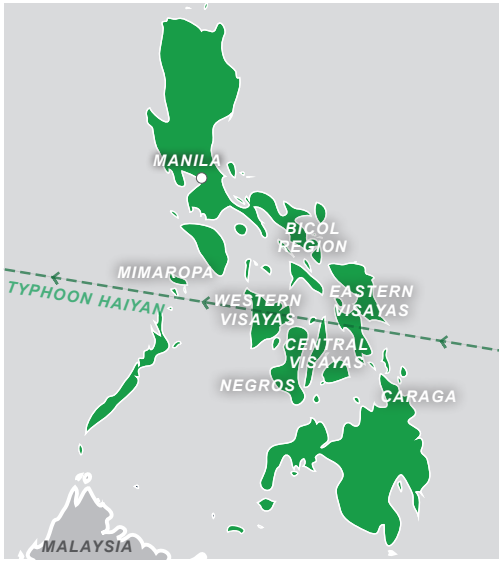
OVERVIEW

PHILIPPINES 2013 / TYPHOON HAIYAN

CRISIS	**Typhoon Haiyan (Yolanda), 8 November 2013.**
TOTAL HOUSES DAMAGED[1]	**1,012,790 houses (518,878 partially damaged and 493,912 totally destroyed).**
TOTAL PEOPLE AFFECTED[2]	**3,424,593 households** (16,078,181 persons).
RESPONSE OUTPUTS[3] National Housing Authority (NHA)	**29,661** houses as of October 2016 (206,488 planned).
Department of Social Welfare and Development (DSWD)	**966,341** cash transfers and material vouchers distributed.
Humanitarian organizations	**551,993** households assisted with emergency shelter. **497,479** NFI packages distributed. **344,853** households assisted with incremental solutions.

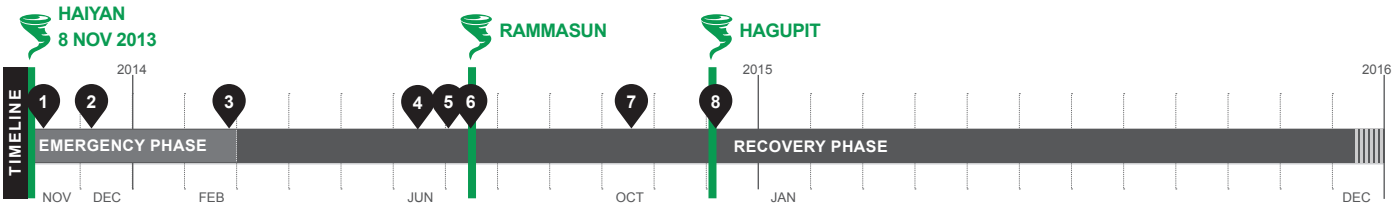
[1] Philippines Shelter Cluster, late 2014, Analysis of Shelter Recovery, http://bit.ly/2kZgHvA.
[2] National Disaster Risk Reduction and Management Council (NDRRMC), Update 17 April 2014, http://bit.ly/1B6MMl1.
[3] Sources for these figures are the documents used as references throughout this overview.



Map highlighting the path of typhoon Haiyan and the most affected regions, including: Eastern Visayas: Biliran, Leyte, Southern Leyte, Samar, Northern Samar, Eastern Samar. Central Visayas: Cebu, Bohol. Negros: Negros Occidental, Negros Oriental. Western Visayas: Aklan, Capiz, Iloilo, Antique, Guimaras. Mimaropa: Palawan, Occidental Mindoro, Oriental Mindoro, Romblon. Bicol Region: Masbate, Sorsogon. Caraga: Dinagar Islands, Surigao del Norte, Camiguin.

SUMMARY OF THE RESPONSE

Super Typhoon Haiyan (Yolanda) made landfall on 8 November 2013 and was one of the largest typhoons ever recorded. While the main government response consisted of subsidies for housing reconstruction or repair, humanitarian agencies used a range of approaches which included cash- or voucher-based interventions, but also training and construction of transitional, core or permanent shelters. Particular issues in this response included the lack of support for secure tenure, the lifespan of transitional shelter solutions and the poor quality control, particularly in regards to coco-lumber.

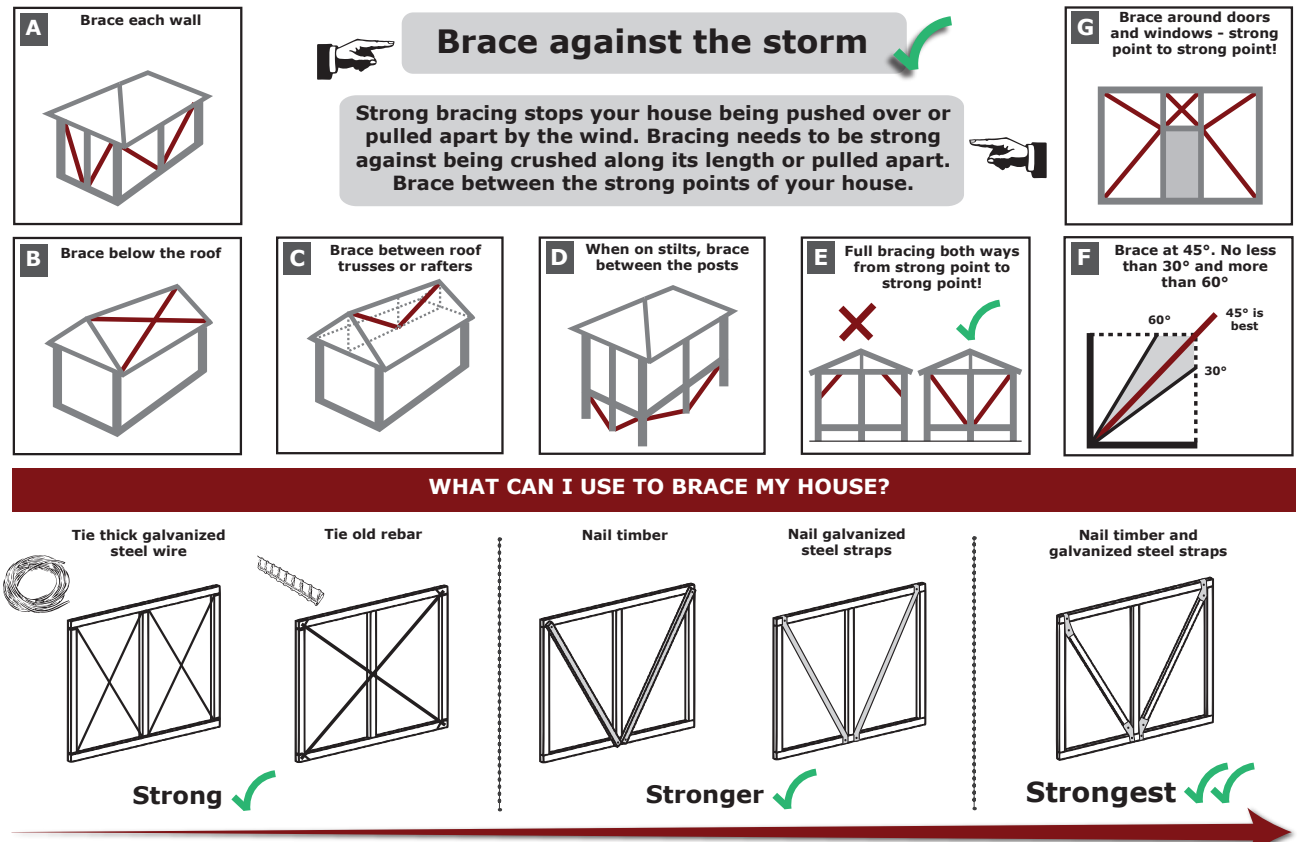


1. 11 Nov 2013: **State of Calamity is declared by the Government of the Philippines. Shelter Cluster is activated.**
2. 6 Dec 2013: **Office of the Presidential Assistant for Rehabilitation and Recovery (OPARR) is established.**
3. Feb 2014: **Emergency shelter assistance reaches 500,000 households.**
4. Jun 2014: **Recovery Shelter Guidelines are distributed by the Shelter Cluster.**
5. 4 Jul 2014: **The government declares the humanitarian phase over and coordination is officially transferred to OPARR clusters.**
6. 15 Jul 2014: **Typhoon Rammasun (Glenda) hits the Eastern Visayas.**
7. Oct 2014: **Shelter Cluster is de-activated with nearly 350,000 households receiving incremental shelter assistance from humanitarian organizations.**
8. 3 Dec 2014: **Typhoon Hagupit (Ruby) hits the Visayas.**

For projects in response to Typhoon Haiyan, see:

In Shelter Projects 2013-2014:
A.24, on shelter kits and WASH.
A.25, on cash and vouchers for materials, plus training.

In this edition:
A.9, a multiphase shelter and WASH programme.
A.10, on core shelters with latrines.
A.11, on a large scale programme on recovery shelter kits with reused coco-lumber.
A.12, on emergency and recovery shelter kits within a larger community-driven programme.
A.13, on a multisectoral, community-led resilience programme using shelter as an entry point.



