

## A.16 Lebanon – 2007 – Conflict

### Update:

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

#### Country:

Lebanon

#### Project location:

Palestinian “gatherings” in and around Saida, southern Lebanon

#### Conflict:

Palestinian refugees

#### Displacement date:

1948 to present

#### Number of people displaced:

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

#### Project outputs:

Repairs of 557 shelters, including 412 roof repairs

#### Occupancy rate on handover:

Close to 100 per cent

#### Shelter size:

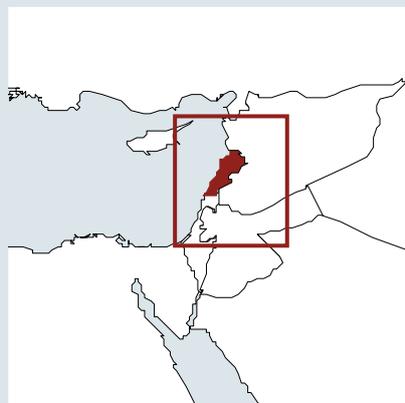
40m<sup>2</sup>–60m<sup>2</sup>, Average 50m<sup>2</sup>

#### Materials cost per shelter:

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

#### Project cost per shelter:

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



#### Project timeline



#### Project description

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

#### Strengths and weaknesses

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

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

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



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

## Background

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

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

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

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

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

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

Shelter types included:

- multi-storey buildings with concrete roofs, converted from

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

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

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

## Selection of beneficiaries

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

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

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

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

## Implementation

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

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

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

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

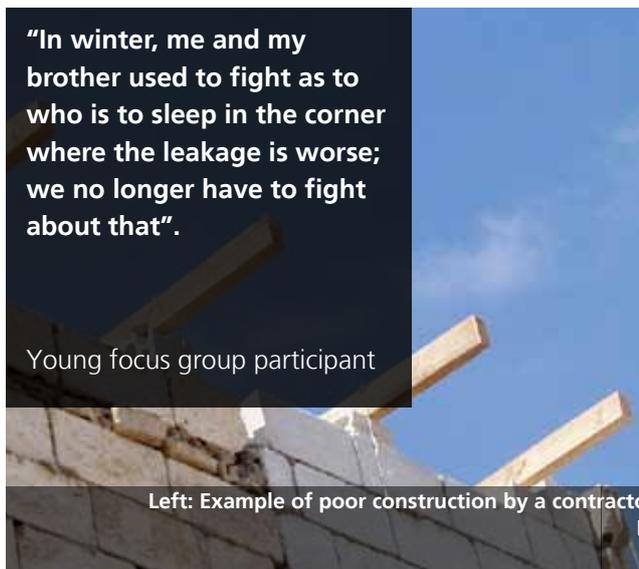
By implementing direct-build projects the organisation was also able to select community participants to receive cash-for-work and to provide basic construction training for beneficiaries during the repairs.

Rehabilitation followed a five-step process:

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

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

Young focus group participant



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



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

Photo: Arnaud Fratani

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

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

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

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

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

### DRR components

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

### Technical solutions

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

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

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

#### 1) Reinforced concrete ring beams

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

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

#### 2) New, insulated roofs

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

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

#### 3) Structural reinforcements

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

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

### Impacts

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

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