OVERVIEW

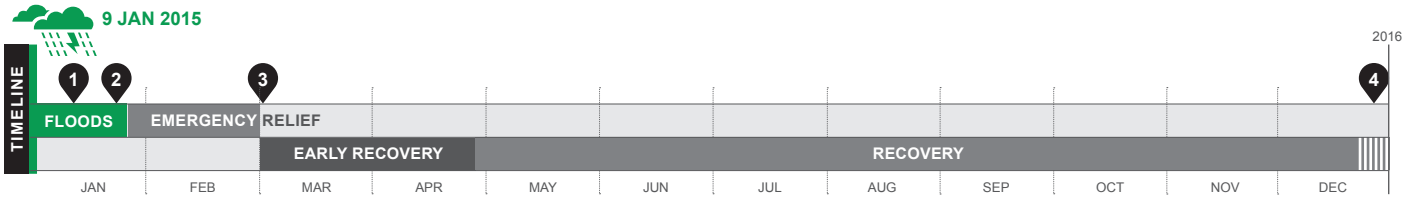
MALAWI 2015 / FLOODS

CRISIS	**Malawi floods, January 2015.**
TOTAL HOUSES DAMAGED	**523,347** houses affected. **356,643** completely destroyed[1].
TOTAL PEOPLE AFFECTED	**1,101,364 individuals affected**[1]. **336,000 individuals displaced (230,000 in displacement sites; 106,000 in host sites)**[2].
RESPONSE LOCATIONS	**15** districts affected (the most affected were Chikwawa, Nsanje and Phalombe).
RESPONSE OUTPUTS (as of August 2015)[3]	Approx. **50,000** households served with NFIs (70,000+ planned). Over **19,000** households assisted with emergency shelter (32,000+ planned). Over **2,000** households assisted with repairs and retrofits (5,000+ planned).

[1] Malawi 2015 Floods Post Disaster Needs Assessment Report, Gov. of Malawi, March 2015, http://bit.ly/2ogiYqQ.
[2] UNDAC Assessment Report, 6 February 2015.
[3] Data reported to the Shelter Cluster 4W by humanitarian organizations. Note that this data may not be 100% accurate nor complete (it does not include the figures of the overall response).

SUMMARY OF THE RESPONSE

The floods in Malawi in 2015 led to displacement and widespread damage to housing in the affected areas. Displacement sites were set up in public buildings (such as schools) during the emergency phase, and assistance was provided primarily in these sites. After the first few months, the focus shifted towards relocation and supporting return to IDPs' places of origin, in order to enable collective centres to go back to their functions, and facilitate early recovery. According to data reported to the Shelter Cluster, emergency shelter support consisted mainly of distribution of tents and tarpaulins, while repairs assistance was primarily in the form of tool kits and/or materials, coupled with trainings.



1. 13 Jan 2015: **Declaration of Sate of Disaster by the Government of Malawi.**
2. 22 Jan 2015: **Shelter Cluster released Preliminary Response Plan.**
3. 2 Mar 2015: **Rapid joint assessment released by Shelter Cluster.**
4. End of 2015: **Deactivation of Malawi Shelter Cluster.**

CONTEXT AND BACKGROUND

80% of the population of Malawi live in rural areas. The economy is primarily agricultural, which accounts for 90% of export revenues. National GDP per capita is one of the lowest globally and the economy has experienced low growth. Malawi is also heavily reliant on investments from global finance institutions. A lack of trust in the Malawian Government by these institutions (since 2013) has led to a reduction in investments, further stagnating economic growth.

Malawi experienced above-average rainfall throughout December 2014 and January 2015. The Southern Region of Malawi received 400% more rainfall than the Long Term Mean for the region. 15 of the country's 28 districts experienced significant flooding, with a **state of emergency declared on 13 January 2015.** As a result of the prolonged, heavy, rainfall, the Shire River reached its highest level in 30 years, bursting it banks in multiple areas.

SITUATION AFTER THE FLOODS

The extreme rainfall event and resulting flooding led to displacement, with many affected households evacuated to collective centres (schools, churches and mosques). As these naturally (and in some cases enforcedly) disbanded after the first two months, affected households with no long-term shelter solution constructed simple emergency shelters, or stayed with host families.

Properties sustained damage through a combination of rain and high winds. The most affected communities were more

After several weeks of heavy rains, the Shire River reached the highest level in the past 30 years, burst its banks in several locations and caused widespread flooding.

vulnerable to the disaster, as a result of their shelter and settlement typologies. Many of the inhabitants of the flooded rural areas resided in one-storey houses, constructed using traditional techniques and materials, such as sun-baked mud-bricks and thatched roofs. The flooding, rainfall and wind caused homes to disintegrate and roofs to blow off. There appeared to be a correlation between the degree of damage sustained and the construction techniques used. As shown by the Rapid Joint Assessment (March 2015), 47% of houses built with fired bricks and CGI roofs reported damage, compared to 71% of those built with sun-baked bricks, and 78% of wood and mud houses.