Poster of one of the 8 Key Messages developed for the Haiyan response (Source: Philippines Shelter Cluster and DSWD).

INTRODUCTION

Overview A.23 in *Shelter Projects 2013-2014* should be referred to for information on pre-disaster conditions, the effects of the typhoon, and emergency and early recovery shelter interventions. This edition of *Shelter Projects* includes projects undertaken in response to Typhoon Haiyan, though the majority were completed or were due to be completed shortly, and describe recovery or multiphase shelter interventions.

RECOVERY INTERVENTIONS

In consultation with shelter partners, the Shelter Cluster began work in early 2014 to categorize shelter interventions being implemented by organizations and provide guidance on best practices. The subsequent Recovery Shelter Guidelines[4] were widely distributed by the Cluster beginning in June 2014 and included guidance on supporting households using a range of shelter approaches, from temporary to permanent solutions. There was a particular focus on the inclusion of build back safer outreach and training.

Many humanitarian agencies focused on the following:

- **Repair and retrofit** for damaged but not destroyed houses or retrofit for houses built post-disaster but that did not incorporate build back safer measures.
- **Permanent houses** that include at least one bedroom, one living space, and dedicated WASH and cooking areas.
- **Core shelters** that provide households with the core of their future house; one safe room or the frame of a permanent house.
- **Temporary or transitional shelter**.
- **Training** of carpenters and other skilled construction workers.
- **Build Back Safer awareness** workshops.
- Provision of **technical assistance.**

[4] Philippines Shelter Cluster (PSC), 06 Nov 2014, http://bit.ly/2lAG9ux.

The 8 build back safer key messages[5], a comprehensive set of shelter technical guidelines, was used extensively throughout the recovery phase. This Disaster Risk Reduction Information Education and Communication (IEC) material represented one of the most important outputs for other responses (including in Nepal and Ecuador[6]), and has so far been reused in a number of other responses in the Philippines and the broader Asia-Pacific region[7].

[5] PSC, 8 Build Back Safer Key Messages, http://bit.ly/2lANU3F.
[6] See A.3 and A.39, overviews of the Nepal and Ecuador earthquakes responses respectively.
[7] See A.14 and A.15, overviews of the responses to Cyclone Pam in Vanuatu and Cyclone Winston in Fiji.

Many people rapidly started to build shelters after Typhoon Haiyan (here in Tacloban, December 2013).

Multiple programme options were encouraged in response to Typhoon Haiyan, one of them being the construction of transitional or core shelters.

CLUSTER TARGETS AND RESPONSE

From the onset of the response, the Cluster strategy was to provide 1) emergency shelter assistance, 2) support for shelter self-recovery, 3) transitional/core shelters, and 4) support to families living in collective centres.

In its strategic framework for transition[8], the Cluster committed to provide:

- "Immediate life-saving **emergency shelter** in the form of tarpaulins/plastic sheets (and fixings) and tents with supporting NFI solutions" to 300,000 households; and
- "Support for household **self-recovery** through incremental housing solutions using consultative, participatory processes" to 500,000 households.

The target for emergency shelter was met – even exceeded – within the first 100 days of the response, with an estimated 500,000 households receiving emergency shelter assistance and 470,000 households receiving NFI packages. As of August 2014, cluster partners expected to support 344,853 households with repair/retrofit and new construction shelter assistance[9], reaching only 70% of the initial target of incremental housing solutions. While there is limited data on the final number of households assisted by humanitarian organizations after the deactivation of the Cluster at the end of 2014, documentation from organizations suggest that final projections were met within the first three years of recovery.

GOVERNMENT RESPONSE

Government assistance under the "Emergency Shelter Assistance" (ESA) programme consisted of PHP 30,000 (or approx. USD 600) for totally damaged houses and PHP 10,000 (or approx. USD 200) for partially damaged houses. As of August 2016, disbursement to 966,341 households had been undertaken[10] and was still ongoing. Although disbursement of the government funds did not start until late 2014[11], more than a year after Typhoon Haiyan made landfall, this was still earlier than many recovery shelter programmes commenced and there were reports of beneficiaries withdrawing from agency programmes so that they remained eligible for the ESA funds.

[8] PSC, 03 March 2014, Strategic Operational Framework for Transition Post-Yolanda, http://bit.ly/2l6JFfy.
[9] PSC, late 2014, Analysis of Shelter Recovery.
[10] DSWD, 04 Nov 2016, Where did the Emergency Shelter Assistance (ESA) funds for "Yolanda" survivors go?, http://bit.ly/2lAPS3T.
[11] DSWD, 24 November 2014, Guidelines for the Implementation of the Emergency Shelter Assistance (ESA) Project [...], Memorandum Circular 24.

In some projects, materials were treated to improve the durability of the shelters.

SITUATION IN 2016

The National Housing Authority (NHA) and Social Housing Finance Corporation (SHFC) continued to undertake significant resettlement construction projects in the regions affected by Haiyan. NHA alone had plans to construct 205,128 houses on relocation sites, however as of November 2016 only 29,661 of these were completed[12]. Construction was slowed down due to regulatory issues, longer-than-expected planning, and difficulty acquiring land. Further, the lack of access to services, such as electricity and water, hindered households' transition to newly completed housing units.

The Philippines continues to suffer significant typhoon damage, although no typhoons have occurred which have caused damage to the scale of Typhoon Haiyan in recent years. Since the Haiyan response, the government of the Philippines has been wary to call for international assistance, fearing that there would be a large influx of international agencies. This has hampered responses to small typhoons since then. At the close of 2016, there was a low likelihood of international assistance being called for, even in significant disasters, and this will severely hamper agencies' ability to respond to disasters. Nevertheless, there were signs that the government has streamlined its ability to more rapidly deliver Emergency Shelter Assistance cash support.

[12] National Economic and Development Authority, 2016, "Yolanda Updates October 2016", http://bit.ly/2knL7pm.

LESSONS LEARNED FROM THE HAIYAN RESPONSE

SUPPORTING SELF-RECOVERY

In comparison to other disasters, **recovery following Haiyan progressed rapidly** and many households started to take initial steps toward self-recovery within days. A number of organizations used **cash transfers, shelter repair kits, and technical training to address this rapid pace of recovery,** however many others remained focused on the delivery of products (e.g. transitional or core shelters). The use of cash for work and cash transfer schemes were particularly effective in supporting the rapid pace of reconstruction being pushed by households. These cash-based approaches injected funds into local economies that stimulated recovery, supporting early livelihood restoration. These programmatic efforts highlighted the ability of shelter partners to support the evolving response landscape, as their effectiveness relied on shifting from reactive response to anticipating needs.

HOUSING, LAND AND PROPERTY ISSUES

Despite these successes, there was largely a **missed opportunity for organizations to support Housing, Land, and Property (HLP) rights.** Extensive guidelines on HLP were developed by the Shelter Cluster during the first six months[13], but few organizations incorporated this guidance into programming. Most notable was the principle that shelter response should be free from discrimination and ensure rights of the most vulnerable. Many organizations required secure land tenure from households as a requisite for shelter assistance, resulting in the exclusion of marginalized and vulnerable populations within communities. **The role of HLP, in particular land security of informal settlers, should be more fully integrated into future shelter interventions** in the Philippines and other contexts where land has been identified as an ongoing challenge.

TRANSITIONAL SHELTERS' LIFESPAN

As with past disasters in the Philippines, temporary or transitional shelters were built by a number of agencies. However, **it is not believed that many of the households will progress to more permanent housing within the design life of these shelters** (typically less than five years). Although not officially reported, it is known that some "transitional" shelters in the Philippines have failed in subsequent typhoons and many were still in use a number of years after they were built. This has particularly been the case for transitional shelters which used coconut lumber for the main structural elements of the shelter, such as corner posts.

