recognised that the commonly adopted emergency shelter strategy focused on the provision of plastic sheeting, but given the circumstances tents were provided as they were the best emergency shelter solution.

## Relocation

The Camp management agency with support from the Camp Coordination and Camp Management lead organisation initiated a settlement wide information campaign to identify families willing to relocate to a new planned camp.

The relocation of 1,356 families was completed in stages over a ten day period with transport provided by the United Nations mission. A plot identification system allowed each arriving family to be allocated an individual plot which was recorded as part of the registration process and assisted with the future delivery of services.

## Transitional shelters and other structures

The delivery of transitional shelter was significantly delayed. However by mid 2011, each family plot had an 18m<sup>2</sup> transitional shelter on it.

Each shelter included a raised cement finished plinth and a small veranda area covered by an extended truss roof.

Education and health facilities were formalised with semi



permanent or permanent structures of wood and brick construction. The original temporary latrines were also replaced with blocks built of bricks.

Eighteen months after the occupation of the site, kitchen gardens and a market selling foodstuffs, household items and handicrafts had been established. Small businesses, including restaurants, carpentry workshops and an art gallery were also established, although the primary source of income comes from work off site.

The school was adopted as a government institution with ministry of education providing salaries for teachers.

Following the occupation of Sector 4, further development of adjacent sites continued to allow for further relocations including 178 families affected by Hurricane Tomas in November 2010.

**The longer term**

Almost two years after the earthquake, people in camps in Port au Prince continued to receive limited free services in water, education, health, and other assistance.



A typical street in Corail with transitional shelters. Photo: Shaun Scales / NRC

However services were falling back as funds fell and organisations began to close projects. It was recognised that camp based services could contribute to the sustained presence in camps however an acute shortage of return solutions for the majority of the displaced population of former tenants, remained the primary factor hindering camp closure. This may have contributed to the sustained presence of camps.

Two years after the earthquake, the future for camp based populations across Haiti remained unclear. The exit strategy for Corail was always the closure of the camp following delivery of durable

solutions for the displaced population. However a lack of reconstruction continues to hinder this process, and Corail was not likely to close soon.

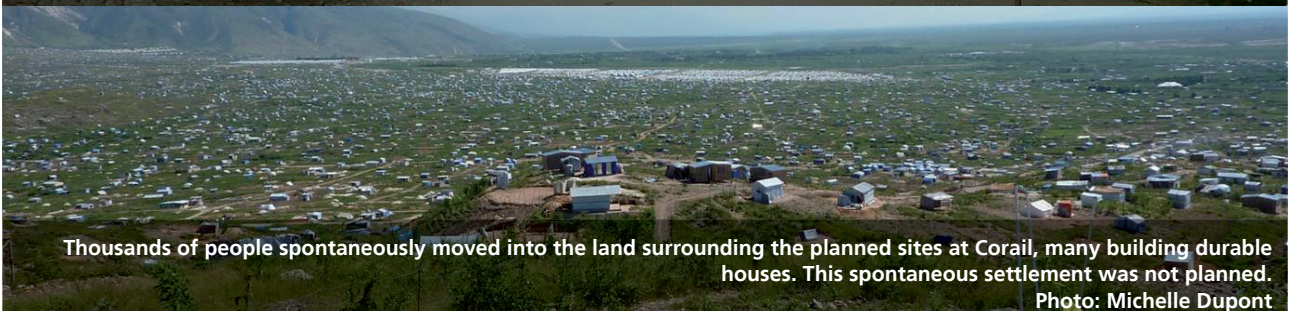
Corail was less densely populated than many spontaneous sites in Haiti. Transitional shelters were built, and this caused some confusion regarding the 'status' of the site. The future closure of Corail would require the same efforts as other emergency and transitional settlements. It also became surrounded by thousands of Haitians who had built their own shelters and houses.



Tents provided initial shelter at the site. This was later upgraded to transitional shelters. Photo: Shaun Scales / NRC



A Market area in "Corail Sector 4". Photo: Shaun Scales / NRC



Thousands of people spontaneously moved into the land surrounding the planned sites at Corail, many building durable houses. This spontaneous settlement was not planned. Photo: Michelle Dupont



## 5 / D.2 India - 1971 - Conflict - Refugees

### Case study: First camp planning guidelines

#### Project type:

Distribution of building materials with training support

#### Disaster:

Civil war in Bangladesh (then East Pakistan)

#### No. of people displaced:

10 million people

#### Project target population:

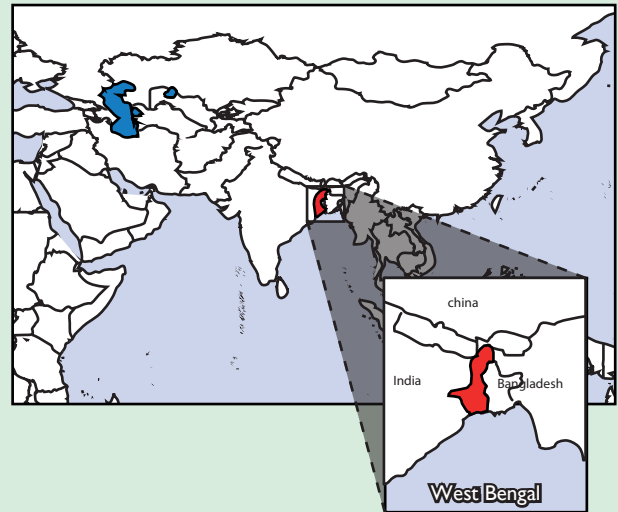
Seven camps, each with 15,000 to 20,000 people, with one camp designed to be extended for up to 300,000 people

#### Occupancy rate on handover:

100%

#### Shelter size

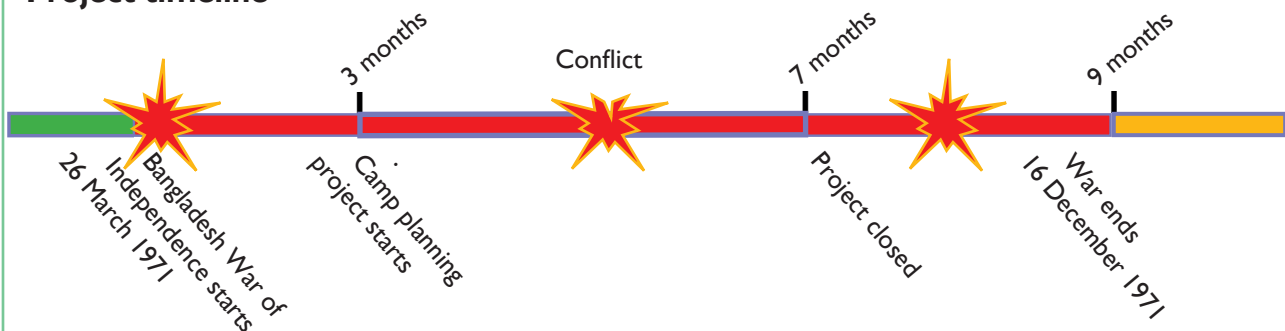
Various



### Summary

Refugee camps were designed in decentralised 'village' groupings. Construction and upgrading was undertaken in three phases: meeting basic needs, sustainable upgrading and maintenance of the camps. Emphasis was given first to sanitation and public health issues, and then to the emotional and social well-being of the inhabitants. From the lessons learned in this response, the first-ever humanitarian camp planning guidelines were developed.

### Project timeline



### Strengths and weaknesses

- ✓ Camp construction is a process. Life-and-death issues should be addressed first, but other issues should not be ignored in later phases of construction or upgrading.
- ✓ Standardisation of shelter types in later phases of camp development facilitated the development of the land grids and road systems.
- ✓ The decentralised 'villages' design allowed for the provision of services with less effort by staff, as well as adaptation to land contours, organisation of refugee administrative groups, protection of minorities and use of areas between villages for agricultural activities.
- ✓ Describing the construction of camps over a timeline

of 'phases' allowed the camps to be planned for an indeterminate and potentially long-term existence.

- The majority of sanitation and public health issues were caused by the poor choice of land for the camp in the beginning.

✗ Poorly supervised construction contractors created an exploitative (and illegal) black market for refugee labour.

✗ In open camps near large cities, it was sometimes impossible to stop local non-refugees from posing as refugees in order to receive shelter and food that was more than they could have expected to receive as members of the homeless population back in Calcutta.

## Before the war

Smaller refugee flows into West Bengal from what was then called East Pakistan had been continuous since the initial partition period of 1948-49. Many of the refugees were of the Hindu minority in East Pakistan. However, from 1949 to 1970, resentments over discrimination by the West Pakistan government continued to rise. They came to a head in the aftermath of the Bhola Cyclone of 12 November 1970, where the West Pakistan government was accused of mismanaging the relief effort and neglecting the affected populations, despite the fact that an estimated 500,000 people were killed. This resulted in an East Pakistan political party (the Awami League) gaining a landslide majority in December 1970.

Demonstrations for independence were met with a severe crackdown by West Pakistan military forces, leading to the declaration of independence on 26 March 1971 and the resulting war. The war only ended once India, fearing further destabilisation from mass influxes of refugees, intervened on the side of East Pakistan between 3 and 16 December 1971.

## After war breaks out

An estimated 10 million families, at a peak rate of tens of thousands per day, fled into West Bengal in India. Many arrived in self-settled camps in the vicinity of Calcutta. The Government of India and the Corporation of the City of Calcutta assigned land for camps, and the Indian Army provided basic supplies and administration.

A number of the camps were spontaneously self-settled. Both categories of camps were often on marginal lands and in low-lying areas prone to flooding.

The NGO had been involved in public health and water and sanitation projects in the camps, and had asked a consultant team to develop a more comprehensive strategy for camp planning and camp development. The consultancy worked directly on the implementation of various projects in the camps, ranging from the setting up of materials workshops to drainage excavation. They also implemented camp layout strategies from which a set of

guidelines of basic camp planning principles was written later that year.

Because of the continuous influx of refugees over a number of months and the sheer size of the displacement, many of the camps quickly became overcrowded. Matters were made worse by cholera outbreaks and the major flooding of many of the camps during the rainy season in September. Repatriation of the majority of the refugees started after the end of the war.

## Selection of beneficiaries (and assessment)

In the larger camps, the 'villages' layout was used to advocate the separation of Hindu and Muslim groups within the same camp. There were concerns about ensuring equal support for both groups.

The inhabitants of some of the smaller and more basic Phase I and Phase II camps were selected to be moved to the larger Phase III camps when the first camps were closed down.

## Land rights / ownership

Later reports stated that the Indian government had been at pains to insist upon the non-permanent nature of the camps, and had restricted the use of 'permanent' construction materials in the camps. After the end of the war, and the establishment of independence by Bangladesh, the great majority of the refugees were repatriated voluntarily. However, more than 1 million refugees (mainly Hindus) chose to remain in India. A few of the old camps have since been incorporated into the expanding local cities, although the inhabitants' housing rights are unclear.

## Technical solutions

The construction, upgrading and maintenance of the camps were divided into three phases, with the following emphases:

- Phase I: These were described as being the first emergency camps built at the start of the influx, with little prior thought given to siting or facilities. Sanitation was often poor, shelters were very basic and facilities were inadequate. The most pressing issues were the construction of drainage, the

upgrading of shelters and the need for more space and sanitation facilities.

- Phase II: These were camps with more stable populations. They had more rational designs. Shelter materials were distributed, basic drainage and sanitation were constructed, and roadways and public facilities were improved. Attention was also given to providing opportunities for both livelihoods and social activities.
- Phase III: With well laid-out roads and better drainage, focus moved to higher-standard public facilities and the considerations of creating more permanent settlements, if required. With a more stable camp population, different village areas could be used for cooperative experiments on different types of shelter or shelter groupings, to best adapt to the residents' needs.

In all phases, the design aimed to have the shelters grouped into small decentralised villages in order to support the refugees' self-administration, as well as to aid drainage and construction over uneven land. The decentralisation of services also meant that the refugees had greater access to those services, resulting in less unrest and greater health benefits.

This was also the first time that the clustering of shelter layouts in this way had been advocated.

## Implementation

The camp construction and administration was undertaken by the Indian authorities and much of the work was done by Indian Army engineers.

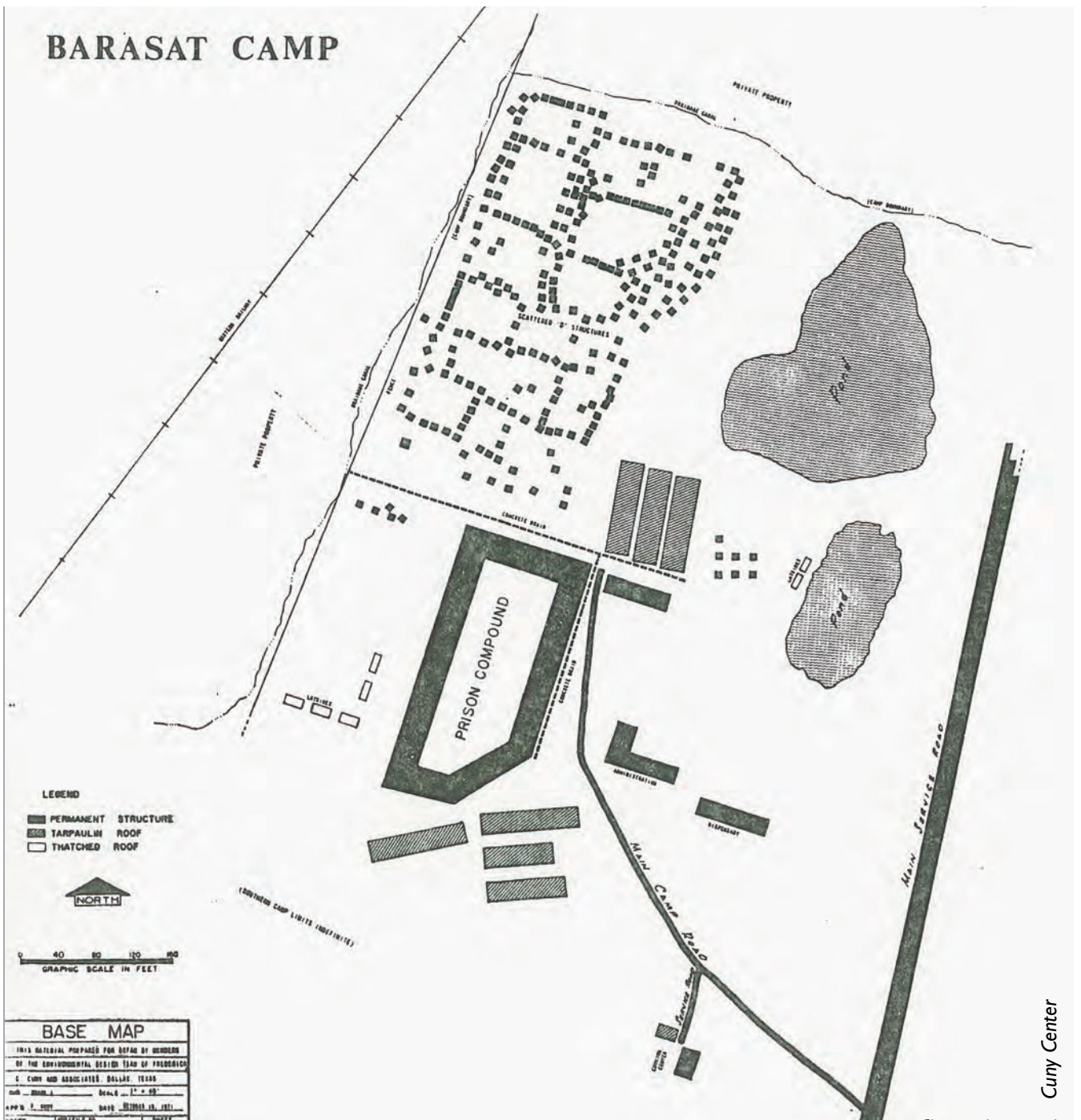
A process was eventually initiated to close down smaller Phase I and Phase II camps in flooded areas.

In the Phase III camps, workshops were set up to make bamboo matting for use in shelter construction – enough for 8,000 shelters in less than one month in one camp. Some of the works were done by paid contractors, but much of the local construction and upgrading was done by labour teams organised around the villages.

## Materials

The first shelters were made from thatch, bamboo and recovered materials. Later phases of shelters included polythene sheeting and some corrugated tin roofing sheets, as well as





Curry Center

Clustered camp plan

the bamboo matting. These were used for roofing, partitions and flooring in the shelters and latrines, and for the lining of drainage canals.

**Logistics**

The construction of the larger

Phase III camp benefited from its proximity to Calcutta in terms of the procurement of its construction materials. The ability of that camp to develop rapidly was attributed to the authorities' willingness to commit full-time professional technicians and

army engineers. Imported materials were later augmented by the bamboo matting made in the camp workshops.

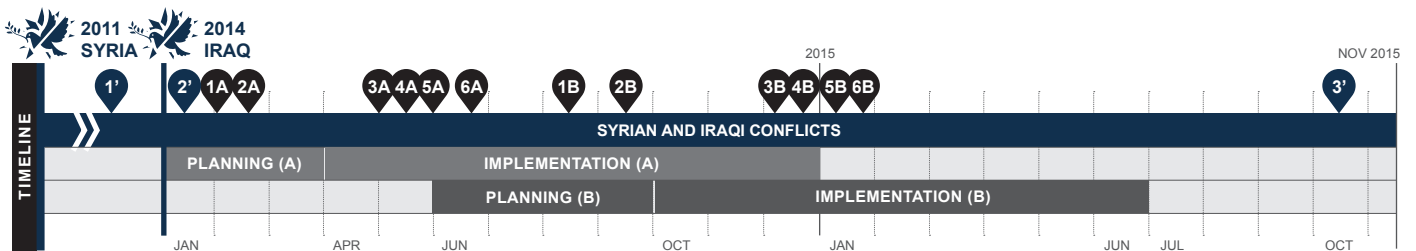
**CASE STUDY** 6/A.35 **IRAQ** 2014-2015 / REFUGEE CRISIS

**KEYWORDS:** Accessibility, Disabilities, Planned and managed camps, Materials distribution

<b>CRISIS</b>	<b>Syrian conflict, Refugees in Iraq. 2011-ongoing</b>	
<b>TOTAL PEOPLE AFFECTED</b>	<b>239,000</b> Syrian refugees in Iraq (as of 2016) <b>3.1 million</b> IDPs in Iraq (as of 2016) <b>213,000</b> Syrian refugees (January 2014) <b>85,000</b> IDPs in Iraq (January 2014)	
<b>PROJECT LOCATIONS</b>	<b>Domiz refugee camp, Dohuk Governorate (Project A). Kawergosk, Qushtapa, Darashakran, and Basirma refugee camps, Erbil Governorate (Project B)</b>	
<b>PROJECT BENEFICIARIES</b>	<b>901 households</b> (including 1,047 individuals with disabilities). 362 HH in Domiz camp, 157 HH in Darashakran camp, 112 HH in Basirma camp, 147 HH in Kawergosk camp, and 123 HH in Qushtapa camp	
<b>PROJECT OUTPUTS</b>	<b>901 shelters upgraded</b>	
<b>MATERIALS COST PER HOUSEHOLD</b>	<b>USD 350</b> (average for Project A), <b>USD 500</b> (average for Project B).	
<b>PROJECT COST PER HOUSEHOLD</b>	<b>USD 640</b> (Project A), <b>USD 900</b> (Project B). Estimated.	

**PROJECT SUMMARY**

The programme was carried out in five refugee camps in Iraq in two separate projects, focusing on shelter-related issues specific to persons with disabilities. The projects upgraded existing shelters and plots and adapted global accessibility standards to the camp context and cultural norms of the Middle East. The programme sought to adopt a holistic approach, through focusing not only on the individuals with disabilities, but also on the needs of the caregivers.