EMERGENCY SHELTER PHASE

The Shelter Cluster, led by the Ministry of Lands, Housing and Development, was activated shortly after the emergency, and a Rapid Joint Damage Assessment was undertaken by various clusters[4].

The international organization co-leading the Cluster quickly established a large shelter pipeline, and the first significant shelter distributions took place in early February, with tents and shelter kits being airlifted to areas on the east bank of the Shire River that had been completely cut off by the floods.

During the emergency phase, the government promptly erected tents in the most critical displacement sites, in order to clear the public facilities, particularly schools. The sites were selected without sufficient planning and the tents set up hurriedly, leading to challenges such as overcrowding and gaps in WASH and Protection. Additionally, the distribution of humanitarian aid was reported to create a draw to these sites, partially driven by the underlying poverty and also by the food insecurity, created by flood damage to crops and livelihoods. A further challenge in the response was that initial assessments and distributions tended to neglect IDPs in host communities, which increased the draw to displacement sites and complicated coordination efforts.

[4] The Assessment is available at http://bit.ly/2jbPHqw

Displacement site at Bitilinyu. These collective centres were the initial option for those who had to leave their homes and caused a significant draw, due to the distributions of aid (and relative neglect of IDPs in host settings). These sites were also particularly overcrowded and had gaps in protection and hygiene.

The Shelter Cluster's **initial strategic objective was to relocate all people from collective centres** into planned camps or resettlement areas[5]. Expected outputs and impacts of the emergency response were:

- 31,636 households provided with tents and NFIs.
- Assessments conducted in all the 15 districts for strategic positioning of camp sites.
- Displaced people in the camp sites to be trained in construction, for dignity and Disaster Risk Reduction.
- Resettlement areas properly laid out.

EARLY RECOVERY PHASE

By early March, the government prioritized the closure of camps and the return of IDPs. This change in approach led to a swift re-focusing from emergency operations to early recovery planning within the humanitarian community. As part of these efforts, the Shelter Cluster led the process of preparing a "Durable Solutions Framework" and, where feasible, orientated its own efforts towards providing shelter support in areas of return. **Supporting the ability to return was essential to encourage livelihood recovery and to allow collective centres to return to their proper use.** The Cluster aimed to provide adequate shelter in the camps, whilst also strengthening the capacity of the displaced population for early recovery, through training on good construction methods and through the provision of construction materials.

The Cluster and the government promoted the use of fired bricks (as opposed to sun-dried bricks) for reconstruction, so that buildings would be more resistant to disintegration[6]. However, a lack of availability of wood to fire the bricks (or financial resources to purchase fired bricks) led to many households resorting to unsafe traditional building approaches. Some households received shelter **assistance from government and NGOs in the form of shelter kits** (tools and tarpaulins), **tents, or materials to construct temporary timber and plastic-sheet shelters.** In assessments conducted by humanitarian organizations, communities expressed a preference for basic materials and tools, to repair or construct core dwellings supplemented by local materials, including earth blocks and grass thatching. This was considered an appropriate and durable solution to their immediate and longer-term shelter needs, which would also allow them to focus on their priorities, i.e. food security and livelihood recovery.

The case studies that follow show two approaches taken by humanitarian organizations. While the first (A.20) was a short-term project focused on the emergency relief and early recovery phase, the second (A.21) was a longer-term recovery programme looking at housing reconstruction, with significant training and Disaster Risk Reduction components.

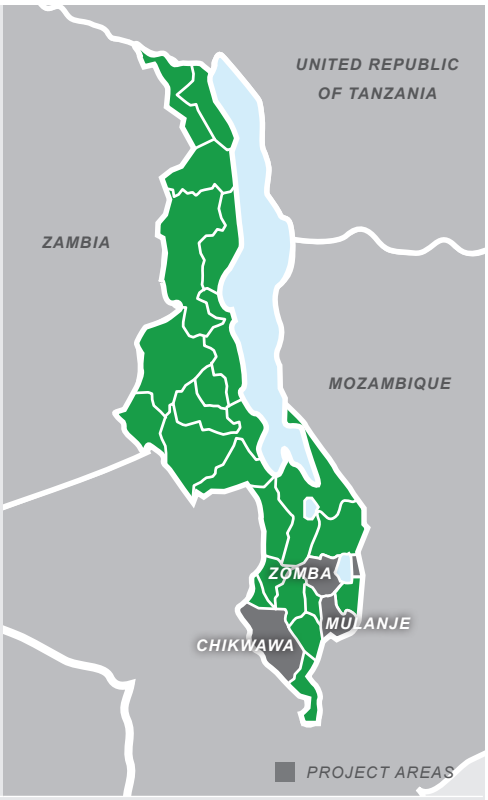
[5] Preliminary Response Plan, released on 22 January 2015 (http://bit.ly/2i0oiKI).
[6] Key Shelter Safety Messages - 2015 Malawi Floods and Storms.