COCO-LUMBER AND QUALITY CONTROL

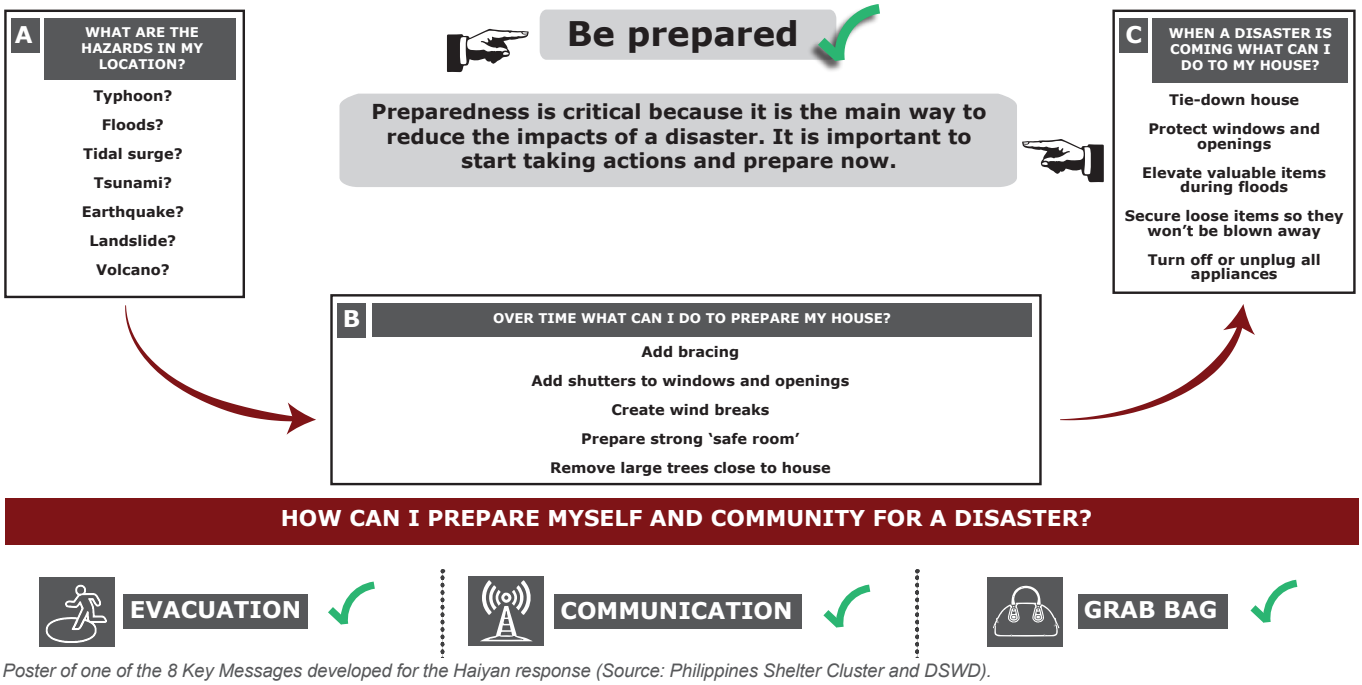
Most shelter programmes relied on coconut lumber as the predominant building material during recovery, drawing from the large number of trees downed in the typhoon. Many households noted that the quality of lumber produced and distributed during recovery was of mixed quality. Despite distribution of technical guidance on selecting appropriate cuts of coconut lumber by the Cluster, **robust quality control was difficult for many organizations.** Degradation of poor quality lumber was prevalent in shelters, occurring as soon as one year after construction. In future responses, technical guidance should seek to develop more robust measures for shelter partners to implement quality control measures.

INSTITUTIONAL PARTNERSHIPS AND COORDINATION

In addition to technical lessons, there were also gaps in institutional partnerships within the shelter sector. In December 2013, the President created the Office of the Presidential Assistant for Rehabilitation and Recovery (OPARR) to act as the "overall manager and coordinator of rehabilitation, recovery, and reconstruction efforts"[14]. Under this office, five clusters were established to manage recovery, including infrastructure, resettlement, social services, livelihood, and cluster support. Despite similar objectives, **the international clusters and the government office functioned largely in parallel, with limited collaboration.** A number of shelter partners noted that earlier, and more integrated, coordination with local governments was needed.

[13] PSC, March 2014, HLP Guidance Note on Relocation for Shelter Partners, http://bit.ly/2kC7FUr.

[14] National Economic and Development Authority. 01 August 2014, Yolanda Comprehensive Rehabilitation and Recovery Plan, http://bit.ly/1Rvzwia.



Poster of one of the 8 Key Messages developed for the Haiyan response (Source: Philippines Shelter Cluster and DSWD).

CASE STUDY

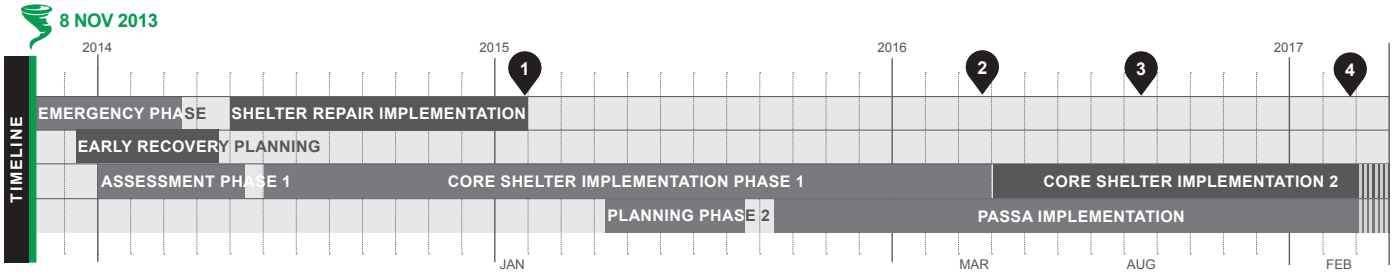
PHILIPPINES 2013-2017 / TYPHOON

KEYWORDS: Multiphase, Core shelters, Sanitation, Training, Community participation

CRISIS	**Typhoon Haiyan (Yolanda), 8 November 2013.**
TOTAL HOUSES DAMAGED	**518,878** partially damaged **493,912** totally destroyed
TOTAL PEOPLE AFFECTED	**3,424,593** households (16,078,181 persons).
PROJECT LOCATIONS	**Selected communities in Leyte island.**
BENEFICIARIES	**4,302** households (17,200 people).
PROJECT OUTPUTS As of Feb 2017	**2,007 Core Shelters** (target: 2,280). **2,019 Shelter Repair Assistance**. **2,280 Household Toilets** with septic tank (target: 3,030).
OTHER OUTPUTS	Over 200 local carpenters and masons trained, 26 communities (more than 3,000 households) reached with community workshops on safe shelter practices, over 10,500 coconut trees planted.
SHELTER SIZE	**22m²** (expanded from previous programmes, based on community consultations).
SHELTER DENSITY	**4.4-5.5m² per person** (the average family size in Leyte is 4.1, according to a government census).
MATERIALS COST	**USD 1,972-2,101** per core shelter with toilet (USD 1,207 for materials, USD 381-510 for toilet, USD 384 for labour). **USD 337** per household for Shelter Repair Assistance (USD 121 for materials, USD 256 cash grant).
PROJECT COST	**USD 2,240** per core shelter with toilet. // **USD 397** per household for Shelter Repair Assistance.
OCCUPANCY RATE	**99.4%** of shelters occupied at the time of post-construction monitoring.

PROJECT SUMMARY

This multiyear project included an emergency phase, followed by transitional and recovery phases. In the first phase, CGI sheets and cash grants were provided for shelter repair, and core shelters were constructed with latrines. In the second phase, a participatory approach was used to strengthen community resilience and safer construction practices, within an integrated programme, which provided opportunities for people to take ownership on cross-cutting issues.



1. Jan 2015: **2,019 Shelter Repairs with technical assistance and dissemination of Safe Shelter Awareness messages completed.**
2. Mar 2016: **Phase 1 target of 1,400 core shelters completed. 275 identified individual households assisted with relocation in host families.**
3. Aug 2016: **20 communities reached with PASSA and Shelter Phase 2 - community workshops on Safe Shelter Awareness.**
4. Feb 2017: **2,007 core shelters and 2,280 toilets completed in total. Project is still ongoing.**

STRENGTHS

+ Skills enhancement and engagement of local work-force.
+ Culturally appropriate design solution.
+ Cost effective design and implementation.
+ Community involvement in decision-making and construction.
+ Promotion of self-help approaches for long-term resilience.
+ Local procurement and prefabrication workshop set-up.

WEAKNESSES

- Long organizational procurement and logistical processes.
- High need of coco-lumber for the design, and use of untreated lumber.
- Lack of sufficient competent local staff.
- Lack of flexibility of the design.
- Septic tanks were only a partially safe sanitation solution.

SITUATION BEFORE THE TYPHOON

For an overview of the situation before and after the disaster, and the national shelter response, see overview A.23 in Shelter Projects 2013-2014 and overview A.8 in this edition.

The project targeted coastal areas comprising households who were dependent on farming and fishing. The settlements evolved in the last hundred years from informal groups of houses and farms that expanded as clusters and villages around paddy fields, plantations and along coastlines, replacing the tropical forest. The socio-economic status of the population was generally weak, with a large portion being either tenant farmers or daily workers with lower income, living in semi-permanent houses with limited access to basic facilities, often settling in no-build zones. Unsafe construction practices, using light materials and lack of technical knowledge on safer construction, made the community more vulnerable against typhoons.

SITUATION AFTER THE TYPHOON

More than 80% of buildings, houses and vegetation in the area were flattened by the typhoon. Immediately after the disaster, most inhabitants were temporarily displaced, but soon returned to their original dwelling sites and started constructing makeshift shelters. The key concern in terms of shelter was to overcome insecure construction practices that were dominant in the region, mainly due to lack of knowledge and the weak socio-economic status of the population.

BENEFICIARY SELECTION

The project area was selected based on regional and municipal level coordination between local governments and shelter actors. The priority was to reach severely affected communities with limited access to external assistance.