- 1 Project A: Feb 2014, Project B: Aug 2014: **Development of social and technical assessments and prioritization scoring.**
- 2 A: Winter 2014, B: Sep 2014: **Initial household level technical assessments completed, allowing the creation of a materials database.**
- 3 A: Early May 2014, B: Dec 2014: **Framework Agreements established.**
- 4 A: May 2014, B: Dec 2014: **Recruitment of skilled and unskilled labour.**

- 5 A: Late May 2014, B: Jan 2015: **Works initiated in camps.**
- 6 A: Jun 2014, B: Jan 2015: **Rolling handover of shelters.**
- 1' Mar 2013: **First refugee camp established in KRI for Syrian refugees.**
- 2' Jan 2014: **213,223 Syrian refugees in Iraq. 95,587 individuals (26,924 households) live in camps. Conflict begins between the Iraqi forces and the Islamic State in Iraq and Levant. 85,000 people displaced.**
- 3' Oct 2015: **245,585 Syrian refugees in Iraq. 94,628 live in camps. 3.21 million IDPs in Iraq.**

**STRENGTHS**

- + Tailored interventions for persons with disabilities.
- + Addressed a gap in accessibility and quality of life in camps.
- + Provided income to assisted households.
- + Challenged teams to think “outside the box”.
- + Pushed the issue of accessibility and upgrades to the forefront of discussions.

**WEAKNESSES**

- Tendency for staff to adopt standardized approaches.
- Fencing off household plots further isolated some households.
- Quality of work carried out by paid labourers varied greatly.
- Difficulty in finding balance between the specific needs and the more general household needs.
- Poor communication about targeting and project objectives.





Camps were established to accommodate Syrian refugees in the Kurdistan Region of Iraq. Over time, residents and organizations upgraded the shelters in the camps. However, many gaps remained in terms of accessibility and mobility throughout the sites. This project tried to address some of these issues.

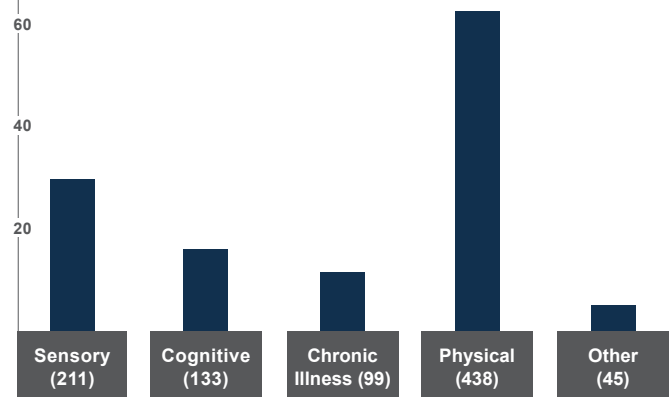
### SITUATION IN THE CAMPS

The first camp constructed to host Syrian refugees in the Kurdish Region of Iraq was established in March 2013 in Dohuk Governorate, with a camp population of approximately 55,000. In 2014, four additional camps for refugees were established in neighbouring Erbil Governorate, with a total population of 27,700. In the winter of 2014-2015, 13 camps were established for IDPs escaping conflict in Southern and Central Iraq.

In early phases, households were principally provided with tents as an emergency shelter solution, along with the required basic camp infrastructure. In the later-established camps, there was a greater variety of shelter types, ranging from pre-fab shelters to tents on concrete platforms. Concurrently, an increasing number of camp residents engaged in incremental upgrades, using construction materials from local markets. Local authorities initially restricted the use of “permanent” construction materials (e.g., concrete and blocks), though later opened up to their utilization in a controlled manner. In early 2015, the vast majority of shelter coverings in the camps were still constructed with soft materials. This was even more prevalent amongst households with individuals with disabilities, as they were less likely to have access to resources to improve their shelters.

Prior to implementation, the organization worked with UN agencies, local authorities and the refugee community representatives, to assess the number of households in need, the most common types of disabilities, and the current levels of support from other humanitarian actors. Many of the families with persons with disabilities reported that **the organization’s field staff were the first humanitarians to engage with them directly**, or that they had received no prior assistance addressing their specific needs. When the organization was funded for the Erbil project, two other organizations also received funding to provide assistance to persons with disabilities. **All three organizations worked together in the identification and provision of assistance.** Approximately 9% of households in the camps of Erbil were found to have at least one individual with disabilities. Although the types of disability were varied, the most prevalent were physical, sensory and cognitive and, in 30% of the cases, multiple conditions.

### DISABILITY TYPE - ERBIL CAMPS (%)



### SHELTER SECTOR STRATEGY

In camp settings, the shelter strategy principally focused on four points: land allocation for new camps; expansion of existing camps; provision of emergency shelter for new arrivals; and shelter improvements for refugees in camps prior to the influx. The strategy highlighted the general needs of different vulnerable groups, but there was no specific technical guidance on shelter construction or upgrading for persons with disabilities.

### PROJECT GOALS

This project aimed at improving accessibility in shelters, shelter plots and surroundings in camps, as well as the quality of life for individuals with disabilities, through different types of upgrades, such as floors, walls, openings and coverings, and including access to nearby water and sanitation facilities. It also intended to provide a starting point for incrementally improving accessibility across the camps.

### BENEFICIARY SELECTION

The organization targeted refugee populations in camps in Dohuk and Erbil governorates. Domiz camp was initially selected, following a multisectoral needs assessment carried out by another organization, which identified gaps in specific service provision for households with persons with disabilities. The camps in Erbil were later identified as having similar gaps. IDP camps were not targeted under these projects, though the organization had other projects and funding streams which targeted the shelter needs of IDPs.



The project worked on a variety of upgrades focused on improving the accessibility and Quality of Life of individuals with disabilities. From left to right: Shaded area and fencing around prefab shelter. Concrete slab improving wheelchair access. Fold out support railing. Shaded entrance and support posts for better access.

Potential individual beneficiaries and households were identified in close coordination with protection agencies, camp management and other actors providing services within the camps. Following the initial pre-identification process, social and technical assessments were carried out at the household level and were scored based on weighted vulnerability (both socio-economic and technical, as well as severity of disability and mobility or quality of life issues). This scoring phase determined which households were to be assisted, in which order, and played a role in defining the unit costs.

### PROJECT IMPLEMENTATION

Both **skilled and unskilled workers from the camp population** were employed to implement the projects. The aim was to include one unskilled labourer from each beneficiary household as a means to provide a source of income. Each project was implemented by a separate team of six to ten individuals, supervised by a project coordinator. Area based teams worked in pairs, with **technical staff** focusing on technical assessments, design solutions and construction monitoring, while household assessments, outreach and monitoring were covered by **non-technical shelter officers or assistants**. Materials were delivered to each household and works were carried out by labourers at household plots.

Though the construction time was generally brief, the overall implementation required multiple visits: an initial social and technical assessment, the development of a bill of quantities (sometimes this was carried out more than once due to the movement or modification of the household structure), regular supervision of works and follow-up monitoring visits.

### SOCIAL ENGAGEMENT

Detailed social and technical assessments were carried out at the household level, focusing on the needs and capacities of the household member(s) with disabilities and technical shelter conditions, as well as general household information. **Social and technical field staff worked closely with the individual with disabilities and their primary caregivers, to identify and prioritize specific upgrades** to improve mobility and quality of life. The teams continued to engage the households to ensure that upgrades would be used as intended and met the needs of both the individuals and their caregivers. Visits were done jointly with a partner organization carrying out WASH upgrades, in order to ensure complementarity of the interventions.

**Commonly experienced engagement challenges** included:

- Eliciting the priorities of the individual beneficiaries when their disability prevented them from communicating effectively;
- Balancing the expectations and wishes of the families with the issues related specifically to the persons with disabilities;
- Observing the shelter and plot to recognize usage patterns, in addition to listening to expressed needs;

- Time required to elicit information from persons with special needs and their caregivers;
- Dealing with requests to replace mobility items that were outside the project scope and expertise of field staff;
- In Erbil, targeted assistance led to significant pressure from households who did not meet the selection criteria.

### COORDINATION

The organization closely coordinated with other actors implementing shelter and WASH activities in the targeted camps, to ensure complementarity and higher impact. At the household level, the organization focused its efforts on the plot and the shelter itself, while another organization aimed to address the WASH specific needs. **Assessment forms were harmonized, initial planning was done collaboratively, and project managers met regularly** to discuss project implementation. Technical teams jointly carried out the technical assessments during implementation, to ensure that all inputs were considered when designing the interventions for each plot. Additionally, **a multisectoral Technical Working Group was formed** to develop guidelines for accessibility and quality of life upgrades in the camp settings of Iraq. Though the final product was never completed, the working group served as a coordination and communication forum, to address some of the challenges encountered during implementation.

### MAIN CHALLENGES

There are a number of guidelines at the global level for the construction of shelter in emergencies for people with disabilities<sup>2</sup>. Although the guidance highlights the need to tailor interventions to each individual's needs, it includes little regarding how this tailoring can be done practically, and at the same time how such projects can be scaled up, or streamlined, given the time and budget constraints often faced by humanitarian organizations in the field.

Commonly found challenges included:

- Attaching handles to soft tent or plastic sheeting walls and working with non-standard self-built shelters, expansions and plots;
- Support for people (or their caregivers) sitting down and standing up from the floor;
- Extending supports to the outdoor of the shelters;
- Improving accessibility to latrines on public pathways, in between tents in close proximity;
- Improving access points (particularly for tents) for persons with disabilities and their carers;
- Customization versus standardization;
- Redesigning solutions to adapt to new locations, when households moved;

<sup>2</sup> See, for instance, All Under One Roof, IFRC 2015 (<http://bit.ly/2iDTTCT>), and Guidelines for Creating Barrier-free Emergency Shelters, Handicap International 2009 (<http://bit.ly/2iuB30o>).





Works also included mobility upgrades within plots or across the camps. From left to right: Concrete pathway and railing leading from shelter to shared/communal latrine. Concrete slab improving wheelchair access. Handrails, concrete stairway and pathway around or between shelter plots.

- Rapid evolution of camps and varying and inconsistent rules for shelter upgrading;
- Households uninstalling materials and repurposing them for things other than accessibility.

### MATERIALS

Materials were sourced from local vendors, through flexible framework agreements that allowed the organization to procure most items based on need. Materials were then distributed to each household according to site-specific BoQs, developed by the technical staff. While this approach allowed for rapid delivery, it also had the unintended consequence of pushing the team to work within existing material resources. This, at times, hampered creativity in identifying unique solutions to the specific needs of the individuals with disabilities.

### REMARKS AND WIDER IMPACTS

In their geographical areas of implementation, the projects were unique, as they targeted the specific shelter-related needs for individuals with disabilities and their caregivers, through tailored upgrades. Although these interventions reached a relatively small number of households, niche projects such as this enable to fill gaps created when carrying out larger scale standardized interventions (such as the construction of plots/shelter/WASH facilities). Of course, there were other vulnerabilities, within the camps, that fell outside the scope of this project and have been addressed in following projects, by the same and other organizations.

Finally, these camp-based projects served as a basis for additional programming, which addressed these same issues for households residing out of camps.

## STRENGTHS, WEAKNESSES AND LESSONS LEARNED

### STRENGTHS

- + **Tailored interventions were implemented**, based on comprehensive consultations, to address specific and self-identified needs of persons with disabilities and their caregivers.
- + **The project addressed a significant gap in accessibility** and quality of life at the household level, existing since the establishment of the camps.
- + **Short-term income was provided to assisted households**, and additional short-term employment opportunities to camp residents.
- + **Teams were challenged to think “outside the box”** and develop innovative solutions to address the specific needs of the individuals assisted.
- + **The issue of Accessibility and Quality of Life upgrades was pushed to the forefront** of discussions within coordination meetings and amongst shelter partners.

### WEAKNESSES

- **Tendency for staff to adopt standardized (rather than tailored) approaches** led to inconsistent outcomes, principally due to time constraints and the feeling to be bound to the originally developed material lists.
- **Fencing off household plots** was a frequent request, to keep children with cognitive disabilities from wondering off and potentially endangering themselves and others, but it also potentially further isolated such persons from the community.
- **The quality of work carried out by paid labourers varied greatly**; supervising a large number of sites spread over numerous camps posed significant challenges for the team.
- **The difficulty in finding a balance** between the specific needs of individuals with disabilities and the more general needs of the household as a whole.
- **Poor communication about targeting and project objectives** with the camp community at large. As the project was the first in camps using targeted coverage, the communication could have been improved, in order to reduce requests for assistance by households that were not within selected groups.

### LEARNINGS

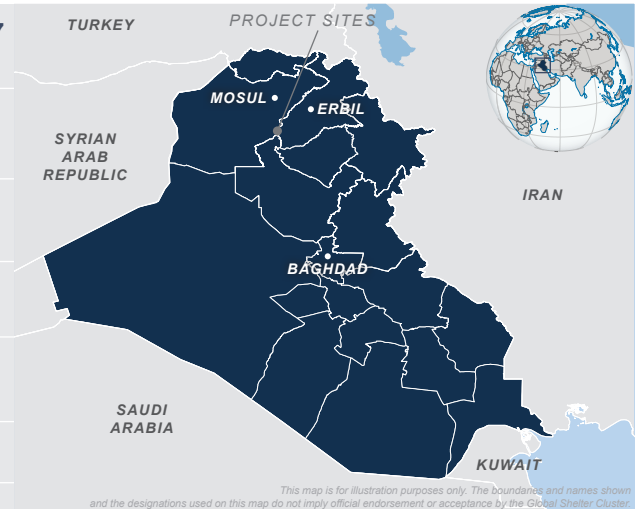
- **Keep the needs of persons with special needs at the forefront** of shelter interventions, from the onset of an emergency.
- **Standardized items and materials**, available through framework agreements, **can impair the development of customized solutions** to address specific needs, which could instead use items procured outside these agreements.
- **The lack of consistent leadership in the Technical Working Group** focusing on Shelter and WASH Accessibility, led to the final intended product not coming to fruition.
- **Foster and encourage the lateral thinking and observation skills** of team members, in order to identify creative solutions for individual needs.
- **Provide additional support to staff** that are consistently interacting with individuals and households in dire conditions, including early **training on engagement with persons with special needs**.

CASE STUDY

# 7 / A.26 IRAQ 2016–2017 / CONFLICT

**KEYWORDS:** Site planning, Infrastructure, Coordination, Coverage and scale

<b>CRISIS</b>	<b>Mosul operation, 17 Oct 2016–July 2017</b> (though displacement continued)
<b>TOTAL PEOPLE DISPLACED*</b>	Over <b>170,000 households</b> (1,021,476 individuals) from 17 Oct 2016 to 29 Jun 2017
<b>PROJECT LOCATIONS</b>	Al Qayyarah sub-district, Mosul district, Ninewa governorate
<b>PROJECT BENEFICIARIES</b>	<b>17,500 households</b> (105,000 individuals)
<b>PROJECT OUTPUTS</b>	<b>Two emergency sites established</b> with a capacity of 10,000 and 7,500 households
<b>SHELTER SIZE</b>	<b>24m<sup>2</sup></b> (standard government tent of 6x4m)
<b>SHELTER DENSITY</b>	<b>3.5–4m<sup>2</sup></b> per person



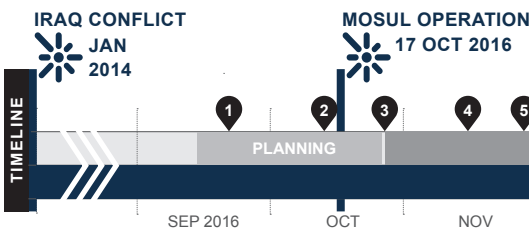
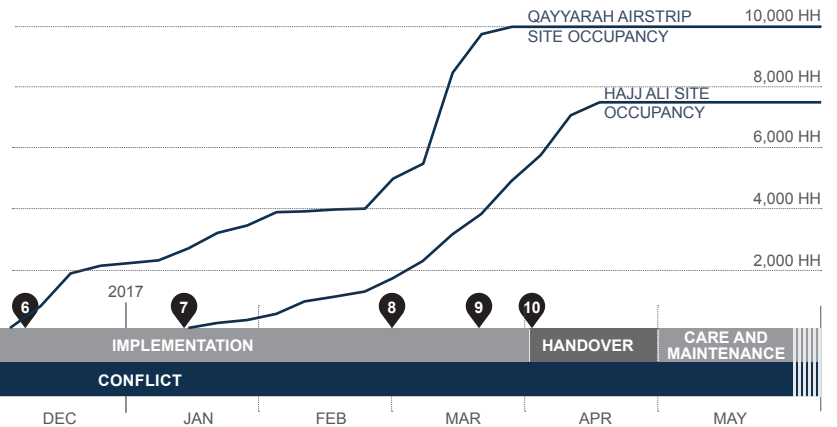
**PROJECT COST**      **USD 1,700** per household

**MATERIALS COST**      **USD 1,200** per household (estimation including the tent and installation costs)

\* Cumulative number of IDPs displaced by Mosul liberation operation from 17 October 2016 to 29 June 2017. Source: DTM.

**PROJECT SUMMARY**

To respond to the mass displacement as a result of military operations in Mosul, this project established two emergency sites following a request from the government and in coordination with CCCM and Shelter Clusters. The organization adopted a rapid-response settlement approach whereby – together with partner agencies – the sites were selected and planned in a month and an initial capacity of 1,200 households was established within two months. Additional capacity was created incrementally, with infrastructure upgrades such as water supply, electricity and service facilities. The project eventually achieved an accommodation capacity of 17,500 households within less than six months.



- 1 21 Sep 2016: Initial site assessments.
- 2 15 Oct 2016: Government approval of Qayyarah Airstrip emergency site.
- 3 27 Oct 2016: Site development and construction start.
- 4 14 Nov 2016: First 1,200 tents installed at Qayyarah site.
- 5 End-Nov 2016: Installation of communal facilities and upgrade works begin in phases.
- 6 6 Dec 2016: First 180 IDP families arrive at Qayyarah site.
- 7 5–26 Jan 2017 East Mosul offensive leads to another IDP influx in the sites.
- 8 Feb–Mar 2017: West Mosul offensive triggers new surge.
- 9 23 Mar 2017: Qayyarah site completed (capacity 10,000 households).
- 10 1 Apr 2017: Haj Ali emergency site completed (capacity 7,500 households).

**STRENGTHS**

- + Timeliness of the intervention.
- + Leadership and coordination generated buy-in.
- + Development of special guidelines on the planning, set-up and maintenance of the emergency sites.
- + Remote site planning through observation and satellite imagery.

**WEAKNESSES**

- Minimum surface area of the site.
- Vulnerability to rains and floods.
- Delays in installation of water and sanitation facilities.
- Tents quality and durability.





Before mine clearance was completed, sites were only accessible from the perimeter. Planning was done remotely, by observation and thanks to satellite images.

## CONTEXT

For more background on the Iraq crisis and shelter response, see overview A.33 in *Shelter Projects 2015-2016*.

### BEFORE THE MOSUL OPERATION

Before the Islamic State of Iraq and the Levant (ISIL) took control of Mosul, the city had a population of 1,377,000 people. After ISIL occupation in June 2014, up to half a million people were believed to have fled.<sup>1</sup> In 2016, the operation to liberate Mosul was expected to be the largest and most complex humanitarian response in the world. In February, lead humanitarian agencies started working on a contingency plan, estimating a worst-case scenario of up to 1.5 million people requiring assistance.

In September, 200,000 civilians were expected to be displaced during the first week of the military operation. Following a request from the government, the organization agreed to support the establishment of emergency sites<sup>2</sup> in locations protected by security forces, and immediately deployed a surge team composed of five engineers and site planning experts.

### SITUATION DURING MILITARY OPERATIONS

Since military operations to retake Mosul started on 17 October 2016, displacement figures raised on a daily basis.

During the first few weeks, operations took place in areas surrounding the city, so people fled to nearby villages and stayed with host families or in unfinished buildings. In December, the operation reached the city and IDPs started to arrive to the emergency sites, directed by the military. Large-scale displacement out of the city continued until the completion of the operations in late 2017. By the end of June 2017, over one million individuals were displaced, with nearly 350,000 hosted in camps.<sup>3</sup> Access to safety and provision of basic services for those fleeing Mosul were considered the main priorities by the government and the humanitarian community.

### COORDINATION

For site identification and set-up, the organization worked with the government and humanitarian coordination centres specifically established for this crisis. The CCCM Cluster was the primary forum under which technical standards were discussed and multi-sectoral services coordinated. The Shelter Cluster focused on delivery of tents and Non-Food Items, while the WASH Cluster coordinated with partners for installation of latrines and bathing facilities, as well as other WASH services. Further, civil-military coordination was provided by a humanitarian coordination agency to support communication between the organization and the Iraq Security Forces, for access and safety issues.