CASE STUDY

MALAWI 2015 / FLOODS

KEYWORDS: Emergency shelter, NFI distribution, Early recovery, GBV risk mitigation

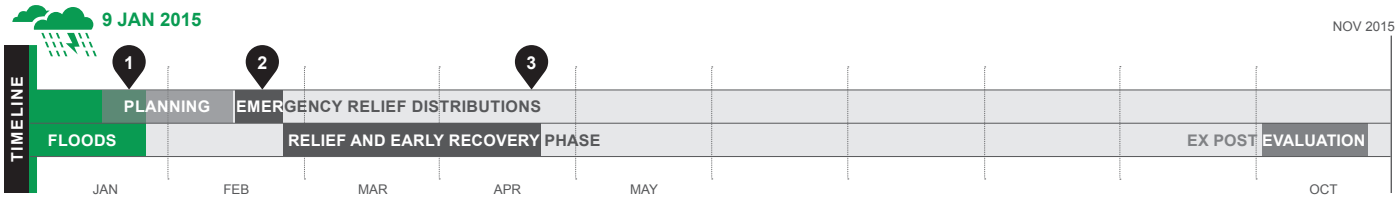
CRISIS	**Malawi Floods, January 2015**
TOTAL HOUSES DAMAGED	**523,347 houses** (Source: Gov. of Malawi).
TOTAL PEOPLE DISPLACED	**230,000** in displacement sites **106,000** displaced in host sites (UNDAC assessment report, 6 February 2015).
PROJECT LOCATIONS	**Chikwawa, Zomba, Mulanje.**
BENEFICIARIES	**1,874** households.
PROJECT OUTPUTS	**1,224 tents with household NFI kits** **650 shelter kits** **500 tarpaulins** **960 solar powered lamps** **20 packs of classroom materials**
OUTCOME INDICATORS	**100%** of shelters distributed were verified as received. **67%** of respondents living at their (or a new) home site at the time of ex post evaluation (Oct 2015), compared to 4% at time of distribution.



SHELTER SIZE	**1 Tent = 18.5m²**	SHELTER DENSITY	**3.6 m²** per person (based on national average household size of 5.1).
MATERIALS COST	**USD 313** per household.	PROJECT COST	**USD 550** per household.

PROJECT SUMMARY

This project had a relief-oriented and a recovery-oriented outcome objective. Through the provision of tents and shelter-related NFIs, it aimed to meet immediate shelter needs and enabled affected households to move out of gender-segregated collective centres, supporting return and easing overcrowding. In order to support early recovery, tarpaulins and fixing kits were distributed to build or repair shelters, coupled with basic training and tools to assist with reconstruction or earning a livelihood.



1 22 Jan 2015: **Shelter Cluster released Preliminary Response Plan.**

2 22 Feb 2015: **Distributions of tents completed.**

3 23 Apr 2015: **Distributions of tents to new caseload with totally destroyed home completed. Distributions of shelter kits and tarpaulins to households with partially destroyed homes completed.**

STRENGTHS

+ Reduced issues and risks related to overcrowding in collective centres.
+ Facilitated the return to areas of origin / own plots.
+ Responded at scale with different modalities.
+ Supported early recovery.

WEAKNESSES

- The recovery capacity of affected households was not properly understood.
- Lack of appropriate technical training to some recipients of the kits.
- Tarpaulins distributions did not include fixing kits.
- Detailed Post-Distribution Monitoring was not undertaken after the relief distribution.

Tents were used to clear the overcrowded collective centres during the emergency relief phase. By doing so, this project managed to address some of the issues faced by the displaced people in those sites, including family reunification and reduction of hygiene and protection concerns.

CONTEXT

For more background information, see overview A.19.

Extreme rainfall in Malawi during January 2015 caused widespread displacement, forcing households to seek immediate shelter in collective centres. In rural areas, the flooding also led to the destruction of harvests and damage to water sources, further exacerbating food-security issues. This created an additional draw to collective centres. Displacement sites became crowded, with a lack of basic services, such as water, sanitation and hygiene, prompting concerns about the outbreak of diseases. The shelter sector was urged to respond in a way that provided immediate lifesaving shelter (alongside appropriate services) and increased the affected community's capacity for early recovery.

RELIEF PHASE

During the initial phase of this intervention, **the organization responded to the immediate shelter needs at collective centres.** Due to severe overcrowding, there were concerns about Gender-Based Violence (GBV) and child protection issues, as well as health issues resulting from a lack of basic services. People were living in gender- and age-segregated rooms, and in some instances men were required to sleep outside. Tents and NFI kits, all imported over several rounds, were distributed to households verified as having a totally destroyed home.