Based on commonly agreed selection criteria between cluster partners, the team collected an initial list from the Local Government Units. To avoid disparities, “recovery committees” were established at community level, to verify the information based on the selection criteria, followed by household visits and validation. The team needed to be aware of community dynamics and required technical capacity to evaluate structural damage and categorize its level. Thanks to an early recognition of these limitations and challenges, the assessment was interrupted to train the team first, before reforming the recovery committees.

IMPLEMENTATION PHASE 1

The project had three main objectives, strategically staged in two phases. The first phase focused on a) immediate Shelter Repair Assistance and b) Recovery support through Core Shelter reconstruction, while the second adopted a broader approach towards improving community resilience.

EMERGENCY: SHELTER REPAIR ASSISTANCE

Immediately after the disaster, the need to quickly repair partially damaged houses was very high. The Shelter Repair Assistance supported affected families with cash grants and distribution of CGI sheets. This phase was completed in four batches over nine months.

TRANSITION: CORE SHELTERS AND SANITATION

The Core Shelter construction was **executed in several batches to allow certain learning and development,** and minimize risks. Each Core Shelter included a household toilet. Since the project area was mostly on a high water table, with water points randomly installed around the settlement and congested dwellings, **finding an appropriate sanitation solution was a sensitive topic;** the team studied various design options and adopted a two-chamber septic tank design, adjusting the elevation depending on specific site conditions and ground water level.

Core shelters and latrines were built to a set design, which was presented at community meetings to explain its features and receive feedback.

During the planning stage, the project team conducted **community consultation workshops** to configure a feasible strategy. There was a wide agreement amongst the affected population that an owner-driven approach would put more stress on vulnerable target groups, and would also cause implementation challenges with regards to market supply and quality assurance. It was decided that the beneficiaries would join the construction team and the organization would manage the material delivery, technical support and overall monitoring.

Secure land tenure, site safety and adequacy were the prerequisites for construction. Beneficiaries without land were supported for relocation to willing host families, or smaller group resettlements in communal plots identified by the local stakeholders.

Due to various delays and a slight overestimation of implementation capacity, **the construction extended long into the late recovery phase.** Therefore, a significant part of the shelters were built when most beneficiaries had already recovered. Thus, instead of being an entry-point for further improvements by the beneficiaries (as intended by the Core Shelter concept), the shelters often ended up substituting previous self-help efforts, though with a higher quality.

INVOLVEMENT OF AFFECTED PEOPLE AND CARPENTERS

In the beginning, the organization found it difficult to actively involve the affected people, as they were in a distressed state. However, as the project progressed, it managed to build strong cooperation with the community by means of participatory activities and focus group discussions.

For the Core Shelter construction, the project recruited local carpenters and provided on-the-job training. Since very few skilled carpenters and masons were available in the community, **the pilot phase focused on training and skills enhancement.** Each team consisted of two skilled carpenters and two unskilled workers, supported by one beneficiary or representative. A trained monitoring team conducted several interactive sessions at community level to impart knowledge on safer construction, identify problems and make improvements on the construction details and process. 35 carpenter teams and 25 mason teams were trained over a period of time, both on-the-job and through formal trainings by an official institute.

Core shelters were built in several batches by construction teams that included the beneficiaries. Material supply and monitoring were managed by the organization.

IMPLEMENTATION PHASE 2: RECOVERY

The second phase used the PASSA approach[1] in order to more actively involve communities and strengthen their knowledge, attitude and practices. Beneficiaries actively participated in focus group discussions and PASSA interactive sessions, which contributed to develop a sense of ownership, captured learnings and resulted in small improvements during the implementation. This phase emphasized disability inclusion, environmental regeneration, site risk mapping and mitigation, backyard gardens and facilitation of formal training for skilled carpenters and masons. Moreover, **post-construction monitoring and face-to-face sessions** with beneficiaries were conducted, followed by community walks to facilitate discussion around good and bad practices. **Community workshops** were also organized on various integrated topics such as roof tie downs, safe shelter extensions, construction of improved cooking stoves, wall upgrading and mitigation of fire risks.

COORDINATION

Considering the scale of the disaster and the difficulties faced by the government to coordinate with several agencies, **coordination at Shelter Cluster level played a very vital role** for this project, through the production of technical messaging and data, as well as for decision-making, identifying gaps in the assistance and optimizing organizational resources.

However, the coordination also had some weaknesses. On one hand, the **focus on reconstruction came relatively late,** as relief operations were a priority. After the deactivation of the Cluster, the partners still needed provincial and national level cooperation. On the other hand, **the lack of a clear government policy on the complementing shelter assistance** and selection criteria led to disparities at the local level. More than

[1] Participatory Approach to Safe Shelter Awareness, a participatory method of Disaster Risk Reduction related to shelter safety and facilitated by volunteers, which guides community groups through several activities: http://bit.ly/2lqQBUA. See also case study A.13 (Haiti) in *Shelter Projects 2011-2012*.

In the second phase, the project used a community-led approach to analyse different hazards and their impact on the communities (PASSA approach).

250 of the originally assessed beneficiaries opted out from this project to profit from the government's cash assistance. However, the project managed to expand to other communities.

SHELTER DESIGN AND DRR

The wooden core shelter design had been previously implemented by several partners after past disasters in the country, with 18m² covered space. During the initial consultation, the design received high cultural acceptance by the community. Subsequently, certain **improvements were made to increase the covered living space** to 22m² and to adjust the structural design for a higher wind speed as a "one size fits all" progressive core shelter. The design was developed using local materials, particularly coco-lumber.

The project was designed with **Disaster Risk Reduction as an integrated crosscutting theme.** The design concept of the elevated core shelter and toilet aimed at mitigating the risk of flooding, and its structural design was made to withstand 200km/h winds. During the first phase, both the Shelter Repair Assistance and Core Shelter interventions were accompanied by safe shelter awareness inputs, through knowledge-sharing sessions with the communities. However, the PASSA approach was only effectively adopted in the second phase.

PREFABRICATION WORKSHOP APPROACH

For the construction of the core shelters, certain components were prefabricated to ensure the quality of construction and to standardize the design. The workshop also provided support for evaluating various small improvisations in design and technical solutions. This set-up was new in the area, but was quickly adopted. As the construction progressed, the project downsized prefabrication and most construction was executed directly in the field, by skilled local carpenters. However, for quality purposes, the fabrication of key components like structural footing and wall panels continued to be done in the workshop.

LATRINE DESIGN

An innovative latrine design was introduced through this project, which if properly constructed improves the effluent quality significantly and thus helps reducing groundwater pollution. This is especially a problem in dense rural settlements that still rely on shallow hand-pumps as their primary source of drinking water. In fact, this goal was only partially achieved, due to limits in quality of labour, materials and monitoring of construction quality below ground.

MAINTENANCE AND TERMITE PROTECTION

“Care and maintenance” were discussed in various focus groups. The project included the use of a treatment (soligNum) in the lower exposed portion of the structure, to enhance termite protection and prevent decay; a concrete footing, to increase the distance of the wooden post from the soil; and a galvanized iron sheet above the concrete, to protect the edge of the wooden post.

MATERIALS

The design of the core shelter used **both natural and industrial materials available in the local market.** The natural materials included coco-lumber, bamboo, sand and gravel, which were sourced through licenced suppliers that operate under the Department of Environment and Natural Resources. The shelter also used woven bamboo to produce wall panels, which was sourced from the neighbouring island, where bamboo is planted in large scale.

Some of the core shelters included ramps to improve accessibility.

Coco-lumber was available in large quantities soon after the disaster, because plenty of trees were uprooted during the Typhoon[2]. Moreover, Leyte Island is identified as a hub for the supply of coco-lumber by the Philippine Coconut Authority. Although the use of coco-lumber was encouraged, due to limited local capacity less than 30% of the fallen trees were recovered for construction before rotting. Because of the high demand of coco-lumber in reconstruction, **prices rapidly increased** in the local market (up to 111% in two years), also due to the taxations imposed by the authorities on extraction and transport. As a result, the project experienced several supply challenges. This was mainly due to the lack of any obligation by the agencies to control the market price. The idea to support the local suppliers was discarded once it was clear that they could not compete with the external large suppliers, who ended up dominating the market.

To address the issue of environmental impact, **the project collaborated with the Coconut Authority to support mass coconut plantation** linked to livelihoods activities.

[2] See case study A.11 for an example of a large scale response utilizing the fallen coconut trees.

Aerial view of one of the areas where the project was implemented. The shelters with red roofs were built by the organization, while other structures were self-built.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

Safer building practices were promoted, such as strapping of roof structures, bracing and proper detailing of the foundations (raised and made of reinforced concrete).

STRENGTHS

+ Skills enhancement and engagement of local construction work force. This was a slow process that required very close monitoring and regular feedback sessions. Though very resource- and time-intensive, this paid off by the level of quality and standards reached, and the monitoring effort that were significantly reduced.

+ Culturally appropriate design solution, which was widely accepted and occupants reported they felt safer in it.

+ Cost effective design and implementation. Although the time frame was extended slightly, increasing the overhead costs, the savings generated by the cost-effective project execution managed to increase the targeted number of beneficiaries, without requesting any cost extension.