<sup>1</sup> UN-Habitat, Mosul city profile, October 2016.

<sup>2</sup> These are basic camps relatively quick to set up and with minimum services such as WASH.

<sup>3</sup> DTM, 2017. Mosul Crisis – Population Movement Analysis.

### SITE IDENTIFICATION

Due to the scale of the needs and the administrative burden of preparing and managing multiple small sites, it was agreed that a few large sites would be set up instead.

With support from the government, the CCCM Cluster and civil-military coordinators, the organization and partners conducted joint site selection missions to assess eight government-proposed locations near likely escape routes from Mosul. Due to the urgency, only a limited number of criteria were assessed: safety of the location, terrain and topography, mine contamination, and availability of water and electricity. The assessment team was composed of civil engineers, WASH experts, mine-action and civil-military coordination specialists. This process was challenging, as the military plan was confidential and operations largely unpredictable. The security situation – due to the presence of armed groups – was also dynamic and caused delays in finalizing site selection.

As Iraq was coming from decades of war, it was very complex to assess mine risks in a short time frame. For this reason, multiple sources of information were analysed, and high-risk locations were excluded. Other sites were discarded due to serious security issues, with fighting occurring nearby.

Based on the above criteria and guidance from the government, the organization suggested two large sites for immediate set-up. These were located in rural areas surrounded by agricultural land with host community houses scattered around. To determine the site perimeter, joint visits were conducted with site planners, the CCCM Cluster coordinator, government officials and host community leaders, which were followed by the issuance of official government letters.

### EMERGENCY SITE GUIDELINES

Due to the uncertainty of the military operations, funding could not be mobilized and plans could not start until just one month before the influx. For this reason, the organization proposed to adopt a rapid-response settlement approach. This consisted of providing shelter and basic services first, and then incrementally upgrading the site in phases, to meet minimum humanitarian standards. The approach initially received strong criticism because of the low standards in the first phase. To gain cooperation, special emergency site guidelines were developed and the approach had to be carefully discussed and presented to various stakeholders.

The guidelines, developed by the Shelter, WASH and CCCM Clusters, determined minimum requirements for site planning, earthworks, drainage, shelter options, security, access, WASH and other site facilities.

### SITE CAPACITY ESTIMATES

The project initially aimed to accommodate as many as 200,000 individuals. Once the detailed military operation plan was revealed, the target figure was adjusted to 105,000 based on anticipated displacement figures. Another six locations were assessed and site plans for 100,000 individuals across those locations were developed, in case of changes in military operations.

**PROJECT IMPLEMENTATION**

The organization directly implemented site planning and construction works, while collaborated with partner agencies for the installation of other site facilities for all the other humanitarian clusters. The project was implemented by the technical team of the organization composed of four international and 10 national staff (including two site planners and eight civil engineers). Local contractors were hired to carry out construction works under the supervision of field engineers. Most labour was hired from the host communities upon request of the government, to help mitigate possible tensions.

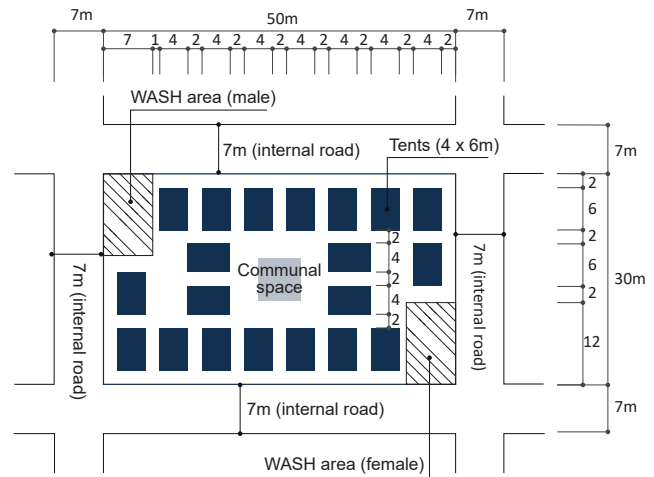
**1. SITE PLANNING.** Initial site plans were developed based on the guidelines. A standard block layout was discussed with CCCM, Shelter and WASH Clusters. This included 20 family tents in an area of 30x50m and considered the sex segregation of WASH facilities, a communal space, and kept a minimum distance of 2m between tents. Although this spacing was very limited and did not allow for significant future expansions around tents, the Shelter and CCCM Clusters agreed to this solution due to space constraints. Tents were gathered around a common space and, as suggested by WASH partners, WASH areas were located at both corners of the block, so that their construction – which was supposed to happen at a later stage – would not interfere or damage the tents.

Shelter blocks were then arranged within the site perimeters considering contingency space for future expansions. Some blocks were also pre-allocated to communal facilities to be installed in a later step. The sites were divided into zones and the construction schedule planned zone by zone.

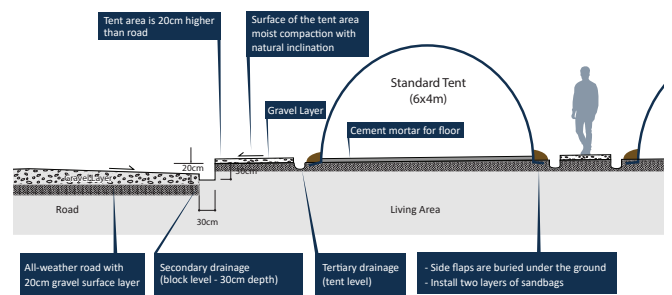
Until mine clearance was completed, due to potential mine contamination, only perimeter roads were accessible, and staff were not allowed to step into the middle of the site. High-resolution satellite imagery was used to plan the site remotely.

**2. MINE CLEARANCE.** In coordination with mine-action agencies and security forces, surface mine clearance – instead of full demining – was conducted before construction, taking less than a week.

**3. EARTHWORKS AND SITE PREPARATION.** This phase included emergency earthworks, such as ground clearing, levelling, grading and compacting. This was followed by the construction of internal roads, storm-water drainage, security fences, and access gates that CCCM agencies would manage for population counting. Internal roads were excavated to raise the shelter plots of 20cm above road level.



Typical block layout – plan. Each block contains 20 tents and two WASH areas.

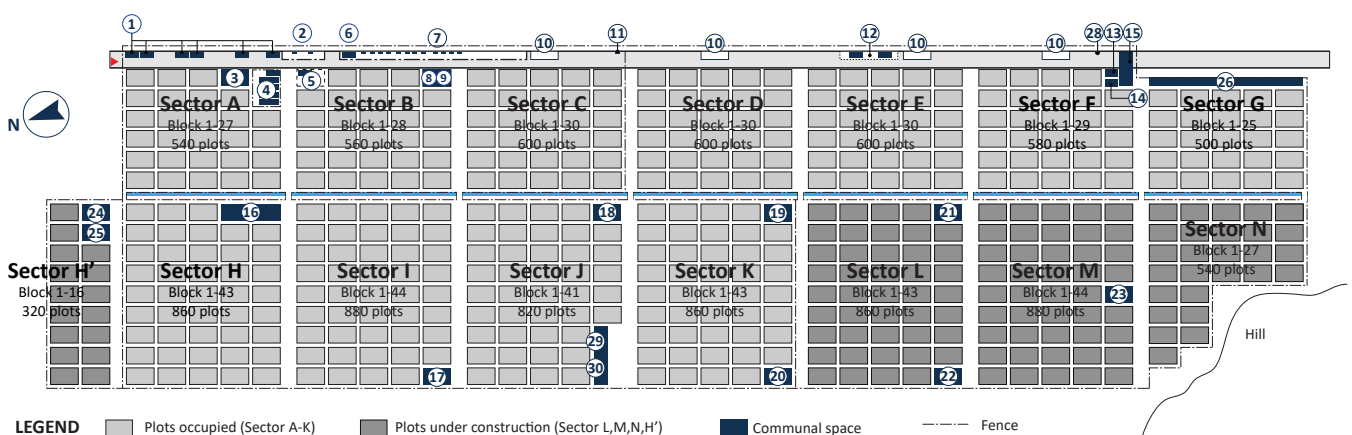


Cross section. Sandbags protect the tent base, and roads are excavated 20cm.

**4. TENTS AND BASIC STRUCTURES.** After demarcating their location, government-standard tents were installed and their base surrounded by sandbags. Mobile storage units and containers were installed for humanitarian services and camp management activities in areas that were easily accessible from the main gates.

**5. WASH INFRASTRUCTURE.** The WASH Cluster assigned partner agencies for the installation of latrines, bathing facilities and water tanks. The organization constantly shared detailed construction progress with WASH partners.

Once WASH facilities were installed, the block capacity was reported to the CCCM Cluster for allocation. Based on the figures, the security forces directed IDPs to the zones that were ready. Further improvements were conducted once IDPs were already living in a zone, through the following two steps.



Qayyarah Airstrip site plan. 1) NFI storage (rubb hall); 2) Construction office; 3) Waiting area (rubb hall); 4) Logistics hub; 5) Warehouse (rubb hall); 6) Distribution space (rubb hall); 7) Camp management / WASH / Protection; 8/21) Psychosocial support; 9/17/23) Clinic; 10) Livelihood programme (small shops); 11) Legal support; 12/30) Distribution site; 13) Child-friendly space; 15) Women-friendly space; 16/26) Education, child-friendly space; 18) Camp management; 19/28) Protection; 25) GBV support.



## 6. SITE UPGRADE, LIGHTING AND ELECTRICITY.

Concrete was poured over the tents' floors and gravel placed in the outdoor living areas. During this step, families temporarily moved to adjacent empty tents or large unused multi-purpose tents, or were hosted by other families in the camps. Perimeter lighting was installed in all corners of the blocks and standby generators and electricity lines were provided for camp management facilities.

**7. HUMANITARIAN SERVICE FACILITIES.** While IDPs settled in sites, the organization coordinated with CCCM, Health, Protection, Education, and Logistics Cluster partners to prepare spaces for facilities such as clinics, temporary learning centres, women-friendly spaces, logistic hubs, and distribution sites. This coordination was challenging, as all partners had different timelines and funding constraints. Because of the urgency of the intervention, meetings were held regularly both at inter-cluster and field level, with all clusters involved being asked to nominate one agency focal point.

Within a month from the start of construction, an initial 1,200 tents (60 blocks) were erected with latrines and gradually occupied in December. By the end of the year, 2,200 households were accommodated in the Qayyarah Airstrip emergency site.



In less than six months, capacity for 17,500 households was established in two sites. The main roads were used for small shops and storage of materials.

## DRAINAGE AND FLOODING

In addition to the small tertiary drainage around each tent, 30x30cm secondary drains were dug around shelter blocks. These were connected to large ditches around the perimeter of the site through pre-cast concrete culverts. The site drainage system was eventually connected to natural drains to discharge rainwater from the site.

Drainage was designed based on preliminary studies on ground conditions, rainfall data and a topographic survey, as well as after checking runoffs to nearby valleys.

In 2017, after unprecedented levels of rainfall, low-lying sectors of the sites were flooded mainly because of the surcharge of water from an adjacent site and poorly constructed culverts in surrounding residential neighbourhoods.

Storm-water drainage was later expanded in early 2018, after five new sites were built around the main Qayyarah Airstrip site. This consisted in wide earthen channels with protective berms and large concrete culverts.

In late 2018, minor flooding occurred due to the blocking of culverts by informal settlements outside the site.



One site was vulnerable to heavy rains and suffered minor flooding during winter. In 2018, storm-water drainage channels and culverts were upgraded.



Government standard tents of 6x4m were installed in clustered blocks of 20 each. Space for extensions was minimal but, after families had moved in, upgrades were conducted to the floor and electricity was installed. Partners could then build service facilities in specific blocks pre-allocated in the site plan.





Using a rapid settlement approach, families were accommodated before all facilities and infrastructure were installed. Gravel was added in the shelter areas and roads excavated 20cm lower than the blocks, to prevent flooding.

**SUPPLY OF TENTS**

Tents were partly supplied by the government and partly procured by the organization within the country. These followed the government standard specifications and had an estimated lifespan of 6–12 months. About two years after the sites were set up, most tents were damaged due to the extreme weather conditions and the flooding events. In early 2019, the organization was planning to replace the mobile components of over 23,000 such tents, while maintaining the steel structure.

**HANDOVER, CARE AND MAINTENANCE**

After the completion of construction in April 2017, one site was handed over to a CCCM partner agency. The organization provided site maintenance trainings and remained responsible for site maintenance for the following six months. The other site continued to be managed by the organization.

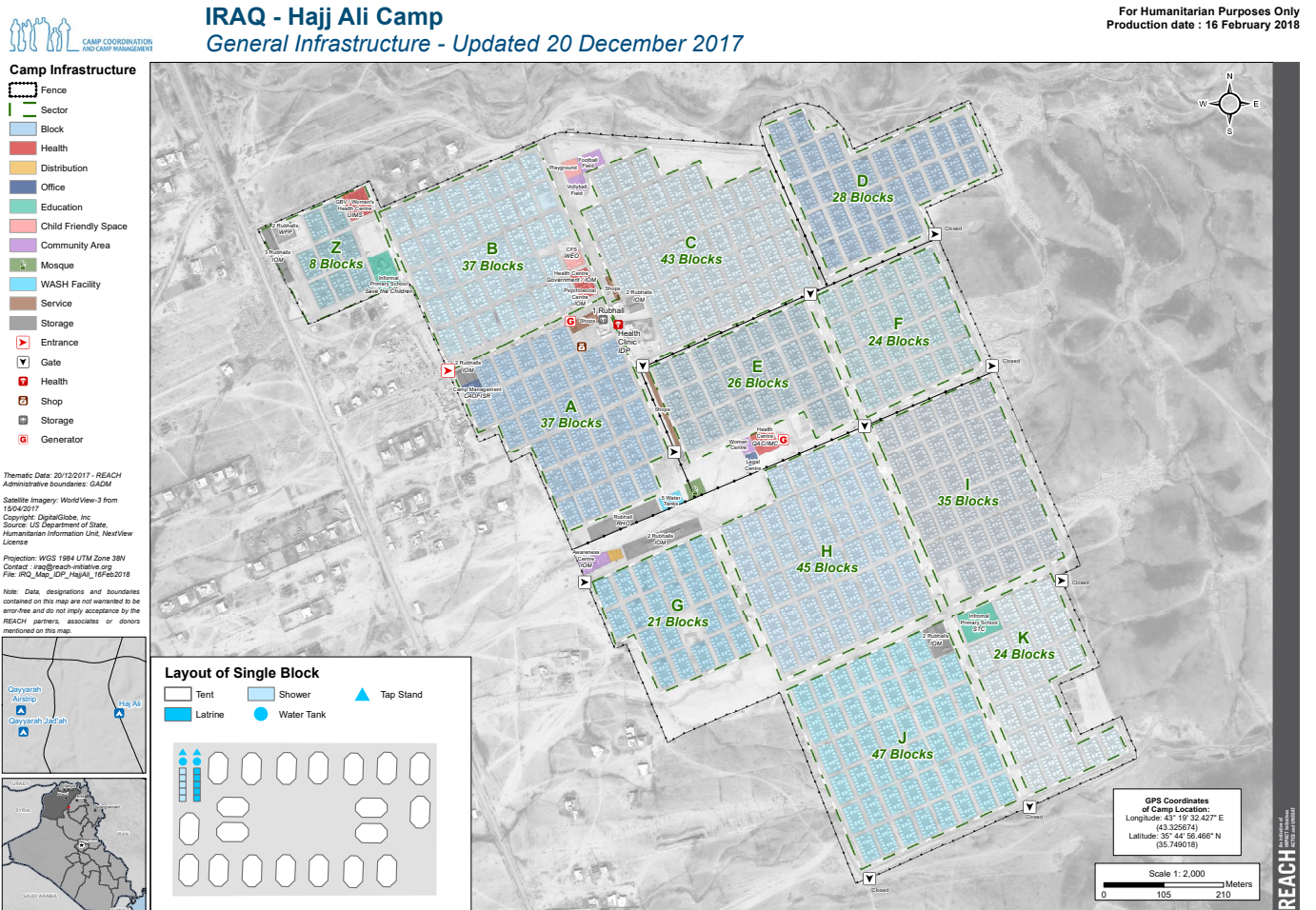
Repair of fences, drainages and roads were carried out since then, often through the employment of camp residents through cash for work.

To mitigate fire hazards, camp management teams conducted weekly awareness trainings and two fire extinguishers were installed in each block. Although minor fire incidents occurred in kitchens within each block, these never spread to adjacent blocks.

By early 2019, returns had started to occur, but emergency sites were still hosting nearly 90,000 people. The two sites set up by this project were at about 70 per cent capacity. According to a survey conducted by the organization, about 88 per cent of camp residents either intended to remain or did not have an intention to return within the following 12 months.

**WIDER IMPACTS OF THE PROJECT**

Apart from providing accommodation for 105,000 IDPs, the project enabled over 20 partners to provide humanitarian assistance to the sites.





## STRENGTHS, WEAKNESSES AND LESSONS LEARNED

### STRENGTHS

+ **Timeliness of the intervention.** Tents and WASH facilities were set up in the emergency sites before the first arrival of families fleeing from Mosul.

+ **Leadership and coordination generated buy-in.** The phased approach used by the project initially faced strong opposition, as most actors did not accept that IDPs could be accommodated before all basic services had been provided. The organization succeeded in generating buy-in thanks to extensive coordination and this then allowed all partners to incrementally provide humanitarian assistance in the sites.

+ To support the coordination process and harmonization of activities to implement this phased approach that was new to the context, **special guidelines on the planning, set-up and maintenance of these emergency sites were developed** in a highly consultative process.

+ **Remote site planning.** In the initial planning stage, the site could not be accessed and so topographic analysis and measurement of site boundaries were done by a mix of observation from the perimeter and analysis of satellite imagery. Plans were then adjusted during the implementation phase. Such remote planning worked well thanks to the high-resolution satellite images acquired from authorized agencies.



105,000 IDPs fleeing Mosul found shelter in the two sites. About two years later, the majority of the site residents did not intend to return to their homes yet.

### WEAKNESSES

- **Minimum surface area of the site.** As this project aimed at sheltering as many IDPs as possible to provide life-saving assistance, initially the minimum surface area per individual was 20–23m<sup>2</sup>, which was about half of the Sphere recommended indicator (45m<sup>2</sup>). The plan included the gradual decongestion of the sites as people started to return to Mosul, which entailed the modification of block layouts to increase the surface area per person. Since after two years the occupancy rate was still about 70 per cent, this was only possible to a limited extent.

- **Vulnerability to rains and floods.** Before upgrade works could be completed, the shelter blocks' areas became muddy due to the heavy rains. This was later improved by installing drainage and adding a layer of gravel in the living areas. However, mainly due to poorly constructed or maintained drains and culverts (especially outside the site), minor flooding occurred in some sectors of one site.

- **Delays in WASH installation.** This project relied on partners for the funding and installation of WASH facilities, which was not always timely, since different agencies had different timelines. During the peak of the IDP influx, the shortage was mitigated thanks to a camp management agency installing temporary toilets, while partners worked to fill the gap.

- **Tents quality and durability.** The tents installed had a limited lifespan and required constant maintenance and repair, which was not always conducted due to funding constraints. The need for future replacement was expected, but proper plans and resource allocation did not happen early on, leading to a need for replacement of almost all units after about two years.

### LESSONS LEARNED

- **Various levels of coordination were required.** To coordinate the implementation of all the site facilities with partners, meetings were held at multiple levels, including the Inter-Cluster operation centre, CCCM and Shelter Cluster coordination meetings, and on-site construction briefings. Sharing construction progress regularly with partners on the ground was essential to align interventions and keep the rapid pace of all the construction activities.
- **Camps tend to last for years, but decisions need to be taken with urgency and in uncertain conditions.** In the initial stages, it was challenging to anticipate the lifespan of the sites, and this influenced decision-making and resource allocation. Although the project's main objective was to provide emergency assistance quickly, it was expected that the sites would exist for years rather than months, requiring maintenance and continuous fundraising. After over two years, indeed most of the IDPs remained in the camps and did not intend to return soon.
- **Tents' specifications and procurement plan should have been better designed.** Partly related to the above, the need for replacement of tents could have been better anticipated, and resources allocated for in advance. Specifications could have been more detailed and include quality control parameters and replacement procedures. Alternative shelter solutions could have also been proposed from the outset, choosing more durable options with reduced need for maintenance, although costlier up-front.
- **Construction managers should be part of coordination meetings.** For the smooth progression of coordinated site planning and development activities, an overall construction manager should be nominated from the lead site planning organization to attend coordination meetings, and all partner agencies should appoint a construction focal point (i.e. an engineer), as well.

