

A.10 Kenya, Dadaab - 2009 - Conflict refugees

Case study: Update - Shelter construction

See A.11, Kenya, Dadaab - 2007-
Flooding page 24 for more

Country:

Kenya

Disaster:

Conflict – Somali refugee influx

Disaster date:

Ongoing since 1991. Last update report in 2008

Number of people displaced:

Total 250,000 in the camp.
50,000 new arrivals to the camp since 2008

Project target population:

Up to 3500 households per year, for an ongoing project

Occupancy rate on handover:

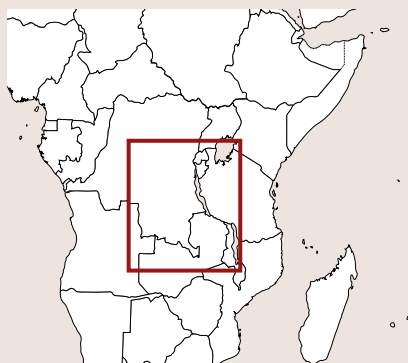
100%

Shelter size:

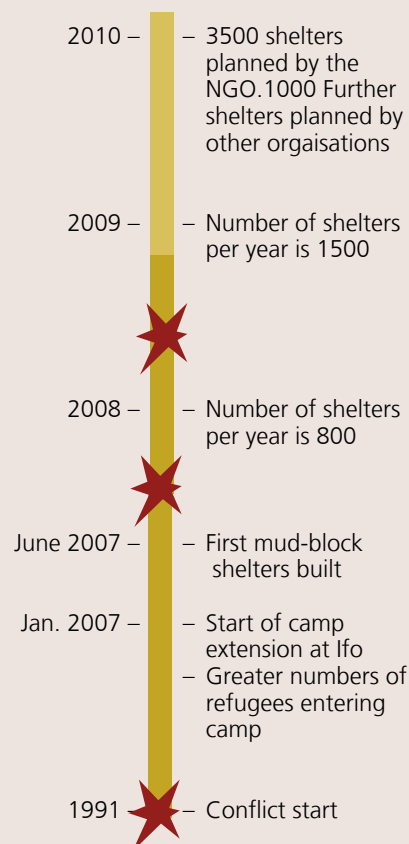
18m². 6m x 3m interior space

Materials cost per shelter:

480 USD



Project timeline



Summary

Existing construction programmes were continued and scaled up. Following previous years' shelter activities, a full evaluation of the number of shelters that could be built was conducted. It was agreed that security, logistics, and availability of sustainable materials limited construction to 3500 shelters per year as a maximum.

Strengths and weaknesses

- ✓ Environmental issues were given consideration as an integral part of the project
- ✓ Beneficiaries were given larger internal space than available in tukul tents
- ✓ Longer lifespans of shelters and reduced amount of timber has positive impact upon stresses to the local environment.
- ✓ The construction of the shelters has created a complex secondary economy for people such as brick-makers and mouldmakers.
- ✓ Innovative projects have been created with sustainable environmental benefits for members of the host community connected with the shelter programme for refugees.
- ✓ Shelter type has very good acceptance by the refugee

population, with some households making the mud blocks even before being formally registered. A number of shelters have been adapted by the beneficiaries to provide space for a variety of livelihoods.

- ✗ Project is limited by the availability of suitable sources of mud, and by the limited supply of water. Difficulties remain in finding sustainable sources for timber.

- ✗ Limits on locally available materials cause larger per-unit costs for transportation.

- Targeting of most severe levels of damage ensured that those most in need of shelter were supported. The increased costs of doing so meant that fewer households could be supported, and almost none whose houses had suffered a mid-range of damage could be given support.



Shelters showing their plinth that provides protection from flood water
 Photo Left: Jake Zarins
 Right Jim Kennedy

Shelter in Dadaab camp

The start of the programme was reported in Shelter Projects 2008. Since 2008, the situation for many families living in Somalia has worsened. At the same time, a small number of refugees from South Sudan have been able to voluntarily repatriate. Consequently, the population of Dadaab camp has increased from 200,000 to approximately 250,000, with an estimated influx of 5000 new arrivals per month.