+ Involvement of community in decision-making and construction processes, which helped the organization to build a strong relation with the community at an early stage. During phase II, the project was highly participative and effective in increasing community knowledge on Shelter and Settlement Safety and thus building community resilience.

+ Promotion of self-help approaches for longer term community resilience. Focus group discussions identified issues around shelter and settlement by mapping key factors that lead to the risk of disaster. The discussions also encouraged community groups to develop action plans for mitigating those risks. This was allowed by the extended time frame of the project, which made possible follow-up visits and linkages with integrated sectors.

+ Local procurement released the burden from the project logistical chain and optimized resources.

+ The prefabrication workshop contributed to the quality of the construction and supported the carpenters and the workforce in the field to maintain standards and effectiveness.

WEAKNESSES

- Long organizational procurement and logistical processes caused delays.

- High need of coco-lumber for the design, as well as use of untreated coco-lumber for construction, **and lack of appropriate substitute procurement measures.** The wooden Core Shelter design was based on the assumption that a large quantity of trees were available, though large quantities of fallen logs got rotten and additional felling and supply of untreated lumber continued. The project could have generated livelihoods and liaised with the government to establish a coordinated management of coco-lumber for reconstruction.

- The programme faced a constant shortage of competent local personnel, and in particular of soft skills needed to perform effective communication. This was partially due to limited organizational support and internal HR policies that restricted hiring of staff with the skills required.

- The "one size fits all" solution came with certain limitations and inflexibility to adapt to the context and also to react to the changing market situation with alternative solutions. While the shelters offer a significantly higher safety against typical typhoons, its flexibility and overall perceived utility-value was somewhat limited by the elevated design and other related features common in the region. A concern was also that the woven-bamboo wall panels do not offer sufficient protection against water during heavy rains. These factors have resulted in some shelters being less used.

- Septic tanks were only a partially safe sanitation solution. Although the improved design was identified as the most suitable solution, emptying septic tanks and an environmentally friendly sludge disposal and management are often expensive services and require active commitment of local governments. After three to five years, the effluent quality will deteriorate quickly and pose a pollution risk to the groundwater. The coverage of desludging services was still very low and the high costs posed a constant challenge.

LEARNINGS

- **Heavy top-down decision-making for a construction project ends up with compromised corners.** Decision-making should be consultative and flexible to complement technical recommendations. The transfer of knowledge and learnings from one project to the next is crucial.
- **Collaborative rather than competitive approach.** At the onset of the project, the focus lay more on achieving the targets indicated in the project log-frame, and thus overlooked quality indicators. A sense of competition was developed across sectors and agencies, which was not necessarily healthy.
- **Interest and motivation are important factors to be considered while identifying the project team.** The project configured the need for capacity-building but did not succeed in engaging motivated and suitable project staff for specific tasks. As a result, at a certain point the project team felt over-burdened.
- **Timeliness in delivering assistance is critical in addressing the needs and ensuring effectiveness.** The shelter repair assistance could have been rolled out significantly faster and better if it had been already planned and prepared during the emergency phase. However, the actual market supply during the first months of the recovery might require a switch to more direct material provision rather than cash.

CASE STUDY

PHILIPPINES 2013-2015 / TYPHOON

KEYWORDS: Core housing, NFI distribution, Training, Disaster Risk Reduction, Community participation

CRISIS	**Typhoon Haiyan (Yolanda), 8 November 2013.**
TOTAL HOUSES DAMAGED	**518,878** partially damaged **493,912** totally destroyed 21,005 houses damaged and 26,515 destroyed in the project areas.
TOTAL PEOPLE AFFECTED	**3,424,593** households (16,078,181 persons).
PROJECT LOCATIONS	**10 municipalities in Samar.**
BENEFICIARIES	**22,310** individuals.
PROJECT OUTPUTS	**4,462 core shelters** built, with latrine. **1,071 carpenters** trained.
SHELTER SIZE	**18m²**
SHELTER DENSITY	**3.6m² per person** (average household size of 5).
MATERIALS COST	**USD 1,086** per shelter (+10% when trees had to be purchased). **USD 1,596** per shelter (with septic tank).
PROJECT COST	**USD 2,424** per shelter.

PROJECT SUMMARY

The organization built 4,462 “core shelters” to a standard design with accompanying sanitation in 18 months, using local labour and a highly systematized approach. The project also included a significant training component. The case study highlights detailed learnings related to construction management for an agency-led construction project, working with the community and local authorities.

1 Mar 2014: **Pilot construction of demo-houses.**

2 Jul 2014: **Extension of the project to the west side of the island.**

3 Dec 2014: **Completion of the 4,462 shelters.**

4 Dec 2014: **Launch of sanitation phase: construction of toilets starts.**

5 Jun 2015: **Completion of construction of all the latrines.**

STRENGTHS

+ Speed of the response.
+ Previous knowledge of the area and the communities.
+ Strong logistical capacity.
+ Cooperation with local partners.
+ High standard of quality of materials and solutions adopted.
+ Strong accountability to the affected communities.

WEAKNESSES

- MoUs with municipalities should have been signed earlier.
- Assessment and data collection teams needed more training.
- Poor post-implementation monitoring to assess long-term impacts.
- The sanitation component should have been included from the start.

CONTEXT

For an overview of the situation before and after the disaster, and the national shelter response, see overview A.23 in Shelter Projects 2013-2014 and overview A.8 in this edition.

The organization had established an office in Tacloban in 2008 and had focused on Samar with its partner organization, working with conflict-affected communities.

The region was one of the poorest in the country, largely dependent on agriculture and fisheries. Eastern Samar is ranked the third poorest province in the country, with fishermen and farmers being the poorest groups.

SITUATION AFTER THE TYPHOON

According to official figures, in the 10 municipalities targeted by the project, over 40,000 houses were damaged, of which more than half were totally destroyed. The most heavily affected houses were those of lower quality, with a damage pattern reflecting the poverty map in Samar. The typhoon damaged timber structures much more than concrete ones – with many communities being registered with 100% damage.

The organization established two field offices in Samar within one month of the typhoon.

In the aftermath of the typhoon, affected people built makeshift shelters.

THE ROLE OF COORDINATION

The organization was not a member of the Shelter Cluster, but did coordinate with other agencies working in the same locations. The organization also used and respected principles and technical standards that had been set by the government and the Cluster.

The agency assessed the different programme options proposed by the Cluster and decided to build core houses with a training component, as this was in line with its general approach to improve resilience of the typhoon affected people.

COMMUNITY ENGAGEMENT

At the outset of the project at each location, meetings were held with the authorities and a meeting was held with all the community members to **explain selection criteria and beneficiary roles and responsibilities**, to ensure that the processes were clear and those most in need were not left out. In the meeting, beneficiary declarations and land agreements were explained and collected.

During the inception community meetings, the **responsibilities of the barangay were explained** as part of the programme to avoid local politics impacting on the implementation.

A hotline was set up for beneficiaries to ask questions and a volunteer would take care of treating each case individually. This allowed great transparency with the beneficiaries as well as to better focus or adjust the programme when needed.

SELECTION OF BENEFICIARIES

Geographical selection was needs-driven, based on access and damage. Harder-to-reach areas were prioritized, as the organization had more logistical capacity than other agencies, those communities tended to have lower income levels and more houses using local materials, which showed higher levels of damage. The agency therefore chose to work in remote locations where many other organizations would not engage.

Household selection was conducted in the following steps – with all data being entered into a database, containing beneficiary and barangay data.

1. The list of totally damaged houses was collected from the local authorities (both barangay captains and municipal sources).
2. Each household was then verified by a house to house visit conducted by volunteers of the local partner.
3. Using agreed criteria, lists of eligible and non-eligible households were established, with pictures and data from the verification visit. Lists of cases to be reconfirmed due to absence of or incomplete data were also prepared, and a second verification exercise was conducted. In some cases, a structural review of the house by an engineer was conducted to determine if it was partially or totally damaged.
4. A community meeting was organized with all validated households to explain the reason for non-selection. In case of disagreement or doubt, cases were discussed and revisited when necessary. These meetings proved the most important stage of beneficiary validation.
5. Officials signed a final beneficiary list.
6. The final lists were shared with the municipality and MoUs were signed with the barangays to confirm commitments and mutual responsibilities.

The project had a strong focus on safer construction techniques.

In the most remote areas where access was difficult, but a decision to intervene was taken due the high vulnerability, combining assessment with beneficiary validation process saved time. For remote and low-populated barangays, a decision to assist all people was made, even if the number of beneficiaries was small.

Taking time with a rigorous yet time-consuming selection process, enabled smooth implementation and a very low rate of complaints later on.