## 8 / 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

January 2013 –	– Kambioos camp officially recognized
June 2012 –	– End of use of ISSB blocks.
August 2011 –	– Kambioos camp opened
July 2011 –	– Ifo 2 camp opened
July 2011 –	– Famine declared
Early 2011 –	– New arrivals start to increase
March 2010 –	– Ifo 2 site identified

### 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 11<sup>th</sup> 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".





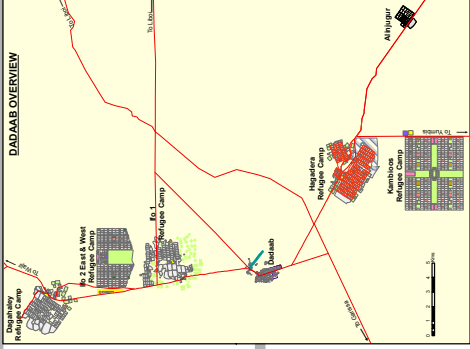
Top to bottom: Site marking; Tent erection on a windy day; Newly established blocks at IFO camp extension. Camps were organised into a) plots, b) communites, c) blocks, and d) sections. Photo: Joseph Ashmore



# 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

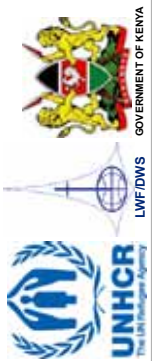
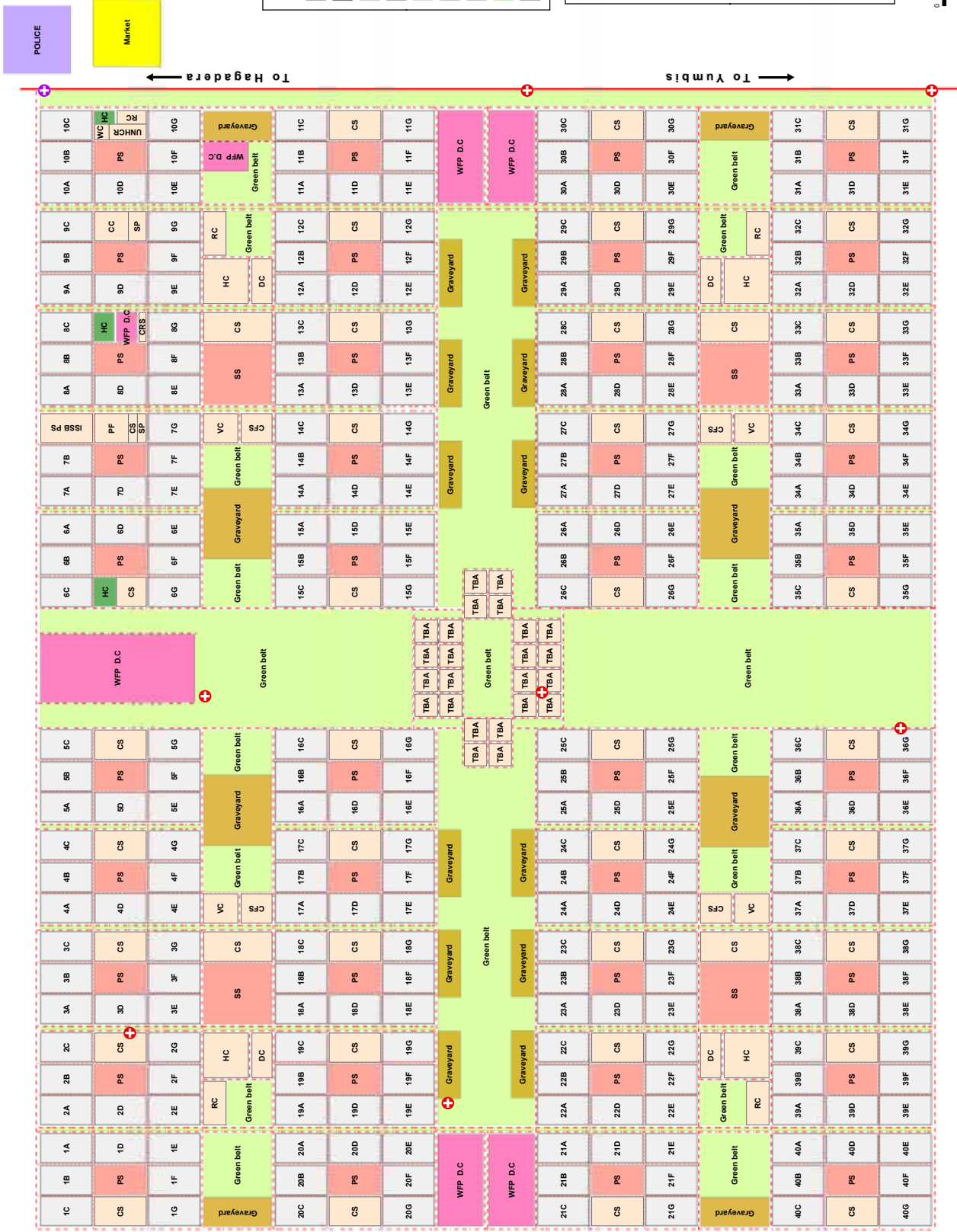


**Legend**

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

**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





## 9 / D.3 Nicaragua - 1973 - Earthquake

### Case study: Small camp

#### Project type:

Shelters in community-grouped camp

#### Disaster:

Earthquake in the capital city of Managua

#### No. houses damaged:

50,000 destroyed; 24,000 damaged

#### Project target population:

180 families initially, then 360 families in tents

Later, 310 families in polyurethane igloos

#### Occupancy rate on handover:

60% of tents; 45% of replacement igloos

#### Shelter size

Tent: 12m<sup>2</sup> (approximate size)

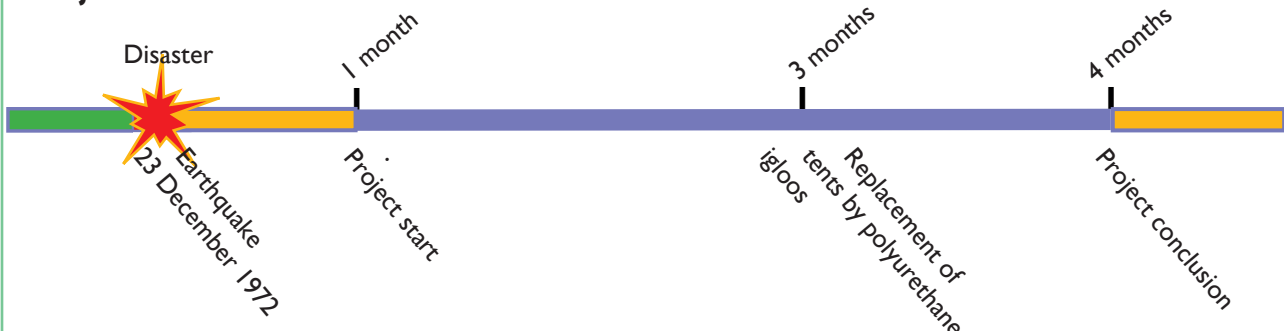
Igloo: 20m<sup>2</sup> (approximate size)



### Summary

Working with displaced families, the NGO created a camp layout in Masaya, which, for the first time, grouped families into group clusters and supported community networks. This resulted in a camp with a much higher occupancy rate than any other camp built in response to the disaster, and at much lower costs.

### Project timeline



### Strengths and weaknesses

- ✓ Group clustering of tents allowed displaced families to give mutual social support.
- ✓ Adequate space was provided in the camp for public amenities, which were easily accessible by all.
  - Lighting, water and sanitation were provided, through cooperation with the national government.
  - The camp was easily accessible for logistics, but not for occupant livelihood opportunities.
- ✗ Full occupancy was never achieved, because of family preference for host-family situations where possible.
- ✗ Prefabricated polyurethane shelters were delivered too late and were inappropriate in design in terms of beneficiary acceptance, cost per unit, potential for expansion or maintenance and fire hazard.
- ✗ There was no potential for the support of early reconstruction on families' customary land.

Case study credits: Cuny Center

## Before the earthquake

Large-scale urban migration during the 1960s had increased the population of Managua from 170,000 to 430,000 in the decade before the earthquake. This left a deficit of 80,000 houses, with many additional people in substandard housing. More than 25% of the national population were living in the capital city area.

During the last months of 1972 Nicaragua had been experiencing a drought. As a result, some aid organisations were already present in the country at the time of the disaster.

Before the earthquake, the site for the camp had been the grounds for the Nicaraguan Boy Scouts, who retained formal ownership of the site during its use for displaced families. The land was already cleared for use and there were some facilities in place, such as a number of permanent latrines, before the first arrivals of earthquake-affected families.

## After the earthquake

With more than 250,000 people homeless, the national government made the decision to move many of the homeless to tent camps near the city or in the outskirts. However, 130,000 affected people chose instead to stay with extended family members.

All other camps were laid out along strict military lines. However, one camp, the one at Coyotepe, Masaya, was designed by the NGO consultant Fred Cuny to be laid out in square 'clusters' of 16 shelters each, with the explicit intention of providing the physical structures for community self-support. This was the first time that such a layout concept had ever been implemented and it has provided the basic template for all other cluster-based designs since. The design also took into account firebreaks, security lighting and adequate public spaces for recreation and community activities. Meanwhile, many of the other camps experienced much lower occupancy rates and early abandonment of shelters.

By the end of 1973, the vast majority of camp residents had left the camp, mostly to return to Managua.

## Selection of beneficiaries (and assessment)

The beneficiary group appear to have been self-selected, having moved to Masaya in the first few days after the earthquake.

## Land rights / ownership

The site was designated as a camp by the government, who also provided support with sanitation and other services. The government decided to rebuild Managua on its original site and plan, in theory permitting families to return to their customary locations within the city. By the summer of 1974, the Nicaraguan Boy Scouts, who owned the site, were planning to bulldoze the remaining shelters and evict the last few families.

## Technical solutions

Tents were provided by the US Army within four weeks of the disaster. However, these were seen as inadequate to last through the rainy season.

After four months, polyurethane igloos (previously used in Peru in 1970) were constructed for the beneficiaries by international staff using specialised machines.

Although the internal shelter space of the igloos was larger than that of the tents, the igloos had much lower occupancy rates. This was in part due to the lateness of the delivery, but also because the design was not one that related to standard housing shapes for the beneficiaries. The igloos were not easily extendable or maintainable, although there were reports of parts of the igloos being broken off to make materials for other shelters. The igloos were also criticised for being flammable.

## Camp layout

The camp was laid out using square clusters of 16 shelters, with a central space for administrative buildings and social/recreation areas. The clusters were placed so that the camp could be expanded after the initial construction phase. This would allow the camp to have the capacity for up to 3,500 people (700 shelters). The layout was designed to accommodate either community or individual cooking and

washing facilities. The latrines were placed outside of all of the shelter clusters along the side of the camp.

The design also took into account the possibility that the camp would exist into the longer term or would be upgraded into a permanent settlement. Space was provided for the installation of standard drainage and semi-permanent water and sewage facilities.

## Implementation

The tents were erected by the occupants of the camp, the US Army, and the Nicaraguan Boy Scouts, who also worked together to install basic drainage.

The extra space needed for the construction and deployment of the igloos also caused some displacement of shelters from the original cluster design.

One NGO provided camp management support in the form of a reception committee to assess the medical and social needs of or new arrivals. Information was distributed via notice boards and a camp newspaper.

There was no initial plan for the delivery or upgrading of some facilities, so the NGOs had to negotiate with the government (not always with success) to extend water lines into each cluster, build shower units and construct a septic tank. However, the question of waste incinerators was left unresolved.

## Logistics and materials

Delivery of both the tents and the igloos came at a relatively late stage. Permanent toilets previously constructed on the site were used, but other permanent buildings were not. In terms of the support and maintenance of the camp, the site was located along a main road 3km away from the town of Masaya and 20km from the nearest airfield. The camp remained reliant on the delivery of food and water and removal of waste solids by truck.

Materials	Quantity
Phase I – Sears Co. high-wall chalet tents	360
Phase II – Bayer Co. polyurethane igloos	310
Latrines, water facilities, lighting, also supplied	No data



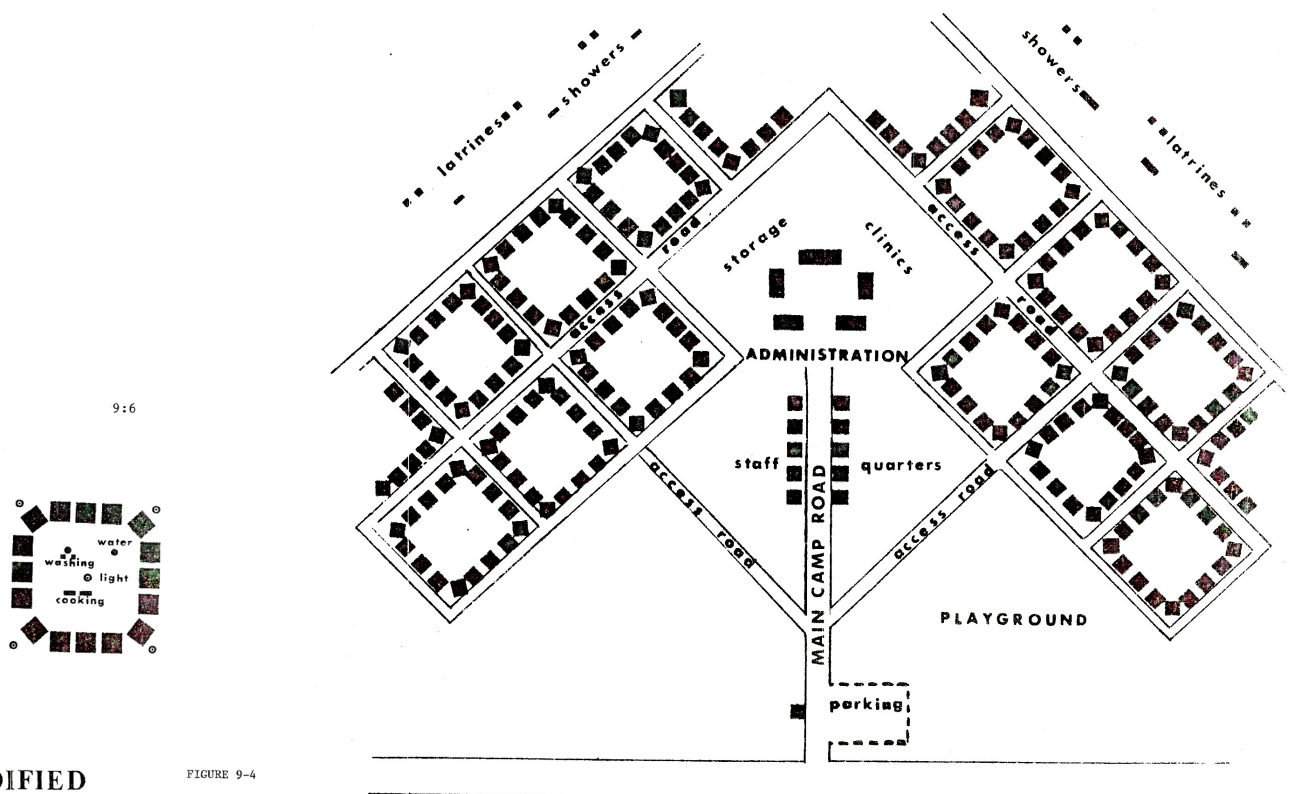


FIGURE 9-4

**MODIFIED  
CROSS-AXIS PLAN**

**Planning Unit**

FREDERICK C. CUNY & ASSOCIATES  
**INTERTECT**

*Coyotepe camp layout, Nicaragua, 1973. Photo credits: Fred Cuny Center*



*Aerial photo of Coyotepe camp, Nicaragua, 1973. Photo credits: Fred Cuny Center*



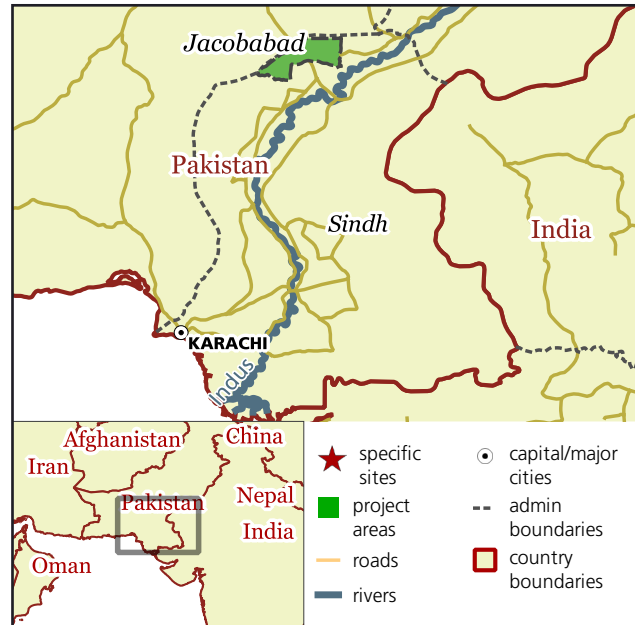
# 10/ A.19 Pakistan – 2012 – Floods

## Case study

**Keywords:** Transitional shelter / T-shelter; Cash / vouchers; Site planning; Training.

**Emergency:** Monsoon floods, 2012, Pakistan.  
**Date:** 7-11 September 2012  
**Damage:** Approx 635,000 homes damaged or destroyed in total. Approx. 145,000 houses destroyed in Jacobabad.  
**People affected:** 4.85 million people were affected by the floods, with around a fifth of those affected living in Jacobabad (940,000 people).  
**Project location:** Jacobabad district, Sindh.  
**Beneficiaries:** 4,970 households (31,002 people).  
**Outputs:** 5,167 shelters by mid-2014 (some families received two kits). 77 villages site-planned.  
**Occupancy rate:** 100%.  
**Shelter size:** 12ft x 19ft (21m<sup>2</sup>) housed a family of six to *Sphere* standards.  
**Cost per shelter / household:** Materials and labour: US\$ 380. Total costs: US\$ 748.

**Project description:**  
 Flood-affected families were supported with 5,167 transitional shelters in areas where the organisation was already present. The shelters conformed to *Sphere* standards and were built in three rounds of construction. They were quick to build and incorporated key DRR elements. Village site-planning was introduced in the third phase of the project.



### Emergency timeline:

[a] 7-11 September 2012: monsoon flooding.

### Project timeline (number of months):

- [1] November 2012: Round 1.a (registration, committee formation).
- [2] Round 1.b (materials distribution and construction).
- [3-5] Round 1.c (grant and transport payments. 2,235 shelters complete).
- [6-8] Round 2 (1,922 shelters).
- [12-15] Round 3 (408 shelters). First inclusion of site planning as activity.
- [16-18] Round 4 (602 shelters).
- [19 ongoing-] Project ongoing until mid-2015 with plans for 2,000 additional shelters.



### Strengths

- ✓ The construction of a demonstration shelter facilitated community feedback, which resulted in improvements to the design, such as larger verandas.
- ✓ Using local knowledge and materials meant shelters were quick to build, low cost and culturally appropriate. Raised-earth plinths greatly improved flood resistance.
- ✓ Good communication and feedback mechanisms.
- ✓ Village site planning had many positive impacts, including reducing standing water, establishing an evacuation plan, and improving WASH facilities.
- ✓ The use of portable transitional shelters meant that beneficiaries knew they could take such a high-value

asset with them should they face eviction.

- ✓ Involving women in site planning was challenging due to cultural barriers. To mitigate this, all-female groups provided feedback on all-male original plans.

### Weaknesses

- ✗ Site planning could have been made a standard part of the response for all villages from the start of the project.
- ✗ Site planning activities were difficult to manage if the number of households involved was less than five or more than 15.

### Observations

- Tribal conflict is endemic in the area, which sometimes limited access.