The organization aimed to **support households as part of a return scheme,** motivated by the government's desire to decongest overcrowded collective centres. For those households who did not want to return to their previous site due to flood risks, the team worked with the local Traditional Authority, the District Government and beneficiaries to identify safer areas of land. **In some cases,** most notably in the district of Zomba, **water inundation prevented households from returning home.** In such situations, tents were distributed and implemented in spaces surrounding the collective centres. Due to land restrictions, the number of tents that could be distributed was limited, when compared to the caseload at the centres. In such cases, the organization identified beneficiary families based on agreed vulnerability criteria. As the levels of rainfall dropped and waters receded, distribution teams worked with beneficiary households so that tents could be relocated and families could return to their home sites.

Some structures sustained significant damage due to the floods.

EARLY RECOVERY PHASE

After the initial emergency phase, **the project shifted emphasis towards supporting early recovery.** In Zomba and Mulanje, shelter kits or tarpaulins were distributed to households with a partially destroyed home. Beneficiary households were able to use tarpaulins and fixing kits to repair and weatherproof shelters, until access to resources allowed them to seek a more durable solution. As part of the distribution, a basic level of training was provided on how to use the items to improve structures. Repairs included fixing damaged external walls and replacing roofs that had blown off.

In Mulanje, during the later stages, households with totally destroyed homes, that were still in collective centres or with host families, were also provided with a shelter kit. In such instances, households received lumber and made basic shelters on their home site. During the ex post evaluation, all interviewed families had completed – or were in the process of improving – their structures. Many of these households also reported they wished to reuse the tarpaulins as roof of the new shelter.

LOCATIONS AND BENEFICIARY SELECTION

The organization focused its efforts in more remote regions and rural communities, where fewer humanitarian actors were operating and gaps in the response were soon identified. Communities were selected in coordination with the government-led Cluster. The district government identified the worst-affected communities that had not yet been reached by other actors,

By pitching the tent on their home site, people were able to start to rebuild their damaged houses. Supporting return was essential for enabling early recovery.

Tarpaulins from the shelter kits were used, amongst other purposes, to seal off damaged parts of the houses.

making assessments available to field teams. Assessment and distribution teams would then work with a local representative for the community, often a camp coordinator. The camp committees, appointed by the district government, would generate a beneficiary list based on agreed criteria: totally or partially destroyed home and, in some situations, additional vulnerabilities. The organization's assessment team cross-referenced the lists with data compiled by the regional government and also undertook key informant interviews, to verify that the criteria had been applied appropriately and to mitigate selection bias.

PROJECT IMPLEMENTATION TEAM

This project was managed a by a full-time project manager based in Blantyre, with coordination and strategic responsibilities. This role was filled by a series of overseas staff posted for around four weeks at a time. Two sub-teams (each comprising four staff and volunteers from the organization's roster) were located in the target districts, to manage the implementation and coordinate with the district government and other actors operating in the same region. Overall, 40 overseas staff and volunteers were involved in the response. At the field level, teams used a high number of local staff and volunteers to assist with the implementation. Some of these were drawn from other organizations, while others were recruited directly from the affected communities, and worked as translators and enumerators, assisted with distributions, training and tent erection. In some instances, agreements were formalized through the creation of MoUs with the appropriate organization. However, in situations where this did not happen, the lack of signed documentation caused issues during the implementation. For instance, newly posted staff or volunteers were not always clear on the agreed per-diem rates for distribution teams. Consequently, the organization became stricter in the formalization of working relationships.

ENGAGEMENT OF AFFECTED PEOPLE

Distribution teams from the local community were trained in the erection of tents and were tasked with assisting beneficiary households. These teams also assisted with the relocation of tents from collective centres to households' home sites. Although the organization coordinated well with the camp committees, more efforts should have been made to work more closely with the wider affected communities, particularly in terms of communication and sensitization with non-beneficiary groups. Several cases were uncovered, during the ex post evaluation, where community members had not fully understood the organization's goals and mission. In these instances, families who did not receive assistance did not understand the selection criteria, and felt that targeting was political in nature.

MAIN CHALLENGES

The distribution of humanitarian aid created a **significant pull factor towards collective centres. Identifying the beneficiaries who genuinely required shelter** assistance – from those who were trying to access other items – proved problematic. Flooding in Malawi had washed away crops, exacerbating underlying conditions of poverty, and since food and other items were being distributed at collective centres, it was felt that some households had registered in order to qualify for food aid.

This exacerbated **problems associated with severe overcrowding**. Sanitation was insufficient, families were forced to split, and there were incidences of skin and other communicable diseases. The urgency of lifesaving assistance was stressed in the preliminary response plan, along with the decision to encourage return by supporting families at their home sites, which helped to reduce the draw to collective centres.