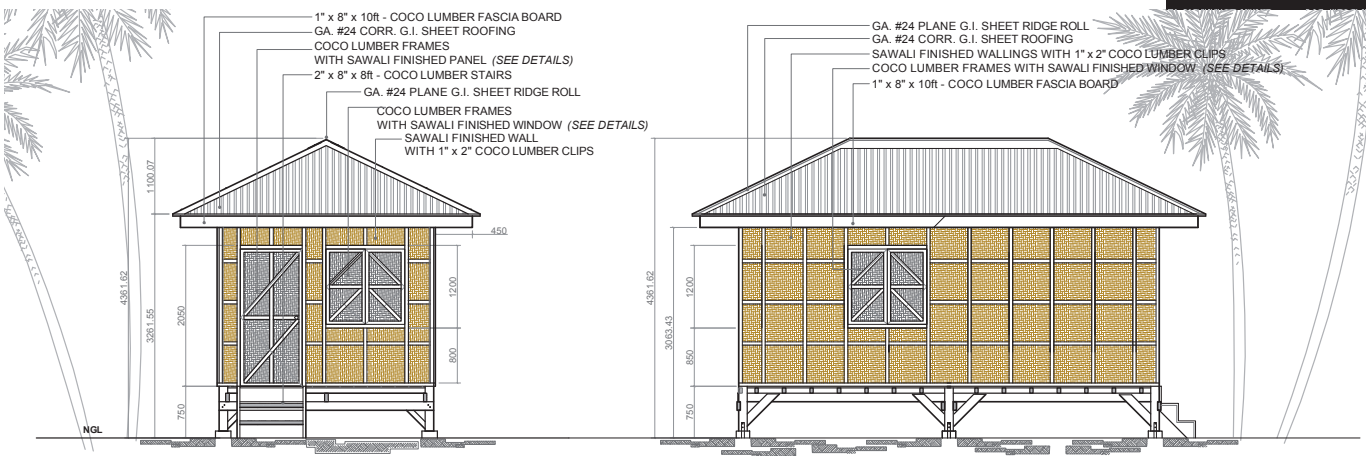
SHELTER DESIGN

The shelter model was based on the original model used in the response to Typhoon Bopha and consultations were made with local communities in urban and rural areas. Two samples were initially built next to the organization's offices, for training and display purposes. Afterwards, the first houses built in each barangay were used as models involving carpenters from the community. Upgrades were made to improve hurricane resistance, such as hurricane straps, an additional truss, alignment of windows, use of galvanized nails and better CGI sheets.

BENEFICIARY ORIENTATION

Orientations were conducted with selected communities and beneficiaries. It proved to be important for barangay officials to be present as they were responsible for resolving issues in the community related to land ownership. In most of the cases, landowners allowed beneficiaries to build a house on their land and to stay for at least five years for free or for a small renting fee. In other cases, the barangay captain intervened and found a relocation site.

The donation certificate stated that the beneficiary remains



The project built core shelters according to a set design and with a highly systematized approach.

the owner of the materials even after they have left the land. Agreements were in the local language, read out during the orientations and followed by a session for questions and answers.

CHAINSAW OPERATORS AND TIMBER QUALITY

Wood was requested from the beneficiaries as contribution. This worked for 82% of the cases. When this was not possible, it was mainly due to specific vulnerabilities (1%) or physical unavailability of trees, particularly in areas far from coconut plantations (17%).

Local labour was used as much as possible. Chainsaw operators from other regions might be involved only as a temporary solution in the early stage of the programme. After some negative experiences, purchase orders were given out to the same chainsaw operator only if the previous order had already been completed. Wherever possible, **the best chainsaw operators were retained** to train the new ones. In hindsight, project staff should have been better trained on technical quality control of timber.

Beneficiaries had the responsibility to sign for receipt of the timber and to replace anything missing.

It was found that **middle managers in the programme created more challenges than convenience.** Chainsaw operators and carpenters had a tendency to form groups in order to survive financially, yet working through a middle manager did not allow skilled labourers to be directly contracted and accountable for their work. The one who received the purchase order should have effectively done the work, especially for quality control purposes.

MATERIALS SOURCING AND PREFABRICATION

Materials were sourced as follows:

- **Local procurement** from project areas: wood and aggregates.
- **National procurement:** cement, iron bars, tie wire, hinges, post straps, *amakan* walling (traditional woven bamboo).
- **International procurement:** CGI sheets, flat iron sheets, hurricane straps, galvanized nails.

A central workshop was established to pre-cut and bend roof ridges and footing bars. Twisted umbrella nails with rubber seal increased construction efficiency and neater finishes, compared to the application of seal paste on every roof nail.

MATERIALS KITS

Overall, logistical challenges of the 500kg kits of materials were significant, given the massive area with complicated delivery needs. As a result, **a flexible approach was established:**

- For easily accessible areas, start small and plan for continuous supply.
- For areas difficult to access, deliver in bulk and plan for storage. In instances like island or far upland, delivery needs to be direct and in almost full quantity. Sufficient time needed to be given for hauling of materials from delivery at the last reachable point, and cash was required to pay for the “last mile” of transport, as part of livelihoods programming. Additional buffer stocks were required and smaller numbers of kits should have been pre-positioned in advance of anticipated poor weather.

Involving barangay councils in material distributions proved to be important for community mobilization and security reasons.

TRAINING OF CARPENTERS AND COMMUNITIES

Initially, the team came with technical plans, drawn by computer and in units not used locally. Craftsmen could therefore not interpret them, so they needed to be re-formatted into a simpler booklet.

Attendance in the training course was an obligatory step for carpenters to be contracted. The best carpenters were retained for ongoing work in the project. During the programme, a total of 1,071 carpenters were trained. At the same time, the whole community learned about good construction practices. The largest long-term impact of the project was in the training for affected people that it enabled.

CONSTRUCTION OF SHELTERS

The preparatory steps (selection of beneficiaries, delivery of materials, cutting of wood, procurement of local aggregates, training of carpenters) took much longer than the actual house construction, which was about four to five days.

It proved better to distribute orders to carpenters at the beginning of the week, to avoid work during weekends, when monitoring teams (one monitor per barangay) were not present. The agency found best results when they selected carpenters, rather than letting beneficiaries choose their carpenter.

More systematic approaches should have been conducted for safety. Contracted carpenters were not always insured and systematic insurance was not in place.

POST-IMPLEMENTATION REVIEW

Shortly after the implementation of the project, another typhoon hit the affected area. In a review of the houses, it was found that only four had failed, three of which due to the use of young coco-lumber and one due to a land-slide.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

STRENGTHS

+ Rapidity of the response. Early decision to engage in shelter after the typhoon hit the area and very quick activation of the programme before the end of the emergency phase.

+ Previous knowledge of the area and of the communities affected. The organization was present in the area before the emergency for its protection and assistance activities and remained after the response.

+ Logistical capacity. The mobilization of resources from the organization was very fast also thanks to the existing logistical set-up in the country with an additional deployed logistics team.

+ Cooperation with local partners. The national partner organization has an extensive coverage of all parts of the country.

+ High standard of quality. Within the framework set by the government guidelines (including adaptation to the environment and sustainability), all solutions adopted and materials provided through this project were of high quality.

+ Strong accountability. The beneficiary feedback system (hotline) allowed the beneficiaries to raise concerns and the programme to be adjusted where needed.

TECHNICAL SOLUTIONS	
Foundations	Six concrete foundations are used to support each of the six individual columns. With 1:2(cat) mix of concrete and steel reinforcement, the foundation is strong enough to support the structure above the expected load even if using heavier good-lumber in the construction. Foundation is also shaped in STEP (reverse T) type to increase uplift resistance.
Truss	The trusses for the roof are designed to create a hipped roof shape with two original full trusses, six half trusses covering the roof ends, and an additional middle truss.
Floor	The floor is made from coco-lumber boards providing better and steady floor supported by three long and 14 short floor joists.
Wall	Made from the *amakan* sheet clipped with wall studs from the inside and wall clips from the outside in 600mm grid creating a grid-like finish on the outside.
Openings	The shelter design provides three windows and one door for opening and access. Supported by double hinges at 2mm thickness the durability of the opening is guaranteed to last.
Bracing	Diagonal bracing was placed in wall. One bracing is also placed in the roof structure connecting all the trusses into single structure. Although it is advised to use longer bracing in full wall short diagonal bracing was used to allow full modification of the opening across the wall and flexibility of further extensions.

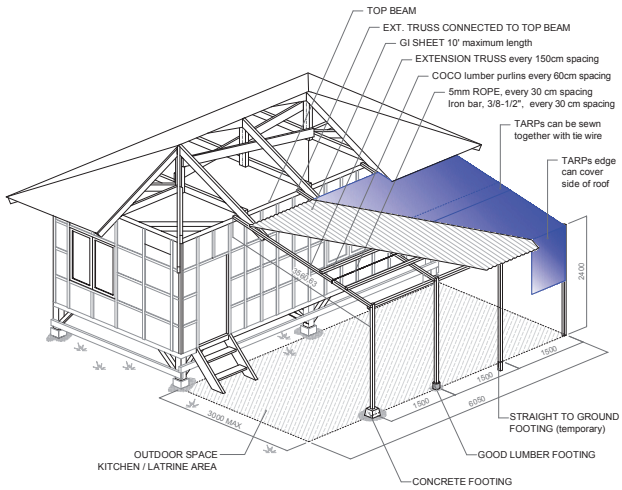
WEAKNESSES

- MoUs with municipalities should have been signed early in the process to facilitate the next steps in full transparency.