Saeedabad village, Jacobabad before the site had been re-planned. The new plan would result in moving shelters away from electrical wires and poor drainage areas and creating better footpath access around the site.  
Photos: PO Tasleem/CRS



Community site planning involved using small models of houses and infrastructure to help design a new village layout.  
Photos: FE Altamash/CRS.

### Situation before the disaster

Before the flooding, people were mostly living in houses constructed out of mud brick, which are prone to collapse during heavy rains and/or flooding.

### Situation after the disaster

After the 2012 floods, affected communities resided in tents, emergency shelters or were living under the open sky. After repeated flooding over several years, communities were reluctant to rebuild mud houses as the investment of time and resources risked simply being washed away.

Many people were not able to afford pukka (burned brick) houses, and faced eviction by the landowners at any time. This has meant that most people had been constructing thatch houses that could easily be transported with them if they were forced to move.

### Shelter strategy

The Government of Pakistan established the National Disaster Management Authority (NDMA) in August 2007 to take the lead in the response to emergencies and disasters, with responsibility for preparedness, response and reconstruction.

The NDMA is intended to play a coordinating role, working with INGOs and NGOs, and is responsible for communicating government

policy for implementation on the ground.

The Shelter Cluster has focused upon the implementation of low-cost, timely shelter construction.

### Project implementation

The project adopted a self-help approach, and was implemented in partnership with a local organisation, with the main organisation providing technical guidance and monitoring the field activities. The project team was made up of four main organisation staff and ten local partner staff.

The intervention was carried out in small clusters of villages at the same time, with the clusters all being located within the same Deh (smallest administrative unit). The Dehs were prioritised in terms of need, with those with the greatest need receiving support in the first of three rounds of construction.

A demonstration house was built in each community as a training aid.

Communities identified individuals best suited to construction training and if no suitable person could be found a carpenter was brought in from the surrounding area to support them. A one-day training was provided for the carpenter, under the supervision of a field engineer.

The trained carpenters built the core of the structures and were paid 1,000 Pakistani Rupees (PKR) per shelter (approx. US\$ 10). The community provided the unskilled labour required to complete the shelter (mud plastering, plinth construction), with those households

who were unable to contribute any labour for their shelter given PKR 600 (US\$ 6) to pay for two days of labour.

Each household received a voucher worth US\$ 375. Suppliers were identified to provide materials that could be redeemed against the vouchers provided, and each supplier's warehouse acted as a distribution point. Beneficiary families also received PKR 600 (US\$ 6) for transporting the materials. By managing the construction of their own house, families had a strong sense of ownership of the process and tailored the design to their own specific needs,

The project also included a strong feedback mechanism, which involved a hotline, complaint boxes and verbal feedback during site visits. All feedback was transferred into a tracking sheet, and responded to appropriately.

### Site planning

Village site planning was introduced in December 2013 during the third round of construction and was eventually conducted in about 77 villages (20% of the total number).

Following initial community sensitisation about the project, each village was mapped, with key hazards and communal facilities identified. As many participants were illiterate, small models of handpumps, shelters and houses were used in the mapping process.

In some communities, due to social barriers, women in the community were excluded from the first round



of planning, where male representatives of every family made the initial settlement plan on large sheets of paper. In these cases, women's committees were established to ensure equal decision-making between men and women. Women's committees also provided a safe environment for women to freely express their opinions.

During the planning exercise the Social Mobiliser ensured that representatives of every beneficiary family were present and that any land dispute issues were raised and solved. The mobiliser also addressed issues such as security and privacy concerns, which were particularly important in villages where there were a number of different social castes living together.

### Beneficiary selection

The organisation worked on the provision of shelters in one Union Council at a time. A Union Council (UC) is a small administrative unit, often known as a village council in rural areas. Those UCs that were most flood-prone were prioritised.

Within each UC and village, vulnerable households were identified in collaboration with community committees, according to a set of vulnerability criteria. This community-led process reduced conflict and disputes over who received assistance.

The project targeted households whose homes were completely destroyed or very badly damaged, and checks were made to make sure that families were not in the receipt of shelter assistance from another

organisation. Families also had to be willing to provide labour for the construction of the plinth and plastering of the walls.

Beneficiary registration was made on portable tablet computers which sped up the registration process and facilitated quick analysis of the data.

### Coordination

The organisation was active in the Shelter Cluster and coordinated with government agencies and other NGOs in order to adjust targeting to collectively achieve blanket coverage of the area, and avoid any duplication of efforts.

### Materials

The only unfamiliar construction material introduced was the poplar pole. This was accepted by the communities without any problems.

The final bill of quantities was determined by the organisation's global shelter technical advisor, following the construction of a pilot shelter.

A market assessment based on the list of materials was conducted with local vendors in October 2012,

**"We constructed our shelters according to our village settlement plan and now our animals and property are more safe and secure from thieves."**

**Beneficiary**

in order to determine if there was sufficient quality and capacity for manufacturing in Pakistan to supply all the materials.

Organisation logisticians selected vendors based on site visits to the suppliers to check the quality of the materials. Materials were mostly trucked from Punjab since local materials were of low quality and not in sufficient quantity.

A just-in-time approach to procurement was necessary to avoid having large warehouse stocks of bamboo vulnerable to water damage during the monsoon season.

### Disaster Risk Reduction (DRR)

#### Village site planning

The organisation introduced settlement planning to communities in order to support them to develop their villages into disaster-resilient settlements. When families had selected their shelter site individually, it had often been done haphazardly and without coordination. By leaving narrow pathways between shelters, the walls became more susceptible to rain draining off from neighbouring roofs, and people had more difficulty evacuating quickly with their livestock and assets.

Some shelters had also been built far from water sources, and some had verandas which were oriented southward, limiting their protection in the summer.

As a condition for participating in the project, families were supported



by the organisation to identify safe plots. This included avoiding low-lying areas or areas near steep slopes with risks of landslides, sites next to busy roads, waste dumps or electrical lines, and plots too close to other buildings.

The organisation developed model shelters, hand pumps and latrines, and led settlement-planning exercises with communities to focus on disaster resilience and ensure that village planning accounted for other infrastructure (hand pumps latrines, mosque) as well as various social elements (protection, privacy, security, access).

The communities also considered drainage during flooding, rain water run-off from the roofs, and village evacuation planning. The process engaged both beneficiaries and non-beneficiaries of the shelter materials vouchers.

Wherever possible, planning sessions were attended by men and women. When this was not possible due to cultural reasons, separate feedback was sought from the female community representatives immediately after completing the exercise with the men.

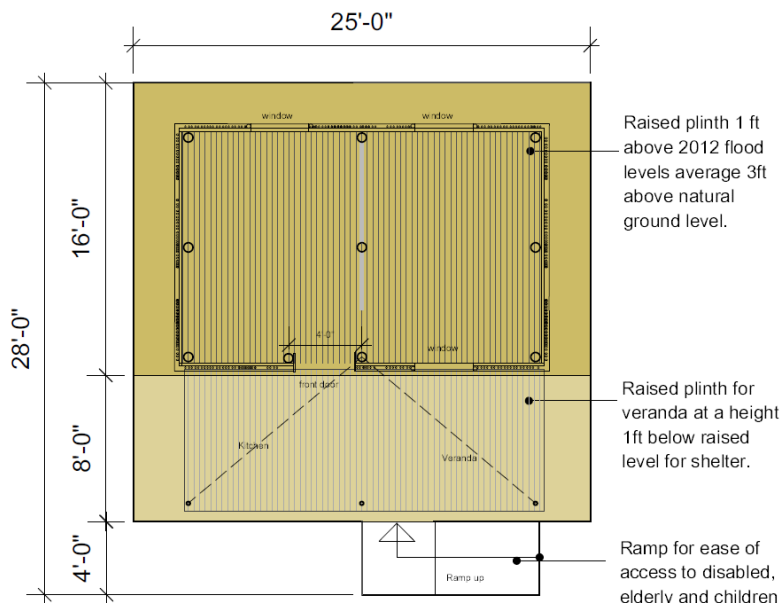
Benefits of the village planning, identified by beneficiaries included:

- Increased security through better visibility of others' plots.
- Greater village cohesion through joint planning.
- Improved communal spaces created a number of new possibilities, including providing an area for shared storage of seed or tools.
- Women, who carry out most of the cleaning duties, reported reduced time needed to keep new shelters and plots clean and tidy.

**Shelter design**

DRR components in the shelter design included:

- Anchoring poplar poles for vertical support



Part of the technical shelter design document specifying details for the plinth. Graphic: CRS

elements 2ft. (60cm) below grade, with excavated pits backfilled with stones and/or well-compacted soil.

- Treating the bases of poplar poles with engine oil to protect against rot and insects.
- Vertical structural elements were strengthened by horizontal bamboo beams to create a unified structural system. Diagonal bamboo corner braces attaching the vertical structural elements to the horizontal tie-beams further improved resistance to lateral loads.
- Connections between poplar poles and the bamboo were secured with nails and reinforced with rubber straps. Critical connections were strengthened with GI wire.

**Wider project impacts**

Some beneficiaries reported that they will continue to use the lessons they learned in future village developments, and any new families coming to the village will be educated in the advantages of good settlement planning.

Given land tenure issues, many communities appreciated the fact

that they could disassemble the shelter and take it with them in the event of eviction.

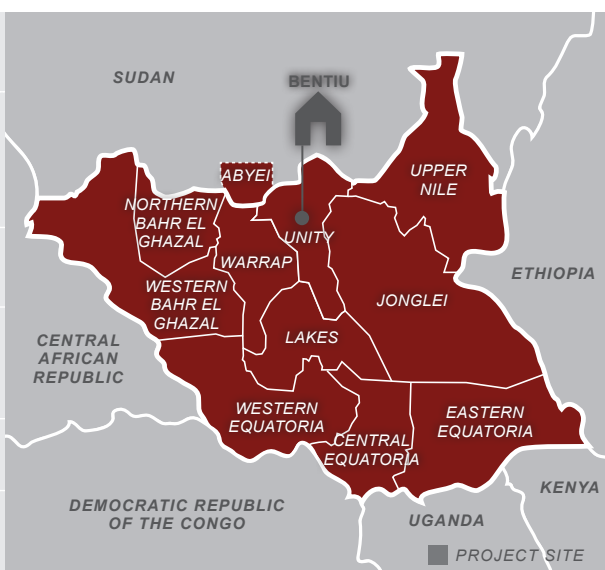
**Bill of Quantities**

Item description	Qty
Poplars (4in. tops, various lengths)	11 pcs
Bamboos (1" to 2" diameter, various lengths for beams, purlins, rafters and wall supports, including veranda)	95 pcs
Chick Mats for walls and roof	7 pcs
P.E Tarpaulin	2 pcs
Cotton rope	4kg
Nails (various sizes)	2.5kg
G.I (Galvanized iron) wire	4kg
Limestone (20kg bag)	3 pcs
Tools: saw, claw hammer, pliers, wheelbarrow	1 kit per 5 households
Measuring Tape and water level	1 per 10 households
Needle and scissors	1 pc
Polyethene Sheeting 30ft x 16ft, (approx. 9m x 4.5m) waterproof double ply 1.5 mm	1 sheet
Hoe/'Kodder'	1 pc
Polyethene tarpaulin (4m x 6m 80 GSM)	1 pc

CASE STUDY 11 / A.25 **SOUTH SUDAN 2014-2016** / COMPLEX

**KEYWORDS:** Emergency shelter, Site planning, Phased construction, Infrastructure, Planned camps

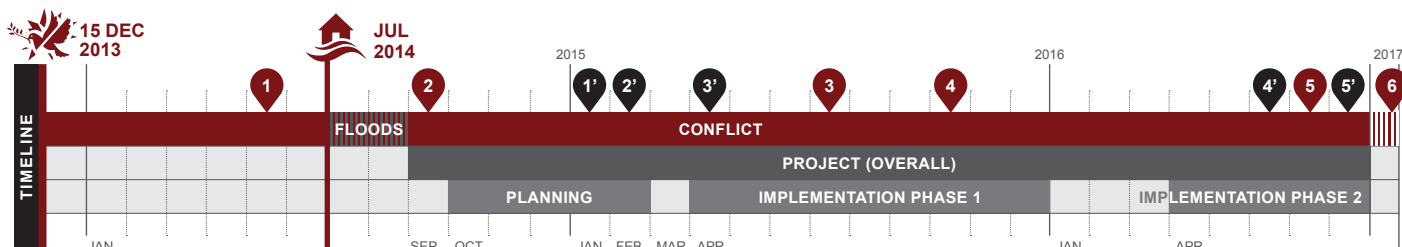
<b>CRISIS</b>	<b>South Sudan Civil War, Dec 2013 - ongoing. Complex crisis</b>
<b>TOTAL PEOPLE AFFECTED</b>	<b>6.1 million</b> in need of humanitarian assistance and 1.66 million internally displaced, as of December 2015 <sup>1</sup> . <i>For more updated figures, see overview A.23.</i>
<b>PROJECT LOCATIONS</b>	<b>Bentiu, Protection of Civilians (PoC) site, Unity State.</b>
<b>BENEFICIARIES</b>	<b>105,786 people</b> (47% male; 53% female; with 47% under five years old), relocated across communal shelters, at 45 people per shelter.
<b>PROJECT OUTPUTS</b>	<b>11,778 robust shelters.</b>
<b>SHELTER SIZE</b>	<b>84m<sup>2</sup></b> (4.5x21m communal shelters, with partitions to accommodate between 35 and 55 people in groups of 7 to 11 individuals).
<b>SHELTER DENSITY</b>	<b>1.5m<sup>2</sup></b> at peak. Shelter occupancy has been variable due to space constraints, with huge influx in PoC caused by repeated insecurity.
<b>MATERIALS COST PER SHELTER</b>	<b>USD 837</b> (Materials: USD 687, Labour: USD 150 approx.).



**PROJECT SUMMARY**

The project constructed 11,778 shelters in the Protection of Civilians site in Bentiu. The project was closely linked with the phasing of a broader USD 18 million project of site works, which converted a camp that seasonably flooded into a habitable site.

<sup>1</sup> South Sudan Humanitarian Needs Overview 2016, <http://bit.ly/2d3Y2tB>.



- 1 May 2014: Population in Bentiu PoC: 8,000 individuals.
- 2 Sep 2014: Population in Bentiu PoC: 46,000 individuals.
- 3 Jul 2015: Population in Bentiu PoC: 87,000 individuals.
- 4 Oct 2015: Population in Bentiu PoC reaches 120,000 individuals.
- 5 Jul 2016: Population in Bentiu PoC: 102,000 individuals.
- 6 Dec 2016: Population in Bentiu PoC: 120,000 individuals.
- 1' Jan 2015: Robust emergency shelter design agreed upon, and approved by the community.
- 2' Feb 2015: Site redevelopment begins to reduce overcrowding and provide adequate drainage, addressing the flooding risk.
- 3' Apr 2015: Implementation phase begins with a two-months delay (due to negotiations with UNMISS regarding usage of the space), and as a result of community resistance to being relocated to the new site within the PoC.
- 4' Jun 2016: Site development gradually completed in a phased approach, with sectors/blocks handed over to the partner NGO as the site works ended.
- 5' Aug 2016: Phase 2 of shelter construction completed (though ongoing, as new arrivals continue and reinforcement is done).

**STRENGTHS**

- + Provided shelter secure from violence and localized flooding.
- + Effective coordination between all actors.
- + Strong forward-planning for procurement and implementation.
- + Use of local materials where possible.
- + Enhanced cladding with grass to improve comfort and durability.

**WEAKNESSES**

- Delays due to logistics and weather constraints.
- Assistance was provided only within the site, causing disparities with the populations outside.
- Overcrowding in shelters.
- Issues in timber procurement and poor market analysis.
- Lack of partitions in the initial design.





©Muse Mohammed

Although it is widely recognized that camps are an option of last resort, for tens of thousands of residents in Bentiu PoC, conflict meant that there was no other option. However, the site was too small and would flood every year. This required massive expansion and infrastructural works.

**BACKGROUND**

For more information on the context and the shelter-NFI response in South Sudan, see overview A.23.

Before the outbreak of conflict in 2013, the bases of peacekeeping forces – United Nations Mission in South Sudan (UNMISS) – had hosted small populations seeking protection for short periods, with limited humanitarian response. Following the outbreak of conflict, tens of thousands of people fled to – and stayed in – Protection of Civilians (PoC) sites far longer than expected.

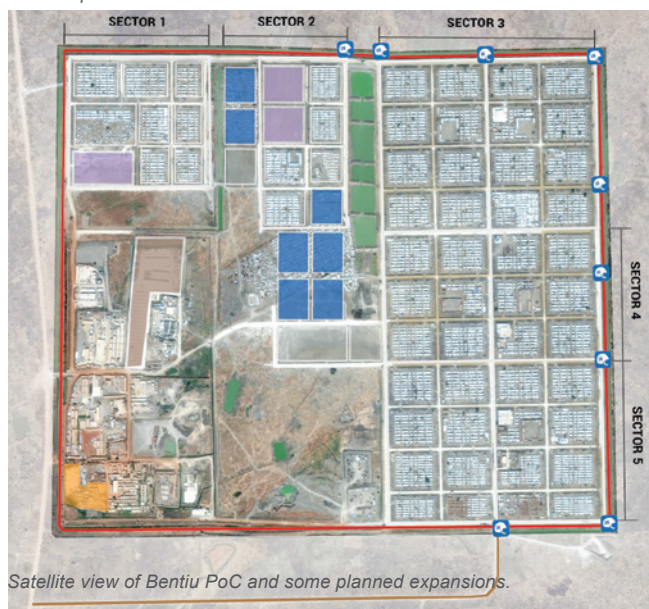
Over the course of the conflict, multiple waves of violence affected the town of Bentiu, leading to 120,000 people seeking shelter in the PoC site. Bentiu is extremely hard to access, with a small airstrip of limited capacity, and is inaccessible by road during the rainy season. During the dry season, it is regularly cut off, due to poor security. As a result, all logistics and supplies had to be planned in advance of the wet season, and plans needed to be flexible, to allow for this variable security context.

Humanitarians arrived in Bentiu in January 2014, to provide essential, life-saving, services to the population residing there. In March 2014, the PoC site in Bentiu hosted 11,000 IDPs, with the population rapidly rising to 43,718 by December 2014 as a result of escalated conflict in Unity State. The huge influxes created overcrowding and difficulties in service provision.

In the rainy season of 2014 **the site flooded for several months**, leaving the camp population trapped, with many parts of the site deep in water. By mid-2014, living space was limited to 9m<sup>2</sup> per person across the site. Overcrowding was compounded by stagnant water, which worsened living conditions and exacerbated the risk of water-borne diseases, such as cholera. The site itself remained highly insecure, with regular violence outside the PoC – and at times inside, due to ethnic conflict – leading to fatalities throughout the project.

**SITE WORKS**

To respond to the growing site population and address the issues of localized flooding, during 2015 and 2016, the Bentiu PoC was expanded and rehabilitated over 1.68 million m<sup>2</sup> (168 hectares). To create better living conditions for people seeking shelter in the site, **a massive drainage network was estab-**



Satellite view of Bentiu PoC and some planned expansions.

- Completed external berm and ditch
- Completed primary road
- Completed access road
- Contingency area
- Block with ongoing earth work
- Block with ongoing shelter work
- Logistics base and office area
- Humanitarian Hub
- ⊕ Observation posts

**lished**, based on the Dutch “polder” system. Major works (with 74 pieces of heavy machinery) led to the establishment of a 4m tall berm (mainly for security purposes) and 24m<sup>2</sup> section drainage ditch around the site. This was to prevent surface runoff from the surrounding land. Additionally, a series of drainage ditches and water retention basins were dug. These had large capacity pumps, to remove rainfall from inside the berm.

The site works were achieved through contractors and a carefully phased construction plan. This plan allowed for additional timing for contingencies and monitored the volumes of soil moved, as well as the length of drainage ditches and berms.

Beyond the major site works, the site development project included shelter construction, establishment of water, sanitation and hygiene systems, health and education facilities, alongside other services. Given that the site was already occupied, **agencies needed to work together** to ensure carefully phased relocation. Shelters, latrines and other structures could not be





The expansion plan included land that was already spontaneously occupied by camp residents. Careful phasing of major upgrading works was required, as the whole site needed to be upgraded.