Due to underlying resource deficiency and also the scale of the crisis, there was **a lack of access to sufficient lumber** in the emergency phase, for shelter kits to be easily deployed to a large percentage of the affected population. **The deployment of tents enabled rapid distribution,** allowing the immediate easing of collective centres. Households could erect them on their land quickly. Where water inundation prevented return to home, tents could be erected temporarily on land adjacent to the collective centres. As the ground began to dry out, tents were moved to beneficiaries' home sites.

A significant number of families who did not qualify for tents (according to the beneficiary criteria) had a severely damaged house, therefore being exposed to rainfall and high daytime temperatures. These households remained without adequate shelter, as many did not have the resources to make simple improvements and repairs in a timely fashion. This influenced the decision to distribute shelter kits alongside basic training in the second phase, and helped to reduce the issues of inequity felt by those who had not received any assistance.

WIDER IMPACTS OF THE PROJECT

A government representative commented that by promoting return to home – and distributing at people's home sites or assisting with relocation – **this project allowed to clear a number of the collective centres and their timely return to their normal uses.** This had a positive impact on the wider relief effort, beyond the shelter sector, and supported the early recovery of communities following the flood events.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

STRENGTHS

+ The project provided a mechanism for rapidly reducing the problems associated with overcrowding at collective centres, with the distribution of tents and selected NFIs. It did so by 1) **Reducing exposure** to vector and water transmitted diseases; 2) Improving **privacy**; 3) In many cases **facilitating the return home** and therefore reinstating livelihoods and supporting early recovery; 4) **Mitigating risks** associated with GBV and child protection, as well as enabling the **reformation of the family unit**, with parents better able to watch over minors. Qualitatively, beneficiaries reported this to be an important outcome of the intervention, as certain aspects of normal household behaviours could commence.

+ The organization was able to **reach a greater number of households** and **reduced the potential for inequity** resulting from the distribution of tents alone, thanks to the distribution of shelter kits or tarpaulins for those with a partially damaged house. This also yielded **further positive outcomes in terms of supporting early recovery**.

WEAKNESSES

- Vulnerability assessments did not inform an understanding of the self-recovery capacity. Early elements of the response were focused almost solely on immediate relief, and failed to consider the longer-term recovery needs of the affected population. Whilst some beneficiaries were able to use the provision of emergency shelter as a platform for recovery, others were unable to transition towards a more durable shelter within the life cycle of the tent. As tents cannot be easily adapted, this raised concerns that some beneficiaries would become exposed to shelter-related issues at a later date.

- Adequate technical training on the use of the shelter kit was not always provided to beneficiaries. This was due, in part, to the general lack of understanding (by implementing teams) of techniques associated with the shelter kit. Following the completion of this project, shelter kit trainings were rolled out across the organization's network of staff and volunteers.

- Tarpaulins were not distributed with a fixing kit, except when part of the standardized shelter kits. Although there were many cases were beneficiaries were still able to use these items to good effect, in some instances tarpaulins were used for non-shelter purposes – such as drying food. This issue may have arisen because beneficiaries did not receive the fixings required to utilize tarpaulins as intended, or due to a lack of training.

- The early emergency phase **did not include detailed post-distribution monitoring.** This further affected the organization's understanding of the barriers to early recovery.

MATERIALS LIST

Materials	Quantity (per HH)	Total Quantity	Unit Cost (USD)
Family Tent	1	1,224	276.9
Shelter kit (IFRC specification)	1	650	51.5
Tarpaulin (IFRC specification)	1	500	11.8
Household water filtration	1	500	32.3
Solar light	2	3,408	9.5
Blanket	5	6,120	7.3
Kitchen set	1	1,224	23.2
Mosquito nets	2	2,448	4.4
Jerry can (10l)	2	2,448	3.5
Tool kit	1	1,224	14.1

LEARNINGS

- **Limited availability of food, inflated prices and a reduction in livelihood activities had a significant impact on the early recovery capacity of affected households**. If access to food and livelihoods is a known issue, this should be recognized and included in assessments. In this response, evidence suggested that many households were drawn to collective centres as a result of damage to crops, thus the linkages between shelter need and food poverty could be assumed from the outset.
- **Vulnerability and capacity assessments should include pre-disaster secondary data,** as well as post-disaster secondary and primary data, and this should be factored into any resulting project design. Providing a household with emergency shelter and NFIs can often provide the appropriate platform to begin the process of self-recovery. However, there are contexts when the pre-disaster conditions significantly inhibit the ability of the affected communities to engage in self-recovery. **Early, vulnerability-driven, emergency shelter, distributions need to be followed by further capacity assessments** and, if appropriate, an additional **recovery-oriented component[1].** Although this intervention provided immediate support for those at greatest risk as a result of the displacement, **there should have been more recognition of the impact of vulnerabilities** on the capacity of households to recover.
- **Detailed post-distribution monitoring should be undertaken to recognize specific vulnerabilities early on,** and enable the organization to provide an additional level of assistance, or link the most vulnerable beneficiaries with other shelter actors. Although some informal checks were undertaken in the days following distributions, these were carried out with the aim to identify any immediate gaps in provision, or to address aid-related issues. However, the evidence gathered during an ex post evaluation showed that, due to underlying conditions of poverty, **many households lacked the material, financial or physical resources to transition** towards a more durable form of shelter.
- Shelter kit interventions that do not include the **appropriate level of technical training** have a significantly lower chance of yielding positive shelter related outcomes (both short- and long-term).