Although some of these new arrivals are accommodated in extension blocks in new sections in the Ifo part of the camp, other new arrivals have found space staying with families already living in older blocks. This has led to an increase in density of the population in those areas.

Although there are still high levels of poverty and some degree of child malnutrition in the camp, in general the economy of the camp has developed and increased remarkably since 2007. There are visibly many more stalls in the main markets in the camp, and enterprises employing multiple workers, such as ice factories, have been established.

There are plans for another large-scale extension of the camp in 2010, intended to accommodate new arrivals.

Implementation

Since 2007, the implementing organisation has been able to increase its capacity to deliver 3500 shelters per year. It has also been able to establish depots in each of the sub-camps where it works. These depots include large spaces for the fabrication of concrete latrine slabs.

Families are still expected to produce mud blocks themselves (approximately 1700 blocks per shelter). This ensures a sweat equity component to the programme, and provides the labour resources necessary for a programme of such scale. However, this approach continues to result in unplanned excavation of mud within the camp, with the holes often becoming refuse pits, or mosquito-breeding sites in the rainy seasons.

The mud excavated for the se blocks forms only a part of the total mud excavated by the refugees in the camp, but the organisation is aware of the environmental impacts of their programming.

In 2009, the organisation reviewed all elements of the shelter programme in Dadaab. The aim of this was to create a systematic and holistic approach to reducing the environmental impact of the shelter programme. The maximum amount of shelter support that it could provide per year was definitively agreed. Shelter programming was limited by the organisation's logistics and the volume of sustainable materials.

Selection of beneficiaries

Selection of beneficiaries is done according to agreed vulnerability criteria. Block leaders are asked to propose a list of the most vulnerable members of the people living in their block. This list is then cross-checked by the organisation.

Technical solutions

In place of the traditional 'tukul' tents, or the wattle-and-daub huts, the organisation provides refugee households with support to construct more durable shelters. These are made from mud blocks with roofing made from timber and corrugated iron.

The design uses larger pillars and widened foundations (made with mud blocks) to provide better resistance against flooding. The design is now being reviewed, so that for parts of the camp with a lower risk of flooding the foundation may be made smaller.

Recent pilot projects have been conducted to further reduce the environmental impacts of construction, by investigating alternative, recycled materials. These include poles made from recycled plastic for use in the construction of latrine cabins.

Logistics and materials

Before 2007 it was assumed that mud was an unlimited material. Further investigation of the geology of the area, as well as the land ownership patterns, have revealed that types of mud appropriate for block-making are in limited supply. For a certain proportion of the mud



Photo: Jake Zarins

needed each year, agreements can be made with the local community and local NGOs to excavate water-pans. The excavated mud is used to make the blocks.

For larger amounts of mud, transportation from further afield may be necessary. The organisation has also worked with the United Nations Environment Programme, the Forest Stewardship Council, the Kenya Forestry Service and the private sector to map the potential for identifying sustainable timber sources in Kenya.

In an arid climate, the provision of water for the making of the mud and for the fabrication of concrete slabs for the latrines continues to be a concern. The organisation is currently considering the feasibility of digging bore-holes which would be dedicated simply to the water supply needed for the shelter and latrine programme.

Materials list

Material	Quantity
2.5m long Corrugated Iron sheets	20 sheets
Plain steel sheet (door)	1sheet
2x2 timber - cypress	102m
Nails 3"	0.25Kg
Nails 4"	2.5Kg
Nails 2"	6 pieces
Nails 1"	.5kg
Roofing nails	2.5kg
Tower bolt	1
Padbolts	1
Galvenised iron ridges	4
Butt hinges	3pcs
Wood preservative	8l
Binding wire	1Kg



Photo: Jake Zarins



Shelters under construction in Dadaab. Much of the construction, including making mud blocks, is done by the women. Photo: Jake Zarins