- More effort should have gone into **training the field teams working in assessment and data collection,** to ensure consistency.

- Although there was a significant training component, there was **little or no consistent follow up on the impacts of the training** in terms of safer construction outcomes in the broader community. **More attention should have been given to post-implementation monitoring,** to assess short and long-term impacts.

- The sanitation (and hygiene promotion) component should have been included in the project from the outset, instead of having to conduct a secondary follow up to install sanitation. This would have simplified the operations.



Local carpenters didn't understand technical drawings, so concepts had to be explained through simpler and more intuitive ways, and a booklet was produced.

LEARNINGS

- **A full set of recommendations from the project were learnt and compiled** in a single document for future use by the agency. Overall, the project was deemed to have been positive by the agency and a model for future interventions in similar contexts. The various templates and manuals produced were of particular interest to the agency.
- **Starting small through pilot projects and then scaling up** can be a successful approach.
- **A combination of high quality hardware and software** components is essential for project success.

The project used locally available materials (e.g. the amakan sheet, left) and safe construction techniques, including bracing, strong trusses and roof strapping.

CASE STUDY

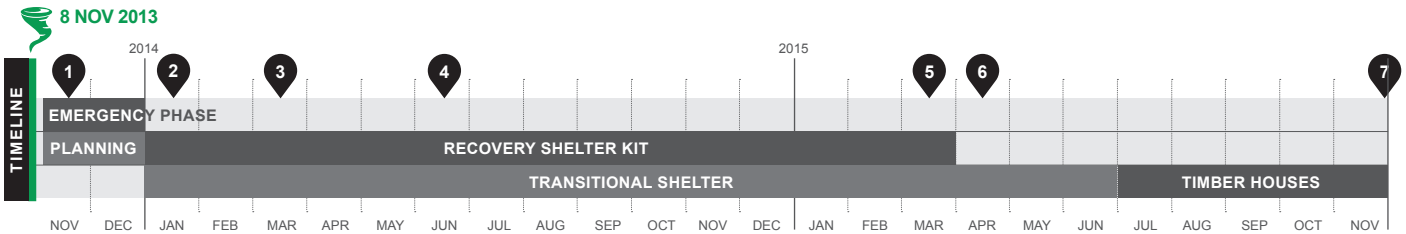
PHILIPPINES 2013-2015 / TYPHOON

KEYWORDS: Emergency shelter, Transitional shelter, Procurement and logistics, Local materials, Training

CRISIS	**Typhoon Haiyan (Yolanda), 8 November 2013.**
TOTAL HOUSES DAMAGED	**518,878** partially damaged. **493,912** totally destroyed. 21,005 houses damaged and 26,515 destroyed in the project areas.
TOTAL PEOPLE AFFECTED	**3,424,593** households (16,078,181 persons).
PROJECT LOCATIONS	**Guiuan, Roxas, Ormoc, Tacloban.**
BENEFICIARIES	**64,113** households.
PROJECT OUTPUTS	**52,096 NFI Kits** **33,994 Emergency Shelter and NFI kits** **58,062 Recovery Shelter kits** **3,500 Transitional Shelters** **72,956 Individuals trained** in DRR (51% women) **640 Timber Houses** built in Leyte
SHELTER SIZE	**18m²** for recovery shelter kits (minimum, variable, size) **23-24.7m²** for transitional shelters.
SHELTER DENSITY	**3.5m² per person** (for Recovery Shelter Kits). **5m² per person** (for Transitional Shelters). (based on five-person-average household size)
MATERIALS COST	**USD 300** for Recovery Shelter Kits. **USD 1,190-1,860** for Transitional Shelters.
PROJECT COST	**USD 385** for Recovery Shelter Kits. **USD 1,960** for Transitional Shelters.

PROJECT SUMMARY

This was a large-scale programme, using a “Debris to Shelter” approach, to support typhoon affected households to repair or rebuild their damaged or destroyed homes. Almost 20 million board-feet of lumber were salvaged, corresponding to an estimated number of almost one million trees. Through 97 vendors in all affected areas, lumber was provided for more than 62,000 shelter interventions. Disaster Risk Reduction and Build Back Safer trainings were given to local carpenters and shelter beneficiaries, promoting safer construction against future disasters.



1. Nov 2013: **First distribution of Emergency Shelter and NFI kits.**
2. Jan 2014: **First Recovery Shelter Kit distributions and Disaster Risk Reduction training.**
3. Mar 2014: **First transitional shelters installed.**
4. Jun 2014: **All four field offices implementing transitional shelters, including in relocation sites in Tacloban.**
5. Mar 2015: **End of Recovery Shelter Kit distributions.**
6. Apr 2015: **Closure of two offices (Ormoc and Roxas).**
7. Dec 2015: **Completion and handover of Timber Houses.**

STRENGTHS

+ Speed of the response.
+ Flexible procurement and implementation methodologies.
+ Local market approach, supporting livelihoods.
+ Removal of fallen or damaged trees helped clear the land.
+ Build Back Safer messaging targeted a range of stakeholders.

WEAKNESSES

- Choice of coco-lumber was not always appropriate.
- DDR training prioritized measures to strengthen roofs.
- Difficult to forecast eventual reductions in coco-lumber availability.
- Some field offices were less adept at establishing partnerships.
- Under-calculation of needs for logistics, procurement and finance systems.

The project used a flexible approach to reuse fallen coconut trees to set up a large-scale shelter response. Most of the milling was done by licensed chainsaw operators, directly where the coco-lumber was sourced.

In a few cases, transitional shelters were built in resettlement sites, such as this one in Tacloban, rather than on people's original plots.

For an overview of the situation before and after the disaster, and the national shelter response, see overview A.23 in Shelter Projects 2013-2014 and overview A.8 in this edition.

THE USE OF COCO-LUMBER BEFORE HAIYAN

In the Philippines, coco-lumber (wood from coconut trees) is a recognized traditional construction material, although with fewer uses than hardwoods. Since 2011 (Tropical Storm Sendong response), coco-lumber has been recommended by Shelter Clusters in the country. Since 2012 (Typhoon Bopha response), there has been a clear policy from the Government of Philippines Coconut Authority (PCA) on the collection and use of fallen or damaged coconut trees for post-disaster shelter, as well as a clear pathway for permission to do so, including the use of licensed chainsaws and chainsaw operators, and a visual grading system for the selection of the lumber. Moreover, the implementing organization had already been using coco-lumber for shelter before its Haiyan response.

SITUATION AFTER THE TYPHOON

Approximately 33 million coconut trees were fallen, or had been damaged beyond productivity by the typhoon, with an estimated 13 million trees[1] which might be accessible and usable. Replanting was not possible until fallen trees were removed and there were concerns that if they were left on the ground for too long, the rot would promote damage or insect infestation to the remaining healthy trees in the area.

PROJECT OVERVIEW

A number of different shelter interventions were chosen. In the first weeks, the organization distributed over 86,000 Emergency Shelter Kits (plastic sheeting, fixings and tools) and NFI kits, however the main part of the programme centred on two different shelter types: Recovery Shelter Kits and complete Transitional Shelters, both reusing the available coco-lumber.

RECOVERY SHELTER KIT

The Recovery Shelter Kit was an upgrade from the Emergency Shelter Kit, replacing the plastic sheeting with corrugated galvanized iron sheets, roofing nails and the coco-lumber. Technical trainings and cash grants were added, but continuing to include the construction hand tools and some of the other fixings. The main target of this shelter type was the large number of families whose homes had been damaged significantly, but could still be repaired. These households already had land available – in most cases their customary plot.

TRANSITIONAL SHELTERS

The transitional shelters were built in smaller numbers and were targeting two groups of people: those whose houses had been completely destroyed and those whose previous homes had been in the coastal No Build Zones, and therefore had to relocate.

In some cases, these shelters were constructed individually, on plots identified by the beneficiary and in negotiation with the owner of the land and the local barangay[2] chief. In a small number of cases, shelters were installed in groups, on larger plots of land identified by the local municipal authorities, but then evaluated for their suitability by the project staff from the organization and other partners (with activities in the same location).

Designs for the transitional shelters were adapted by each office, but were generally based upon those in previous responses. The predicted lifespan of the coco-lumber was 3-5 years.

COMMUNITY PARTICIPATION

Local barangays were engaged and consulted during the beneficiary-selection process, and also through the Build Back Safer information campaigns which accompanied the distributions.

The communities were mobilized by the local leaders to support and participate in the assistance process, either during the distribution of the kits or in the construction of the transitional shelters. In the absence of a warehouse, the materials for the construction of the shelters were handed over to the families. All of the carpenters and their assistants came from the local communities and participated in cash for work schemes, which were a valuable source of income.

Through the establishment of a hotline and the dissemination of the respective phone number, beneficiaries provided feedback and issued complaints regarding the assistance received.

COORDINATION

The Coco-lumber Technical Working Group of the Cluster provided clear guidance on the permission pathway and technical issues for the collection and use of coco-lumber for shelter, as agreed nationally with the PCA. More generally, the Cluster

[1] This quantity was enough for more than 1 million Recovery Shelter Kits (at an estimate of 20 board-feet of lumber per tree, and approximately 220 board-feet of lumber needed per kit – the amount necessary to provide safe support for 12 CGI sheets for roofing repairs).