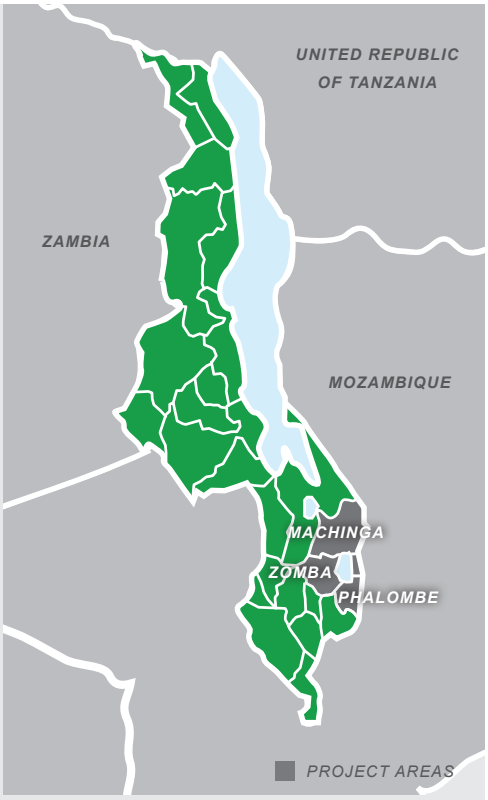
[1] This approach was taken in project A.40 in response to the Ecuador earthquake.

CASE STUDY

MALAWI 2015-2016 / FLOODS

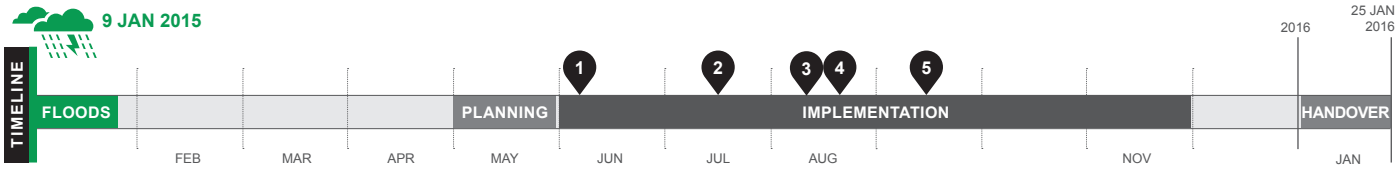
KEYWORDS: Core housing, Housing repairs, NFI distribution, Training, Guidelines, Disaster Risk Reduction

CRISIS	**Malawi Floods, January 2015**
TOTAL HOUSES DAMAGED	**523,347 houses** (Source: Gov. of Malawi).
TOTAL PEOPLE AFFECTED	**1,101,364 people** (Source: Gov. of Malawi).
TOTAL PEOPLE DISPLACED	**336,000 people** (UNDAC assessment report).
PROJECT LOCATIONS	**Zomba, Phalombe and Machinga districts.**
BENEFICIARIES	**1,090** households.
PROJECT OUTPUTS	**1,090 houses** benefited from emergency repair and reconstruction activities. **9 model homes** built in different communities, to be replicated. **109 cash-for-work grants** provided to vulnerable households (10%). **Training** provided to local builders and staff (including 66 building supervisors, and three Trainings of Trainers with 30 builders and 8 programme support staff). **Development of a training curriculum** for builders.
SHELTER SIZE	**22m²** and **16.5m²** (Size of house dependent on family size, assumed at 3.5m² per person).
SHELTER DENSITY	**3.5m²** per person.
MATERIALS COST	**USD 200** per household.
PROJECT COST	**USD 552** (inclusive of training and dissemination).
OUTCOME INDICATORS	The majority of affected households returned to the site of their original dwellings, where possible.



PROJECT SUMMARY

The programme aimed to assist flood-affected people to return to their homes, through the repair and reconstruction of houses. This was done through the supply of tools, materials and technical training. It also included training and information sharing to the community on more durable and resilient housing-construction methods.