Phase 0: survey and de-mining. Phase 1: Access to site works and perimeter. Phase 2: Internal access and drainage. Phase 3: block development and relocations. Phase 4: block development, relocation and completion.

erected until ground works were ready and, if they were built before people were relocated, they risked falling into disrepair, or being looted.

**GROWING SITE POPULATION**

The site was designed for 50,000 people with a contingency of up to 75,000 people. As the site population continued to rise, reaching over 87,000 people by July 2015, revisions to site and shelter plans were necessary. In the first phase, there was significant community resistance to the programme, as the population influx meant that the number of people per shelter had to be increased from five to eight. In 2016, this increased further to 11, as the population increased to over 120,000.

**IMPLEMENTING TEAM STRUCTURE**

The lead organization for the site sub-granted to a partner NGO for the shelter activities. The implementing NGO had a Shelter Programme Manager and a Shelter Advisor, and was supported by the lead organization by two deployments of Shelter Cluster rapid response officers. The project also included an implementation and management team with functions such as quality control, cross-sectoral coordination and information management. In addition to project staff, the project implementation team included around 200 camp residents, who were chosen by the community leadership and trained by the organization on shelter design and construction. The construction of shelters was phased employing six different teams (including plot demarcation, digging, erecting skeletons and spraying walls).

Technical supervisors and contractors were recruited by the partner NGO within the PoC sites, with each of the contractors further recruiting a team of labourers to build shelter frames.

**COMMUNITY ENGAGEMENT**

Close engagement with the community leadership was critical for maintaining the ability to operate safely in the camp. It was also essential to enable safe and phased relocations within the site, as new shelters were built.

**PHASING AND COORDINATION**

As people were already occupying the site, a phased relocation process allowed site works to continue, according to an overarching project plan. The site was split into sectors and each sector was moved as the ground works were finished and shelter frames erected.

Relocation could only take place once plots for families and communities had been established, shelter materials had been distributed and construction was completed. Given the limited space, some sectors had to be moved to newly renovated plots before all of the land could be worked on. This made the timing of different activities for the entire site reconstruction project **interdependent and highly time critical**.

On 21 May 2015, the camp management agency coordinated 160 humanitarian workers in a population verification exercise, recording biometric details and assigning addresses within new areas. Verification was an important first step and helped in demarcating plots and defining movement plans.

Overall, UNMISS, peacekeepers, humanitarians and the authorities had to negotiate between each other and **coordinate closely in a very complex military environment** and in incredibly harsh conditions, including shrinking humanitarian access and a protracted conflict situation.





The shelter project built communal shelters due to lack of land and nationally limited resources. These shelters allowed to maximize the use of limited space and impacted shelter strategies throughout the country.

### CONSTRUCTION PROCESS

Shelter frames were built by contractors and guards were hired to protect the shelter frames from theft, until they were allocated to a household. Once households had been allocated a shelter plot by the organization (in coordination with camp management agencies), they collected a shelter kit from the implementing partner NGO to complete their shelter. Demonstration shelters were built as prototypes and the partner NGO provided technical supervision to households to ensure that the materials were used effectively. For example, care was taken to ensure that plastic sheets were attached correctly. Individuals with identified vulnerabilities, such as disabled persons, pregnant women and the elderly, were provided additional assistance. A timber workshop was set up at the logistics base in the UNMISS site with outdoor storage for 3,000m<sup>3</sup> of timber. At the workshop, teams prepared the timber for the structures of the shelters, including treating them with anti-termite solution.

### SHELTER DESIGN

The shelter design was discussed with the Technical Working Group in Bentiu and the national Shelter-NFI Cluster before being presented to communities. Local adaptations included the use of elephant grass, which could be harvested by women residing in the site. The windows and doors were also revised to be based on traditional local designs. The shelter design had an estimated life-span of one year, providing displaced households with a solution that is significantly more sustainable than standard emergency shelters built in the country by humanitarians. The design was inspired by the local summer housing solution known as *Rakuba*.

In 2016, concerns were raised by the community about security in the site and the security of shelters. As a result, the partner NGO started the process of providing doors to shelters which did not have one, starting with the most vulnerable, as identified by protection partners.

To protect from water coming in, it was initially planned to use sand to raise the floors of the shelters, but this proved impossible to procure. Households were therefore encouraged to use white soil to raise their floors instead.



Shelter frames were built by contractors.

### THE SITE IN THE LONGER TERM

Relative stability in the first half of 2016 and the expansion of humanitarian services to wider Unity State led to a net reduction in the number of people in the PoC site. However, a resumption in hostilities following the July 2016 crisis led to a population increase in Bentiu PoC (as of 31 December 2016, the population was 119,853 individuals). The sustainability of this and other PoC sites has been object of debate, due to the limited resources, the protracted nature of the crisis and the need of displaced populations for long-term assistance.

### WIDER IMPACTS OF THE PROJECT

Humanitarians have been running similar sets of projects in other PoC sites, such as in Malakal, where the organization has been redeveloping and rehabilitating the PoC site throughout 2015 and 2016. The shelter partner in that site has applied the communal shelter design and aimed to ensure the continued provision of essential emergency shelter services through distributing shelter kits, repairing damaged communal shelters when required and providing assistance to people with special needs to construct shelters.

The implementation of activities across the country has been in line with the Shelter-NFI Cluster objectives and humanitarian best practices, including lessons learned in Bentiu.

Through regular monitoring and technical guidance, humanitarian shelter teams have been working to help residents construct their shelters in more durable ways.

## STRENGTHS, WEAKNESSES AND LESSONS LEARNED

### STRENGTHS

- + The project provided (relatively) **secure shelter from violence and localized flooding**.
- + **Coordination between all actors** was key to the success of such a large-scale programme, which required careful phasing within many constraints.
- + **Strong, forward-planning** regarding required supplies helped the project team mitigate extreme weather variability and the lack of transport infrastructure. This enabled over 1,000 units to be constructed per week, at the height of the relocation process.
- + **Wherever possible, local materials were used.** 84,000 bundles of elephant grass, bamboo and garang rope were procured. The local elephant grass was procured from women over a period of two weeks, through a large community-mobilization campaign.
- + **The plastic sheet cladding was enhanced with grass** to improve insulation and extend the lifespan of plastic sheets.

### WEAKNESSES

- **Activities were delayed** by approximately eight weeks compared to the proposed work plan. This was primarily due to logistics and weather constraints.
- **The site became the only significant location** where assistance at scale could be provided in the state. **This caused disparities** between the assistance provided to those living in the PoC and those outside and was one of the causes of population growth of the site.
- **The site became very crowded and shelters were relatively small.** Although the reasons for the lack of space were unavoidable (both political and financial), the overall density was higher than desirable.



The site works were based on a Dutch “polder” system. They included 28m<sup>2</sup> section drainage ditches, berms, water retention basins, and large volume pumps to evacuate water.

### MATERIALS LIST FOR ONE COMMUNAL SHELTER

Material	Unit	Unit cost (USD)	Quantity	Total cost (USD)
Plastic sheet (4x5)	Piece	15	8	120
Rubber binding rope	Bundle	5	20	100
Bamboo poles	Bundle of 10	5.5	10	55
Timbers 3 x 2" x 3m	Piece	4	28	112
Timbers 2 x 2 x 4m	Piece	6	10.25	61.5
Timbers 2 x 2 x 3m	Piece	4.5	12	54
Timber 4 x 2 x 5m	Piece	11	4.25	46.75
Timber 3 x 1" x 3m bracings	Piece	3.5	8	28
Nylon Rope 30m	Roll	8	5	40
Nails 4"	Kg	2	2.5	5
Nails 3"	Kg	2	5	10
Nails (roofing)	Kg	3	1.5	4.5
Anti-termite and wood borer	Piece	10	5	50

### LEARNINGS

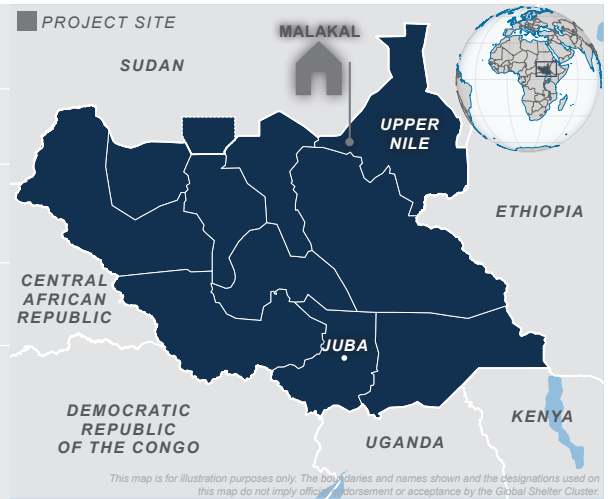
- The project demonstrated the **value of early collaboration and planning**, particularly in such a complex and challenging environment. While shelter activities in 2014 were constrained significantly as a result of a lack of dry space and logistical challenges, the convening of stakeholders and the establishment of a technical working group to plan the redevelopment project in September 2014, as well as the relatively timely procurement of materials during the dry season logistical window, ultimately ensured the success of the project.
- Shelter designs that are meant to accommodate households beyond an acute emergency phase **should take into account privacy considerations and install partitions**. The communal shelters were initially built without partitions, as the shelter approach was based on individuals-per-shelter (and not households). This was mainly a result of limited space available and the increasing population in the camp.
- For such large projects, **it is important to have a proper market analysis** and adopt a design that suits locally available materials. Not enough consideration went into the **procurement** of timber, nor its **potential environmental impact**. With a non-functional timber market, non-standardized sizes and right species available, it was difficult for the supplier to keep up the demand; compounded by its limited understanding of the requirements, as well as access to appropriate tools and workshops to provide desired sizes.



**CASE STUDY 12 / A.9 SOUTH SUDAN 2018 / CONFLICT (IDP)**

**KEYWORDS:** Site planning, Site rehabilitation, Shelter construction, Coordination, Community engagement

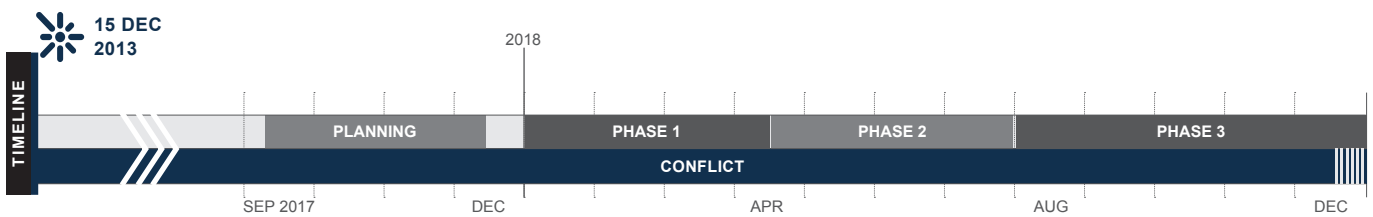
<b>CRISIS</b>	<b>South Sudan Civil War, December 2013–onwards</b>
<b>TOTAL PEOPLE AFFECTED*</b>	<b>7 million individuals</b> , as of Dec 2017
<b>TOTAL PEOPLE DISPLACED*</b>	<b>1.9 million individuals</b> displaced (over 265,000 individuals settled in PoC sites)**
<b>PROJECT LOCATION</b>	Malakal Protection of Civilian (PoC) site, Upper Nile state
<b>PROJECT BENEFICIARIES</b>	<b>1,242 households</b> (3,856 individuals) received shelter support <b>Over 5,200 households</b> (29,000 individuals) benefiting from site reconfiguration and infrastructure upgrade
<b>PROJECT OUTPUTS</b>	<b>959 individual shelters built</b> (238 blocks) <b>64</b> carpenters trained on shelter construction <b>206</b> heads of households trained on shelter maintenance <b>Site works:</b> clearing and grading, drainage and roads improved, culverts installed
<b>SHELTER SIZE</b>	<b>13.5m<sup>2</sup></b> (4.5x3m)
<b>SHELTER DENSITY</b>	<b>3.4m<sup>2</sup></b> per person on average
<b>MATERIALS COST</b>	<b>USD 201</b> per shelter (USD 804 per block, including labour)
<b>PROJECT COST</b>	<b>USD 280</b> per household



**PROJECT SUMMARY**

As part of the wider rehabilitation of the whole site, the project targeted a sector in the Malakal Protection of Civilians site to reconfigure its layout and address issues of overcrowding, security, flood risk and poor distribution of services. One organization was in charge of the site planning and development, while another led the community mobilization, site management and shelter components. Robust emergency shelters according to Cluster-agreed designs were provided to the residents of the reconfigured sector of the site, through a highly consultative process.

\* Figures as of December 2017. South Sudan HRP 2018.  
\*\* DTM, April 2018.



Sep–Dec 2017. Planning phase: **Community discussions conducted prior to start of activities.**

Jan–Apr 2018. Phase 1: **Community mobilization, demonstration of prototype and community consultations informing project design.**

Apr–Jul 2018. Phase 2: **Demolition, relocation to transit site, site planning, shelter construction in sector 4.**

Aug–Dec 2018. Phase 3: **Intention survey, consultation and sensitization of the community in other sectors about the reconfiguration.**

**STRENGTHS**

- + Procurement challenges were anticipated and delays avoided.
- + Community participation throughout the project.
- + Equitable and effective shelter allocation process.
- + Good coordination and collaboration with all stakeholders.
- + Effective collaboration with peacekeeping forces.



The project rehabilitated a sector of the Malakal PoC through a phased approach.

**WEAKNESSES**

- Community resistance and disagreements were not anticipated.
- Initial gaps in coordination between partners.
- The small transit site limited the pace and efficiency of the project.



The conditions in the Malakal PoC were particularly grim, especially after the new population influxes in 2017 and during the rainy season.

## CONTEXT

For more background information, see overview A.23 in *Shelter Projects 2015-2016*, and A.6 in this edition.

Over three years into the conflict, fighting intensified in the first half of 2017, causing further displacement across the country.

## SITUATION IN MALAKAL

Malakal is amongst the largest towns in South Sudan and had a thriving market before the conflict. Since late 2013 when the conflict started, the town experienced heavy fighting that caused large-scale damage and displacement. Many people sought refuge in the Protection of Civilians (PoC) site within the peacekeeping base.

As it was never intended to become a long-term settlement, the site conditions soon became very dire, particularly during the rainy season. Four years after its establishment, and because of new population influxes in 2017, the site required rehabilitation due to uneven distribution of common facilities and infrastructure, as well as disorganized location and density of shelter areas.

The main issues in the PoC included congestion and overcrowding, encroachment of roads, lack of privacy for families sharing communal shelters, as well as the overall deterioration of shelters. Recurrent flooding affected the site, due to collapse of drainage and lack of tertiary drainage. The environment also contributed to increasing risks to safety and security, including gender-based violence.

## SITE REHABILITATION PROGRAMME

Site planning and development activities in South Sudan were coordinated under the Camp Coordination and Camp Management (CCCM) Cluster. In line with the CCCM and Shelter-NFI Cluster strategies, and building on the experiences of the PoCs in Bentiu and Wau, two organizations and the CCCM Cluster led the rehabilitation process of the Malakal PoC between 2017 and 2018, with the support of the peacekeeping mission.

Organization A – which was in charge of site management in the site since 2014 – led the community mobilization and shelter construction components, while Organization B was the overall lead of site planning and site development across the site. This case study focuses on the reconfiguration process of sector 4.



Before rehabilitation, the site offered very poor shelter conditions and was overcrowded, with related fire and safety risks for its residents.

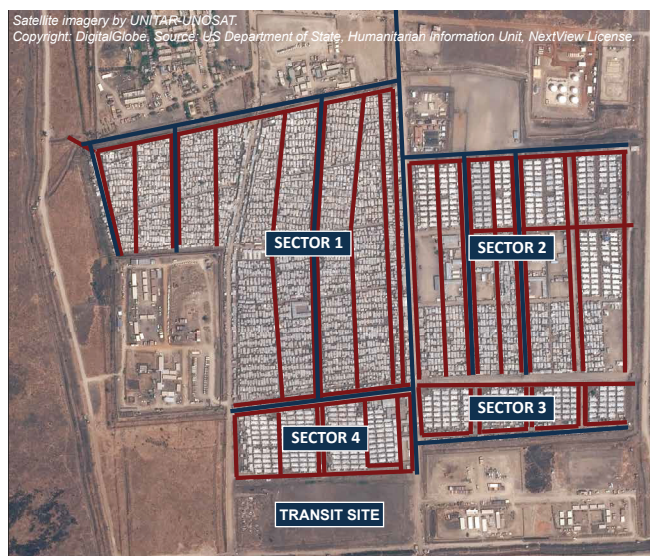
## PLANNING PHASE

Standard Operating Procedures were developed to guide the process, an inclusive community consultation and sensitization plan was created, and community specialized committees established to support the communication with site residents on the reconfiguration. Mass communication campaigns were conducted to ensure the population at large was informed.

Two prototype shelters were constructed for exhibition, allowing for dialogue with community members and helping to further refine the design in a participatory manner.



A transit site was established next to sector 4 and used to gradually move people and clear areas of the old site. Due to its small size, the speed of the relocation and rehabilitation process was slow.



Map showing the drainages (in dark red) and roads (in dark blue) rehabilitated as part of the site upgrade. This case study focuses on sector 4 of the site.



### SHELTER DESIGN

The objectives of the new shelter design were to increase the minimum covered living space, improve privacy and dignity for users and provide a more robust and durable solution, compared to the existing communal shelters. New shelters were taller than the old ones, to enable better ventilation and had roof overhangs to provide shading for outdoor activities.

Organization A initially designed a 9m<sup>2</sup> shelter in consultation with the Shelter Cluster, for an average household of three members. However, the shelter design was later revised to accommodate the increased number of people arriving in the PoC and the average household size. The shelters were arranged in blocks, with each individual unit measuring 3x4.5m. Household sizes ranged from three to eight persons, with an average of five. Shelters were designed for up to four people, so for larger families two shelters were allocated, with the option to remove the internal partition if desired. For polygamous families, shelter allocation was based on the number of wives and children.

The involvement of IDP committees was essential in the process of shelter allocation. For example, the organization initially planned to move some of the households to other sectors in the site, due to the large population in sector 4. In order not to separate families from the same groups, community representatives suggested to allocate one shelter for households of up to five members, even if this meant that they would have less living space.

### BENEFICIARY REGISTRATION

Once Organization B completed the site plan and collected biometric data of residents in sector 4, Organization A conducted the beneficiary registration process. This was sensitive, as one of the potential risks was that residents from other sectors would claim shelters in the reconfigured sector. Households were mapped to ensure relatives and people from the same group would be resettled together, as well as to identify and prioritize vulnerable individuals and consider specific protection needs in the allocation process. Conducting the allocation in the design stage also aimed at involving beneficiaries earlier on, as they would be responsible for the construction of their shelters.

A complaints desk was established jointly by site management and protection actors, to assist people with special needs and those who had not been registered.

### REHABILITATION PROCESS

Organization A established a transit site with 459 tents and storage spaces in an empty area adjacent to sector 4. In coordination with WASH partners, it upgraded the existing latrines and bathing facilities, and built four communal spaces and kitchens.

The rehabilitation was phased, starting with residents in the most congested blocks, who were first moved into the transit site. The site management team supported the verification and relocation of individuals from their shelters to the transit site and deployed additional personnel to manage it.

Site management staff carried out regular sensitization and awareness campaigns on the maintenance of available services at the transit site.

During the rehabilitation, the organization coordinated the monitoring, identification and demolition of unauthorized structures along the WASH corridors to create more space for facilities, and maintain road infrastructure to facilitate service delivery. A total of 83 shelters were dismantled.

In blocks where people had already moved, old shelters were dismantled and the site cleared, mainly through community mobilization. Organization B conducted the initial earthworks, including grading and levelling, decommissioned the old drainage and excavated the new channels and roads according to the site plan. Soil was sourced from a nearby quarry and transported on site for backfilling, grading and compacting of the ground for the blocks. Finally, tertiary drainage around shelter blocks was excavated.

Once the space was rehabilitated, levelled and shelters were built, IDPs were allocated to newly constructed shelters.

Close coordination with the protection team sought to ensure that persons with specific needs were prioritized in the shelter reallocation and that their position in the new layout was close to services and WASH facilities.



After residents of a block had moved to the transit site, old shelters were dismantled and the area cleared.