1. Jun 2015: **Initial discussions with community**
2. Jul 2015: **Beneficiary selection, shelter workshops with local builders, development of shelter designs and training curriculum**
3. Aug 2015: **Training roll-out**
4. Aug 2015: **Distribution of tools and materials**
5. Sep 2015 onwards: **Continued technical support for reconstruction**

STRENGTHS

+ Increased technical skills of local communities in the construction of durable houses.
+ The programme provided an affordable housing solution.
+ Resources were used directly for housing recovery, accelerating the overall process of recovery.
+ Model houses provided a reference for locals to replicate.
+ The programme recognized traditional skills and knowledge.
+ Capacity-building of local partners.

WEAKNESSES

- The project did not cater for all income levels.
- Lack of organizational experience in shelter projects.
- Poor planning led to delays in beneficiary selection.
- Lack of adequate market assessment led to procurement challenges.

People were given technical trainings and built model houses as part of the project. Here they are working on setting out the foundations of a model house..

CONTEXT

See overview A.19 for background information.

LOCATIONS AND BENEFICIARY SELECTION

The organization selected the three target districts due to the high level of damage and the continued flood risk. Additionally, the local partner had a strong presence in these districts and good relations with the communities.

Priority was given to areas at greatest risk of future flooding (confirmed by flood risk data), where most houses were damaged or destroyed, and that had substantial loss of crops and livelihood and fewest alternative income opportunities.

Household selection was carried out in partnership with the government District Offices and Traditional Authorities and further verified by household visits. Priority was given to the most vulnerable households, based on criteria including: single- and child-headed households, elderly, disabled, households affected by HIV and low-income families with children under 5 years.

The project aimed to advance gender equality and female empowerment against cultural discriminatory norms, involving women in masonry and building workshops.

PROJECT IMPLEMENTATION

Overall, the project was implemented with 52 staff members and builders from a local partner which undertook work at the community level, while the organization provided a total of seven national and international staff for logistical support, coordination and overall supervision.

An initial shelter and housing assessment was undertaken, highlighting that a number of proposed house designs were not affordable and, if adopted, would only support a limited number of families. Given the prevalence of flooding and the need to maximize the scale of the project with the available funds, the organization aimed at supporting families to reconstruct their permanent dwellings, using low-cost, locally available materials, supplemented with in-kind assistance. **Technical training and support were also provided** to identify and build upon existing best local building practices, and to share this information with the whole community. In order to do so, a series of workshops were held at central locations in the target communities. Two builders from each community in the area joined the workshop along with women and local government staff. The workshop included theory, discussion, site visits and practical exercises, to identify best construction practices. At the end of each day, the learning was recorded and used to develop a training curriculum for other builders and to share this with their whole community. During the week, a complete core house was constructed, along with the provision of a curriculum and supporting communication materials.

Workshops were held in target communities to identify best practices and develop contextualized training for the community.

The builders were then engaged to construct houses for the most vulnerable families in each of their communities, which also provided a further training opportunity and model for demonstration. Partner field staff and the builders also provided technical support to families during the construction.

COMMUNITY PARTICIPATION

In order to build upon existing knowledge and practice, the organization worked in partnership with communities and local builders, who were engaged from the outset in helping to refine the affordability of the programme and then share their local knowledge on construction practices and building materials.

Throughout the programme, the organization maintained this collaboration through local and traditional authorities, focus groups, workshops and household-level support.

COORDINATION

The project worked closely with the Shelter Cluster to agree on the areas where the organization and its partners could work, and to ensure that the approach was in line with Cluster procedures. The Cluster Coordinator attended training sessions and assisted in parts of the training programme. All the materials developed during the programme were shared with the Cluster. District government and traditional authorities were involved in identifying the communities, and communication was carried out through them. The communities were then actively involved in deciding the approach for the project.

Model homes were built, according to traditional designs. Additionally, materials were provided and cash-for-work grants for the 10% most vulnerable households.

Trainings included the identification of good soils and mixing for block making.

MATERIALS

All materials were purchased from within Malawi, largely through local markets. Timber supplies came from other districts where trees were available for construction use, so as not to damage the local environment.

Materials such as burnt bricks, cement and corrugated iron sheet roofing were beyond the financial means of the poorest households. Therefore, for wider impact, assistance had to be focused on building solutions using local materials that were affordable, replicable and achievable by the most vulnerable and at-risk households.

While earth for brick-making and grass for thatching were locally available, other materials and tools had to be purchased. Communities were offered restricted cash to purchase materials that were not freely available, but there was an overwhelming request for in-kind support due to the distances to markets, the capacity of markets, the cost of transport and the needs of families to focus on agricultural activities.

HOUSING DESIGN AND TECHNIQUES

Many houses had survived with little or no damage, even after weeks of standing water, including those constructed using earth brick and render. This is because these traditional houses had raised platforms that protected the core structure from erosion, and the veranda and large roof overhangs ensured that the gables and walls were protected. This design, developed over centuries, provided protection from the elements and, other than some minor repairs to the veranda and walls, allowed many families to return to their homes once the floods had subsided.

Many of the traditional houses withstood the floods, as they were built with contextually appropriate features, such as roof overhangs and raised platforms.

The project provided technical solutions, including refinements to traditional house design, so that the roof could continue to be supported by the veranda posts, should the earth walls collapse. During the workshops, emphasis was given to soil selection for making adobe bricks and the correct brick-making processes. The reason why many buildings collapsed was due to the insufficient thickness of the walls, therefore the improved design increased this width (from 10 to 15cm) so that the walls were more stable. It also ensured that internal walls had proper foundations and were connected to the outside walls, to further strengthen the structure.

DISASTER RISK REDUCTION

The communities were prone to heavy rains, high winds and flooding. Therefore, Disaster Risk Reduction was very strongly embedded throughout the programme. Community safer-building information was disseminated to educate, inform and provide examples. Other strategies were also encouraged, including planting trees to protect against driving high winds and rain. Trees could also be used as building materials or for firewood. Information was provided on Safer Earth Building for Floods and Rains, as a simple booklet and training curriculum for builders. This included information on hazards, appropriate site selection and construction techniques to reduce flooding in houses, as well as appropriate protection and maintenance of houses and the environment.

MAIN CHALLENGES

The organization needed to convince government personnel, politicians and other organizations that houses constructed from local materials could provide a sufficiently durable solution. This challenge was overcome mainly by building model houses that demonstrated this potential.

Additionally, extra technical support was brought in during the implementation process, to strengthen the local partner's capacity.

WIDER IMPACTS OF THE PROJECT

The programme explored and **built upon existing local knowledge and practices,** which enhanced the ownership and commitment of the residents and ensured that any recommendations were site-appropriate. The resources and information produced were shared with the Shelter Cluster, so that other actors could use them. Ultimately, **this approach provided a practical, inexpensive and replicable model** to respond to similar flood events, in this and other parts of the country.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

STRENGTHS

+ Increased technical skills of local builders in construction of durable houses, thanks to workshops conducted at the community level.

+ The programme allowed for a more durable emergency response, using an affordable solution that would help withstand future flood risks, yet was accessible by the poorest and most vulnerable households.

+ Resources were used directly to support housing reconstruction, accelerating the overall recovery process, instead of providing emergency or transitional support first.

+ Model houses provided a reference for locals to replicate. Communities have started building houses using the safer building guiding principles based on the model houses, which therefore had a wider impact by providing a reference for other members of the community.

+ The programme recognized traditional skills and knowledge as an affordable and effective means of coping with heavy rains and floods, managing to convince locals that these traditional methods were a good alternative to more expensive materials, such as burnt bricks or concrete blocks.

+ Increased capacity of the local partner.

WEAKNESSES

- The programme did not cater for all income levels, as it only provided a low-cost solution and did not consider those who could have afforded more durable housing.

- Lack of experience in shelter projects of the organization's country programme and local partners meant that this had to be developed during implementation.

- Delays in beneficiary selection and verification process caused by poor planning slowed down the implementation.

- Lack of adequate market assessment. There were some logistical challenges in finding doors and windows, as no large supplier could be found.

Local materials were provided, as listed in the BoQ below.

LEARNINGS

- **Visible sections of the programme distract from wider goals.** The hard components of the programme, such as the distribution of materials and the construction of model houses, have the potential to dominate the programme and divert from the wider objective of supporting the whole community (by encouraging safer building practices and supplying relevant information).
- **Importance of strengthening the organization's capacity in varying sectors.** The organization's preparedness needed to be reviewed to better respond to future disasters, particularly with regards to technical support, number of staff, as well as in conducting beneficiary surveys to be used during the identification and selection processes.
- **Multisectoral programming, beyond shelter.** The programme should have also covered aspects such as restarting livelihoods and food security, to address family needs of those who were keen to return home earlier than others.

MATERIALS LIST PER MODEL HOUSE

Ref	Details	Unit	Quantity	Unit cost (MK)	Unit cost (USD)	Total cost (USD)
1	RIDGE POLES	Pcs	6	1,000	2.30	13.79
2	RAFTER POLES	Pcs	30	800	1.84	55.17
3	WALL POST POLES	Pcs	10	500	1.15	11.49
4	BATTENS	Pcs	80	200	0.46	36.78
5	BLACK PLASTIC PAPER	Part Roll	1	6,000	13.79	13.79
6	TIE WIRE	Roll	1	2,000	4.60	4.60
7	3" NAILS	Kg	2	1,000	2.30	4.60
8	TIMBER FOR DOOR (Inc fittings)	Pcs	1	6,000	13.79	13.79
9	TIMBER FOR WINDOWS (Inc fittings)	Pcs	2	2,000	4.60	9.20
10	EARTH BRICKS	Pcs	2,400	3	0.01	16.55
11	THATCH	Pcs	1	9,000	20.69	20.69