*New shelters were built by local community members after ground levelling.*

### SHELTER CONSTRUCTION AND TRAINING

New shelters in each rehabilitated blocks were built involving site residents. Local carpenters were trained on shelter construction and maintenance, and were responsible for plot demarcation and sizing of materials to ensure speed and efficiency. Fifty-four community members were trained in demarcation, set-out, shelter construction and maintenance. These then trained their assistants on-the-job. Shelters were built through cash for work in blocks of four to six units, aiming to maximize available space for infrastructure and services.

The organization also conducted training to households within each block on shelter maintenance and site management, with a focus on avoiding construction of unauthorized structures and on fire safety.

This process ensured residents could participate in the construction and, even more importantly, in the care and maintenance phase, as well as earning an income in the process.

### MATERIALS AND SUPPLY

The phased relocation approach allowed for a phased procurement of materials and easy storage, which minimized damage and loss of assets.

The shelters were made of timber and plastic sheeting for walling and roofing. Almost all materials were sourced outside Malakal, due to the unavailability in the local market and to protect the already dilapidated physical environment from further deterioration.

Initially, Organization A had considered acquiring most materials from the Shelter-NFI pipeline. However, the pipeline could only provide plastic sheeting used for the partitions, so the organization engaged certified suppliers authorized by the government to harvest poles in surrounding counties and monitor the transport to the site.

Materials were transported through the Logistics Cluster, which meant that the delivery was relatively slow, as it relied on their schedule and priorities. Most materials were stored off site, while three containers were moved to the site to pre-position items during the phased construction.

Organization A procured two timber cutting machines and constructed a workshop on site. Shelter staff trained five carpenters in the PoC on general operation of the saw machines, as well as on how to size the timbers at different angles, and trained casual workers on how to protect timber against termites. Timbers were cut in the required lengths as per the design and bundled as kits for each block.

Organization B took care of the mobilization of site clearing equipment and the procurement of culverts.

### COORDINATION

The site management team, with the support of the CCCM Cluster, acted as a bridge between service providers and site residents to ensure gaps could be reported and service delivery was efficient. In this capacity, Organization A maintained essential communal infrastructure such as footbridges, communication centres, community halls and recreational areas.

It also supported the dissemination of information products from partners, to create awareness on services available to mitigate and address protection risks within the PoC. This campaign was then expanded to the host community through outreach teams and the delivery of leaflets on Protection from Sexual Exploitation and Abuse (PSEA) and referral pathways.

The organization established and circulated a quarterly community meeting calendar amongst all partners, to ensure that meetings with various groups were properly coordinated, and to promote participation. Moreover, to respond to community engagement challenges in the early phases, the organization facilitated bi-weekly meetings between agencies and camp leadership structures to share updates, coordinate aid delivery and ensure that assistance reached the most vulnerable.

### MAIN CHALLENGES

**ACCESS AND LOGISTICS.** Shipping of materials was delayed due to insecurity around Malakal, and heavy rains affected the site development works. One machine broke down, but was fixed using the standby mechanics who were employed for regular repairs.

**UNDERSTANDING OF TECHNICAL STANDARDS.** Initially, community leaders struggled to understand the standards used for site layout, width of roads, drainage and distance from shelters to latrines. Using prototypes and demonstrations on the ground helped explain these concepts to the community and solve any disagreement.

**COMMUNITY RESISTANCE.** Several hurdles with community youth occurred during the rehabilitation process. These included disagreements over the occupancy rate and number of shelters per block, which led to the stopping of demarcation works, and over a pay rise due to currency inflation, which caused workers to go on strike. Prolonged negotiations and a re-calculation of the pay rate solved these issues. In one instance, violence against project staff required the mediation of peacekeepers and the redesign of the proposed block layout.

### PROTECTION AND COMMUNITY ENGAGEMENT

As part of a separate PSEA initiative, Organization A – together with another agency – conducted awareness sessions for men and women separately, trained community committees and set up a Community-Based Complaint Mechanism across the site.

Community-led protection structures were supported with incentives and involved in decision-making on key initiatives. Beneficiaries were consulted on the reconfiguration plan through focus group discussions with youth, elderly and women's group, as well as by involving community leaders.

The organization also promoted participation of 50 per cent men and women in camp leadership structures, and ensured age, gender and area of origin were equally represented in community committees.



## STRENGTHS, WEAKNESSES AND LESSONS LEARNED



Priority activities in the rehabilitation included backfilling, ground levelling, reconstruction of drainage and rehabilitation of secondary roads, as well as reorganization of the space to improve access to services.

### STRENGTHS

**+ Procurement delays were anticipated and alternative materials stocked as contingency** (e.g. bamboos to replace timbers). To overcome transport delays from the logistics base to the site, additional storage space and vehicles were secured to pre-position items on site.

**+ Participation and engagement of the community** at all stages of the project.

**+ Equitable and effective shelter allocation process.** This was possible thanks to the collaboration of site management, protection and registration teams from the two organizations.

**+ Good coordination and collaboration with all stakeholders,** both at inter-cluster level and between the two implementing organizations.

**+ Effective collaboration with peacekeeping forces** proved instrumental in overcoming issues with the community and providing logistical support when needed, also thanks to the joint monitoring visits conducted with the two implementing organizations.



The new shelters were taller and larger to provide better ventilation and privacy.

### WEAKNESSES

**- The extent of initial resistance and demands from community members were not sufficiently anticipated,** despite the strong community engagement component.

**- Initial gaps in coordination between partners** meant that communities were often unilaterally engaged and schedules not aligned. To help coordinated resources and activities, a common plan, a calendar for community mobilization activities and regular operational meetings were set up.

**- The small size of the transit site** limited the number of households that could be relocated and impacted on the intervention capacity. The transit site could only accommodate one block of households at a time, thus relocation, site development and shelter construction were limited to the size of the vacated block.

### MATERIALS LIST FOR FOR A STANDARD BLOCK

Items	Units	Qty	Unit cost (USD)	Total cost (USD)
2x4" Hardwood timbers	pcs	58	4.9	284.20
2x2" Hardwood timbers, 4m long	pcs	40	2.79	111.60
4x5m plastic sheet	pcs	13	13.5	175.50
Bamboo	bundles	11	10	110.00
Binding wire	kg	4	1.6	6.40
Nails 4", 3" and 2"	kg	12	1.4	16.80
Rubber washer	packet	2	5	10.00
Nylon ropes (30 m/roll)	roll	4	5	20.00
Labour for construction	crew	1	65	65.00
Transportation, loading and offloading	lump sum	1	5	5.00
<b>Grand total per block</b>				<b>804.50</b>
<b>Average cost per individual shelter</b>				<b>201.13</b>

### LESSONS LEARNED

- **Managing community expectations.** Shelter prototypes should display the same size of blocks and exact types of materials as will be used for the actual construction, as any deviation will be a cause for disagreement and contention.
- **Continuous engagement of the IDP committees** was vital to the reconfiguration process. Some of the suggestions made by community representatives – including around the shelter allocation by household size – contributed to the project's success.
- **Holding meetings outside the targeted sector of the site** provided a more conducive environment to address issues, especially after the incident that involved violence against staff.

## 13 / D.9 Sudan - 1985 - Conflict

### Case study: Planned camps

#### Project type:

Planned camps

#### Disaster:

Civil war and famine in Ethiopia  
(Eritrea and Tigray) 1983-1984

#### No. of people displaced:

Hundreds of thousands

#### Project target population:

232,000 across 15 camp complexes (June 1985)  
Camp capacity designed for up to 640,000

#### Occupancy rate on handover:

Unknown

#### Shelter size:

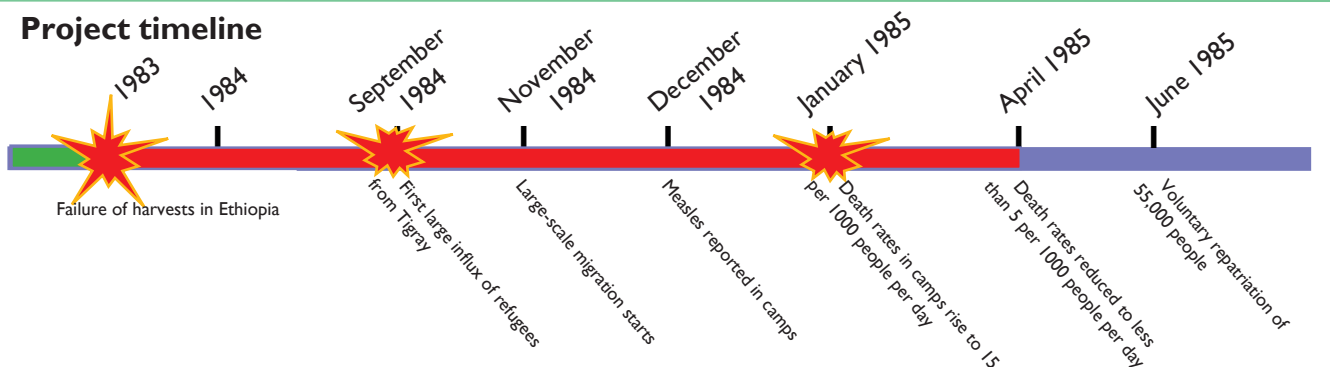
Various



### Summary

Relocating refugees from smaller camps gave time to create better sites and facilities in the larger camps built as part of the second stage. Building camps using a hierarchy of shelter groupings (cluster-block-sector) helped the humanitarian actors ensure support for the cycle of repatriation.

### Project timeline



### Strengths and weaknesses

- ✓ Working with local relief agencies allowed camp planners to understand village and community structures, and to adapt camp layouts to those structures accordingly.
- ✓ Having clearly demarcated sections and blocks in a camp facilitated both repatriation and phased reuse of the camp for newcomers.
- ✓ Decentralisation of services in the camp allowed for easier training of village health workers in preparation for repatriation.
- ✗ Multi-sectoral guidelines on camp planning and camp management had been available for a number of years,

but were insufficiently known among many implementing organisations.

- ✗ Unplanned camps not only had problems with water supply, but some then had health-threatening problems with drainage once the rains arrived.
- ✗ Relocation to new camps, while unavoidable, had large programme costs.
- ✗ Not even advanced camp layouts can solve the grave issues of malnutrition or communicable disease.

Case study credits: Cuny Center



## Before the influx

There had been ongoing conflict between the Ethiopian government and rebel groups fighting for independence for the provinces of Eritrea and Tigray since the 1970s. Many refugees from the conflict moved to Sudan. During 1983-1984, the conflict combined with drought across many countries in Africa to create a major famine. There were no early warning programmes or adequate stockpiles until after September 1984.

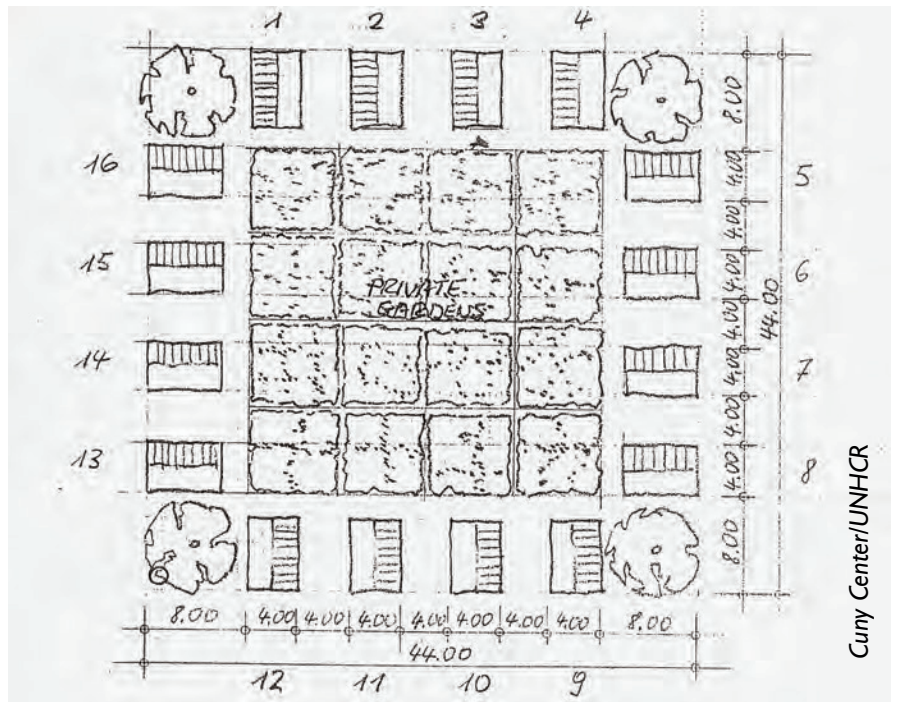
Before 1984, sufficient food had been supplied into Tigray from Sudan. By mid-1984 the Relief Society of Tigray, a national civil relief organisation, stated that the famine had reached crisis levels and that they would lead Tigrayans out of Tigray and into Sudan, where they could receive aid.

Initial camps in Sudan were sometimes located adjacent to the sites of older permanent refugee settlements. In early December 1984, it was realised that there were not enough water resources for these camps. A decision was taken to look for sites that would support larger numbers of refugees. Even then, not all camps had adequate clean water for many months. Waterborne disease, alongside measles and malnutrition in new arrivals, became the chief cause of death in the camps.

Although the Sudanese had welcomed hundreds of thousands of refugees for resettlement from Ethiopia over the previous two decades, the scale of the new influxes, and the fact that Sudan itself was suffering a drought, caused a reversal of policy in the Sudanese government. Even when this decision was overturned, the government indicated that they did not expect the refugees to remain in the long term.

## After the first influx

NGOs began searching for suitable sites for new camps. Between April and June 1985, 55,000 refugees were able to return to Ethiopia. But this still left 258,000 new Ethiopian refugees in eastern Sudan, in addition to 120,000 Chadian refugees in the west of the country, 700,000 'old' Ethiopian refugees and increasing numbers of internally displaced Sudanese.



Block plan

## Selection of beneficiaries

There was no selection per se. As the refugees arrived in the camps in more or less intact village groups, it was possible to work with the village leaders and social structures to identify vulnerable members.

## Land rights / ownership

There were no permanent land rights given to refugees. In fact, the government of Sudan insisted that new refugees would not be granted permanent residency.

## Technical solutions

Once decisions had been made to transfer some of the refugees from inadequate camps, the new camps were set up following a hierarchy of blocks of buildings. This started with a cluster of shelters based on the size of each extended family. These clusters could be grouped together to form a block that would follow the size of a single village. A number of blocks would form a sector of a camp.

Importantly, the number of clusters in a block was not predetermined, but was dependent upon the number of extended families coming from each village in Tigray. To the extent possible, services such as health units and supplementary feeding centres were decentralised throughout the camps. Space was left in each block for late

arrivals from each village.

This cluster, block and sector hierarchy was derived from the *Handbook for Emergencies*, which had been made available two years before the crisis. A Sudan-specific version of the handbook specific was created.

As the main emphasis was placed on water supply, sanitation and the logistics of food and medicine, the basic shelter was often a traditional tukul tent made out of branches, although there were some distributions of other shelter materials. The government's insistence that the camps were to be short term often prevented the use of any more durable shelter materials, even if the resources had been available.

## Implementation

The Relief Society of Tigray would often lead the Tigrayans into Sudan in entire village groups. In some cases, the society would also participate in the transfer of groups from one of the first camps to a second camp with better facilities.

## Materials

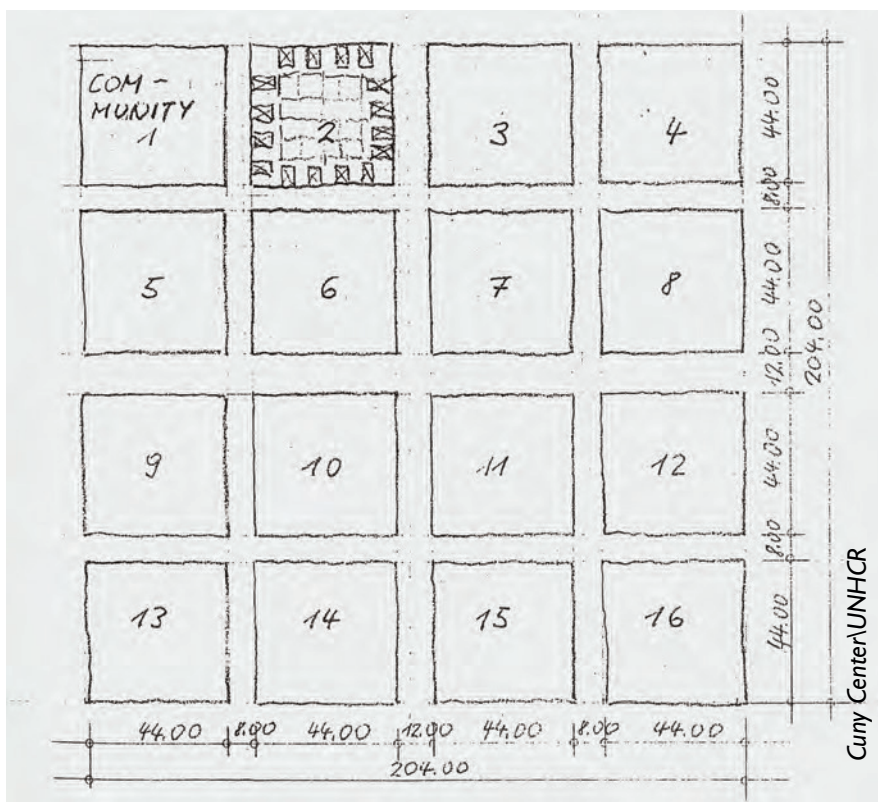
Pressure from the Government of Sudan meant that use of any 'permanent' materials was avoided. Although there were distributions of plastic sheeting, many of the refugees

lived in self-built tukul tents, made from tree branches, grass thatch and cloth.

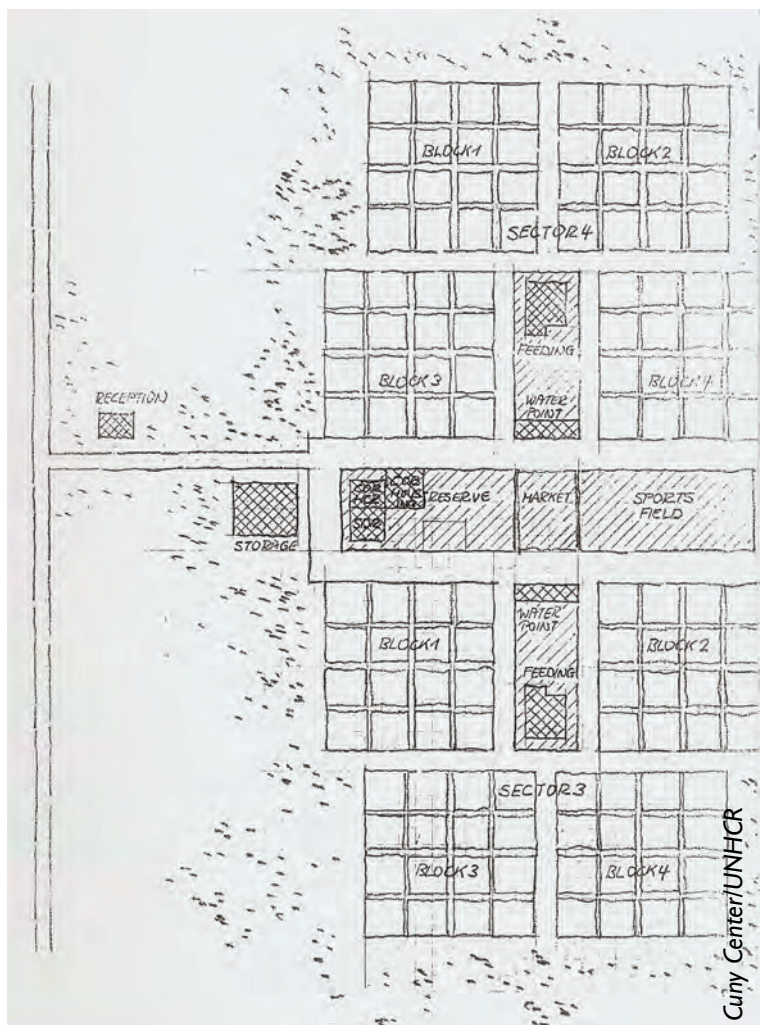
**Logistics**

Access to the camp helped with logistics. The most important paved highway in Sudan, connecting Port Sudan with Khartoum, ran through the camps areas. A major train line also ran adjacent to the highway for part of the time, and airports capable of handling large jets or C-130s were available at towns used as logistics hubs.

Most materials had to be imported using UN mechanisms, apart from individual shelter materials scavenged by the refugees. During the emergency, there were some severe delays in the provision of materials, but these were caused by poor pre-planning, lack of stockpiling and internal organisational issues, as much as by lack of physical infrastructure.



Sector plan



Camp plan

*‘[The design] had several major advantages. First, it enabled the relief agencies to train a cadre of health workers from each village. In the event that people decided to return to Tigray (which many of them did several months after arriving in the camp), the skills and training the workers had acquired would be taken back to the village with them. Second, it provided camp administrators with a simple way to reunite families. When anyone entered Sudan, they simply had to tell the relief authorities what Tigrayan village they were from; they could be transferred to the camp where the people from that village were located. Family reunification could then be handled on a self-help basis. Finally, camp administrators were presented with an intact community organization with which to work, facilitating activities which required notification or organization of the refugees.’ - Fred Cuny*



## 14 / D.7 Thailand - 1979 -1980 - Political conflict

### Case study: Refugee camp

#### Project type:

Construction of two refugee camps  
Development of a manual of standards

#### Disaster:

Invasion of Cambodia by Vietnam,  
December 1978

#### No. of people displaced:

About 1 million people crossed the border  
into Thailand at the height of the displacement.

#### Project target population:

Khao-I-Dang refugee camp went from  
29,000 people shortly after its opening in December 1979,  
to 130,000 -160,000 in March 1980, to 42,000 by 1982.

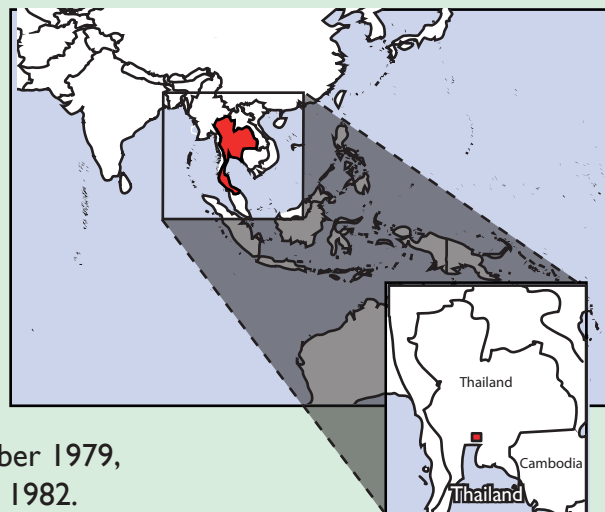
Sakeo camp had 28,000 people shortly after opening, dropping to  
17,000 when it closed in July 1980 (the remaining 17,000 were transferred to other camps).

#### Occupancy rate on handover:

100%

#### Shelter size

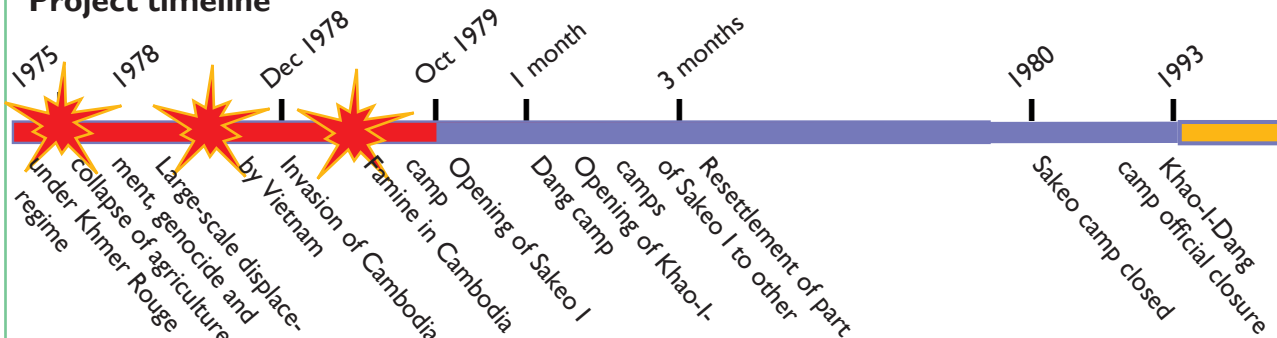
16m<sup>2</sup> (in multi-family units)



### Summary

For the first time, clear numeric standards were introduced via the distribution of an operations policy and standards manual to each camp to ensure equitable minimum services, based primarily on public health and water/sanitation concerns. Two camps were planned according to these standards, using a decentralisation of services, and in later cases a 'checkerboard' design that provided internal space for some expansion.

### Project timeline



### Strengths and weaknesses

- ✓ Creating a written manual provided a clear checklist for the many organisations with limited prior experience.
- ✓ Spaces for expansion within the camp permitted some release of pressure from increasing population levels.
- ✓ Advocacy of an incremental approach to shelter provision allowed for a response to continued influxes and increasing camp populations.
- ✓ Innovations in water/sanitary latrine technology

('aquaprivies') permitted more flexibility in shelter layout design.

- ✗ Although multi-unit longhouses freed up more external space in extremely cramped sites, their use postponed rather than solved the problem of overcrowding, and at the expense of privacy and security.
- ✗ An overall lack of space and poor drainage contributed to health problems.

Case study credits: Cuny Center

### Before the opening of the camp

The invasion of Cambodia by Vietnamese forces in December 1978, the escalation of fighting between Vietnamese and Khmer Rouge forces after June 1979 and famine in October 1979, caused a mass influx of refugees across the border into Thailand, peaking at approximately 1 million people in late 1979 and early 1980.

The Thai government was initially reluctant to host the refugees. After early incidents where 40,000 refugees were returned to Cambodia, the Thai authorities agreed to permit camps in nine locations in the border area. However, they insisted on close control of access and the delivery of services to the camps, and on the basic and supposedly temporary nature of those camps.

The refugee population had been severely traumatised by four years of forced displacement, genocide, famine and armed invasion.

Of the nine camps, eight were internally controlled directly by the Khmer Rouge army or its affiliates. The camp at Khao-I-Dang, however, was the only one under clear Thai government authority, administered by the UN. Leaders of the refugee groups presented themselves to the camp administration at the opening of the camp.

Due to the size, speed and high-profile nature of the emergency, the UN had to cope with a rapid expansion of its own staff and the arrival of large numbers of NGOs, many without prior experience in the field. Because of the variability of the experience of the UN and NGO staff, a consultancy firm was hired to develop a manual of standards. Many of those policies and standards were implemented at the Khao-I-Dang and Sakeo camps.

### After the opening of the camp

Both camps opened in October-November 1979 and quickly filled to capacity. Khao-I-Dang camp was initially intended to be temporary, housing people who would be then transferred to other camps, repatriated, or resettled in other countries. The camp also became a collection point for those who had been injured during the conflict.

Despite the later population reduction of the Khao-I-Dang camp, the initial increases in population had posed severe challenges for control of the camps. Overcrowding and the high-turnover nature of camp residents caused the camp to descend into violence and to become extremely difficult to govern at times.

### Selection of beneficiaries

The mass numbers of the influx and the political pressures exerted by the Thai authorities and the Khmer Rouge did not permit beneficiary selection upon arrival. Resettlement programmes and transfers influenced the selection of who later left the camp.

### Land rights / ownership

Thai authorities designated the camp site and the camp administration assigned individual plots to refugees. All rights of occupancy were understood to be non-permanent. When all the camps closed 1993, repatriation was supported through UN-backed programmes aiming for land grants and providing legal advice.

### Standards manual

A policy and standards implementation manual was drafted for the UN by consultants during the last months of 1979 and published in draft binder form by January 1980. The camp sites and services part of the manual had eight initial parts focused on water and sanitation issues, and one part on housing and construction. It emphasised minimum numeric standards, along with clearly defined job roles and responsibilities within the camp.

Implementing agencies in the camp were to be held accountable to these standards through routine assessments undertaken by the UN. The stated goals for the manual were:

- To ensure that all services meet a basic minimal level of quality;
- To ensure that all services are provided in a uniform manner;
- To provide the basic information necessary to successfully implement UNHCR standards;
- To standardise routines and to facilitate reporting and monitoring;
- To provide a guide for those who have had no prior experience in the field; and
- To ensure that the mistakes of

previous relief operations were not repeated.

Through regional workshops with the consultant and others in 1980, this manual formed the starting point for the first draft of the UNHCR *Handbook for Emergencies*.

Because of the lack of space, the shelters were constructed as multi-family longhouses, using mainly traditional materials (bamboo and thatch). Fire-retardant wallboard was used for the sides of the longhouses and for the internal divisions between individual families. However, this did not remove problems caused by lack of privacy or communicable disease.

For the most part, the larger longhouses in Khao-I-Dang were laid out in parallel. Some reduction of space was achieved through a 'checkerboard' layout, with blocks of open space throughout the camp. This also allowed for additional shelters, if required. In the Sakeo extensions, the longhouses were grouped into four to eight houses around small internal squares. These were intended as private outdoor space or vegetable gardens for each grouping of refugees. Later shelters were also improved by building them on stilts, to avoid flooding during the rainy season.

### Implementation

The organisation assigned a number of NGOs to undertake the different phases of camp construction, upgrading and maintenance, using the manual as a general guide. The refugees themselves were responsible for the construction of their own shelters.

### Logistics and materials

The basic materials were provided to the refugees by the humanitarian organisations.

### Materials list

The following is a partial list of the materials used for the multi-unit shelters.

Materials
Bamboo poles
Plastic sheeting
Rope or wire
Thatch (palm)
Fire-resistant wallboards
Timber flooring



## 15 / 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.

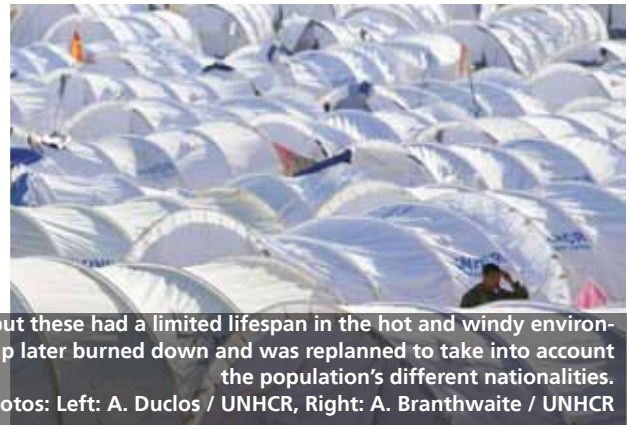
## Site construction

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.

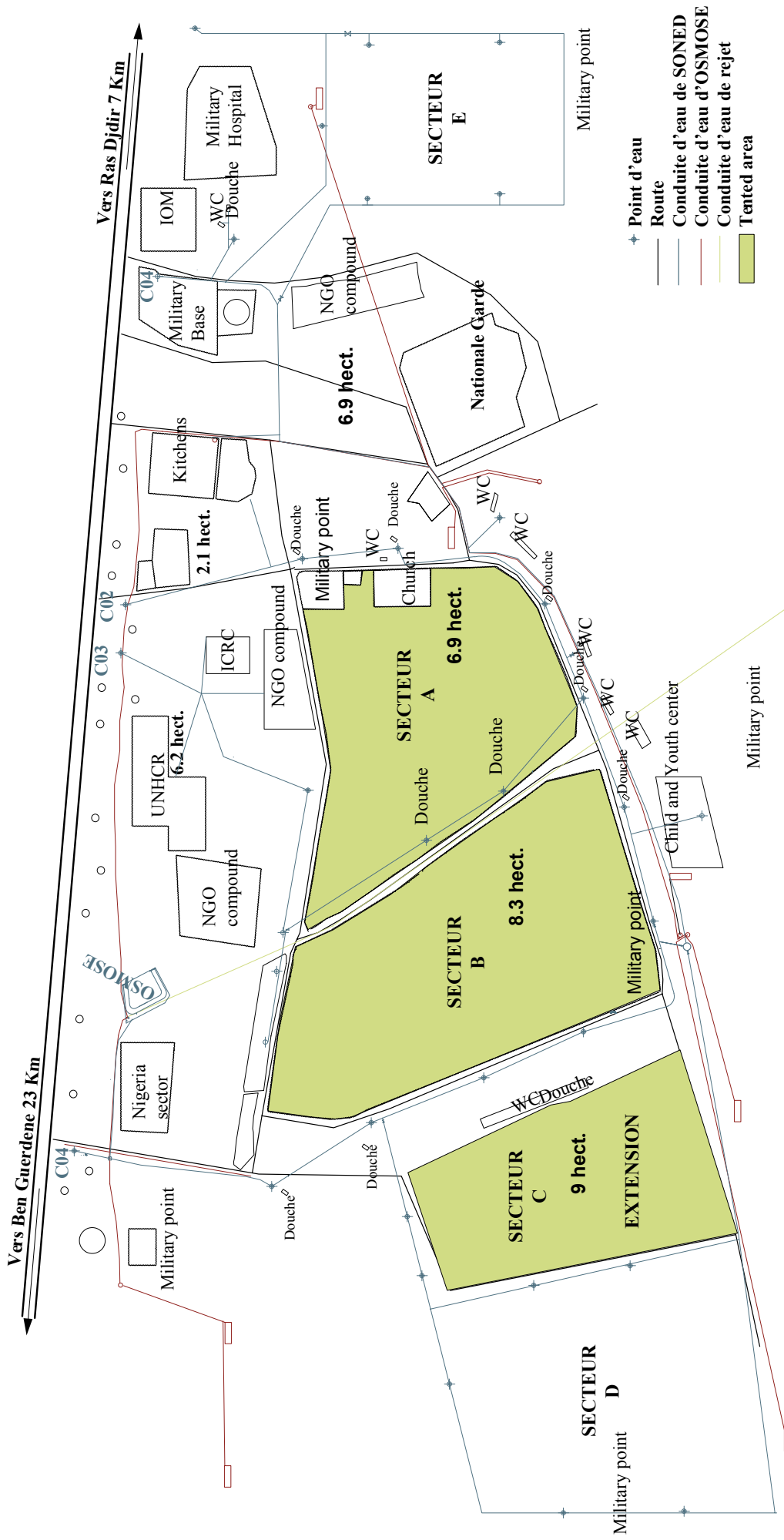
## Exit

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. = 10,000m<sup>2</sup>

<b>Camps Réfugiés Choucha</b>	
<b>Plan Réseaux</b>	
Ben Guerdane, 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.



## 16 / C.21 Turkey, Gediz - 1970 - Earthquake

### Case study:

### Overview

Case study credit:  
UNDRO 1982

#### Disaster:

7.2 magnitude earthquake  
Gediz Turkey

#### Disaster date:

28 March 1970

#### Number of houses damaged:

20,000

#### Number of people displaced:

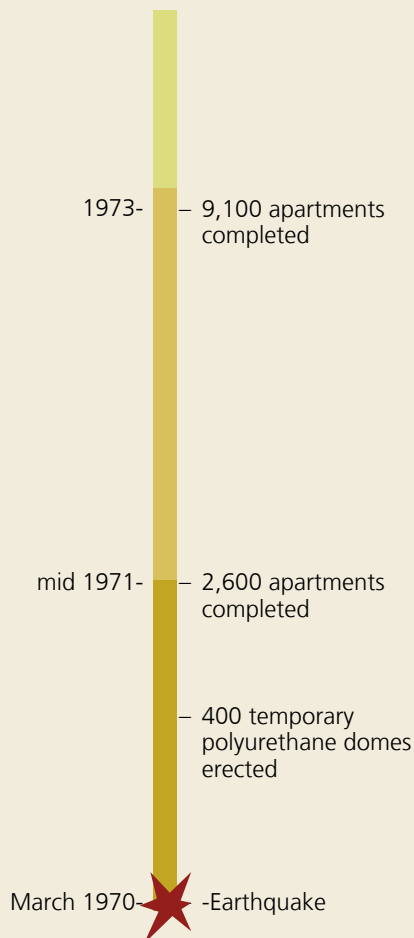
90,000

#### Value of damage:

23 million UsD (at 1970  
value)



#### Project timeline



#### Summary

In Gediz temporary shelter was used only for a very short period. in Ackaalan 400 polyurethane domes were built and occupied. Imported labour was used for the clearing rubble.

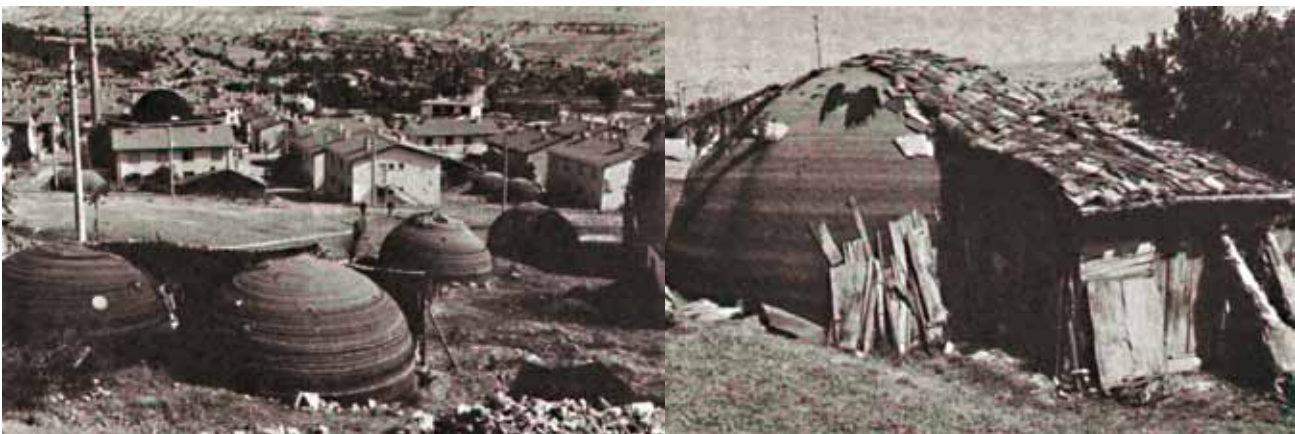
The Government decided to rebuild Gediz 5 km to the south of the destroyed town. The town of Ackaalan was rebuilt on the original site. The government built 9100 apartments in three years.

#### Strengths and weaknesses

- ✓ Residents of Ackaalan argue that a longer period in temporary accommodation gave rise to better construction of permanent homes due to increased time available for construction.
- ✗ The relocation of Gedez has created long-term problems, occupants still maintaining close links with the old town.
- ✗ Coordination between village communities and Government planning officers was not satisfactory.
- ✗ The very swift reconstruction of buildings created many problems. Local residents believed that more time could have been devoted to the planning process with long-term benefits.



Maps of a neighbourhood of the resettlement village of new Muhipler drawn 13 years apart. Left 1971, Right 1984  
 Illustration: Housing and Culture after Earthquakes / Yasemin Aysan / Paul Oliver / Ian Davis



Polyurethane 'igloos' were deployed. An experiment that was discontinued after the 1975 Lice earthquake  
 Photos: Housing and Culture after Earthquakes / Yasemin Aysan / Paul Oliver







This booklet is a compilation of case studies of humanitarian shelter responses with site planning component compiled across the seven past editions of the interagency publication Shelter Projects.

The projects described in the case studies and overviews contained in this booklet represent responses to conflict, natural disasters and complex crises, implemented by national and international organizations, as well as host governments, and demonstrating some of the implementation and response options available.

The publication is intended to support learning by highlighting the strengths, weaknesses and some of the lessons that can be learned from different projects, which try to maximize emergency funds to safeguard the health, security and dignity of affected people, whilst – wherever possible – supporting longer-term shelter needs and sustainable recovery.

The target audience is humanitarian managers and shelter programme staff from local, national and international organizations at all levels of experience. Shelter Projects is also a useful resource for advocacy purposes, showcasing the work done by the sector, as well as for research and capacity-building activities.

All case studies and overviews contained in this booklet, as well as from all editions of Shelter Projects, can be found online at:

[www.shelterprojects.org](http://www.shelterprojects.org)



**Global Shelter Cluster**  
ShelterCluster.org  
Coordinating Humanitarian Shelter