[2] Neighbourhood administrative units.

Transitional shelters were used as a basis to recover. Families would personalize the shelters and add small stores and other temporary structures outside the shelters, which served as places for livelihood activities.

strategy of prioritizing recovery in a varied and incremental approach, provided a clear framework for the organization's own palette of shelter options.

Coordination had a less obvious positive impact upon the provision of WASH support to complement the shelter activities. At the subnational level, it was not always possible for the organization to find partners who could provide latrines for those with transitional shelters, for instance, despite the fact that the local WASH Cluster was approached in several cases.

Beyond cluster coordination, the organization developed important relationships with the local municipalities and barangays, with the PCA at both the national and local offices, and with the Department of Social Welfare and Development.

DISASTER RISK REDUCTION

Due to the frequency of natural hazards in the country, the organization adopted a DRR approach, and the training which was given to its technical workers and to beneficiaries was focused around the 8 Key Messages, developed by the Shelter Cluster[3]. Post-programme interviews showed that beneficiaries used more DRR measures for their roofs than for the walls or foundations. This was due to the higher costs of materials for the latter and the practical challenges of "punching into" an existing foundation, as well as the fact that most houses had the largest damage in their roofing.

MAIN CHALLENGES

The greatest challenge was to scale up the "Debris to Shelter" approach, whilst remaining efficient, and to respect commitments made to the various beneficiary communities, once the supply of materials became harder, or more time-consuming. Ensuring that the local vendors could respond to the demand of this programme was also a key issue. **The flexibility to scale up the operation in five sub-offices**, use different kits, and to re-assess the methods of the lumber preparation, was key to addressing these challenges.

In order to implement the projects, the organization had to **establish and recruit over 200 staff** for four new field offices, as well as to maintain the necessary **balance between flexibility and rapid-decision-making** at the field level, **with needs for both support and accountability** from the national office, wherein the project was managed.

[3] Philippines Shelter Cluster, 8 BBS Key Messages, http://bit.ly/2lANU3F.

COCO-LUMBER SUPPLY

In the first weeks of the response, the organization sought to persuade beneficiary communities to **provide fallen coconut trees free of charge,** whilst the organization would then take responsibility for processing them. However, by February 2014, it became apparent that many other shelter actors were already paying locals for the fallen trees and that this would help kick-start the local economy. **The organization thus started to pay** for the lumber, from that point onwards.

As the local vendors and lumber producers did not have the capacity to respond to the demand yet, the organization **worked with other humanitarian actors,** who took on the responsibility of hauling and milling the coco-lumber. However, in less than two months, these partnerships also came to a halt and the local market started to show signs of recovery, driving the organization to **use direct procurement.**

Implementing at a **large scale, through small-scale suppliers** (often without formal business documentation), initially proved a challenge for the organization's procurement department, who had experience with more formal tendering processes, often at a national or international level. **A system was established based on the "pakyaw"** Philippine customary supply-chain methods, whereby payment for the lumber would be made to one representative of a group of smaller suppliers. This reduced the number of individual payments, and accordingly the amount of paperwork to process, as well as consolidated the lumber deliveries in the field.

After the first months, **the fallen or damaged trees near vehicle roads had already been taken and competition had increased** from other shelter actors and the private sector. Although there was still large availability, these issues created delays in delivery and an upwards pressure upon the price. In some cases, in order to meet deadlines, some of the procurement was done through larger commercial suppliers. **The field offices had their own warehouses** to aid the integration of this national and international large-bulk supply chain, with the local, myriad, supply chains for the coco-lumber.

PROCESSING OF THE COCO-LUMBER

For the Recovery Shelter Kits, the coco-lumber was milled in only one dimension (2"x3"), to speed up the milling. The transitional shelters required a wider range of lumber dimensions, amongst a range of industry standard sizes. **Much of the milling of the lumber into its final dimensions was done using chainsaws.** The organization relied primarily upon specialized "scalers", recognized by the PCA, to grade lumber from different parts of the coconut trees, according to density and strength. However, this **grading was done visually and was not aided by any machine.**

The organization used a variety of processing approaches:

- Initially, the lumber was **processed in the locations where it was sourced.**
- After March 2014, when fallen coconut trees were no longer available near roadsides, suppliers were paid to bring the trunks to a **central milling site.**
- Later, **suppliers were contracted** to undertake all of the collection, preparation, milling and delivering to site of the lumber.

Overall, this project was innovative in its "Debris to Shelter" approach, as well as its scale-up using multiple sources, solutions, and flexible approaches to supply and milling.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

STRENGTHS

+ The organization acted quickly to establish four field offices, each with the flexibility and authority needed.

+ Flexible procurement and implementation methodologies were created, so that the local coco-lumber, collected by small-scale suppliers in irregular quantities, could become one of the main materials for a large-scale programme.

+ Local market approaches were adopted with many local suppliers, giving **livelihoods support** to a wide range of communities.

+ The removal of the fallen or damaged trees was also a massive and necessary boost to the farmers and cooperatives seeking to clear the land, in order to replant new coconut trees, as quickly as possible.

+ Disaster Risk Reduction and Build Back Safer messaging was provided for a wide range of actors in the reconstruction process: beneficiaries, local carpenters and contractors.

Materials in the Recovery Shelter Kit	Units	Quantity
Framing kit, coco-lumber, 2"x3"	Board feet[4]	230
CGI sheets (roofing)	pcs	12
Ridge rolls (roofing)	pcs	3
CW nail #2 (fixing kit)	kg	1.5
CW nail #3 (fixing kit)	kg	1.5
Umbrella nails (fixing kit)	kg	3
GI wire #16 (fixing kit)	kg	2
Nylon rope, diameter 10mm (fixing kit)	m	30
Claw hammer, 13" (tool kit)	pcs	1
Combination plier, 8" (took kit)	pcs	1
Aviation snips, 10" (tool kit)	pcs	1
Crow bar, 18" (tool kit)	pcs	1
Handsaw, 20" (tool kit)	pcs	1
PVC pail, 12L (tool kit)	pcs	1
Shovel pointed #2 (tool kit)	pcs	1
Elasto-seal (tool kit)	pcs	1

[4] The board foot is a specialized unit of measure for the volume of lumber, and it equals 1ft x 1ft x 1in.

Local people cut fallen coconut trees into planks with chainsaws (Guiuan).

WEAKNESSES

- The choice of coco-lumber, with its shorter lifespan, was not always appropriate for the shelters with a lifespan of longer than five years.

- Disaster Risk Reduction trainings tended to prioritize only measures for strengthening roofs, rather than giving equal emphasis to all parts of a house.

- It was difficult to forecast eventual reductions in the availability of the coco-lumber, leading to delays in delivery in the later months of the programme.

- Some field offices were less adept at establishing partnerships, leading to a **lack of WASH support** for some shelter beneficiaries.

- Under-calculation of the needs for logistics, procurement and finance systems and staff, during the programme scale-up, meant that these support departments were often playing catch-up after the field implementation teams.

LEARNINGS

- **Flexibility is the key to scaling up solutions** to meet needs, after large-scale natural disasters.
- **Talking in terms of wider livelihood impacts can go a long way** during engagement with a range of different national and local authorities, as well as with the beneficiary communities themselves.
- **Assisting the affected communities and local authorities in their recovery,** working in partnership, enabled the organization to effectively deliver the assistance in a timely manner.
- **There was a significant gap in documentation and knowledge management,** although the organization had extensive experience in disaster response prior to Haiyan, including in the shelter sector. Based on this experience, **the organization developed detailed Standard Operating Procedures to guide future shelter programmes.**
- **Adding small quantities of other, thicker, dimensions to the kit,** (e.g. 2"x4" or even 2"x6") might be appropriate for future versions. In fact, some beneficiaries have re-used lumber from the kit for other purposes, including the bracing of walls or the construction of toilet superstructures.

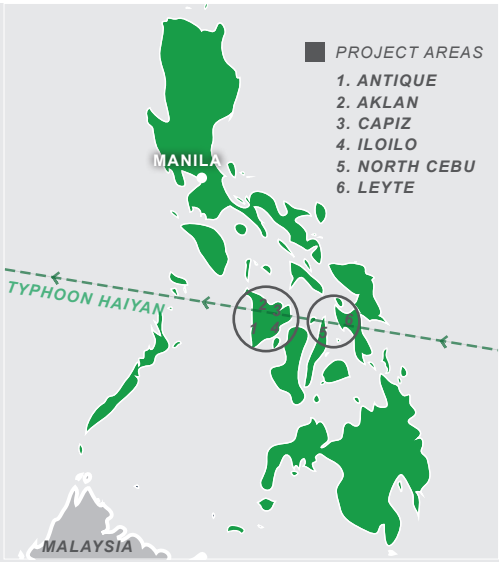
The project distributed timber from fallen trees for various shelter interventions.

CASE STUDY

PHILIPPINES 2013-2015 / TYPHOON

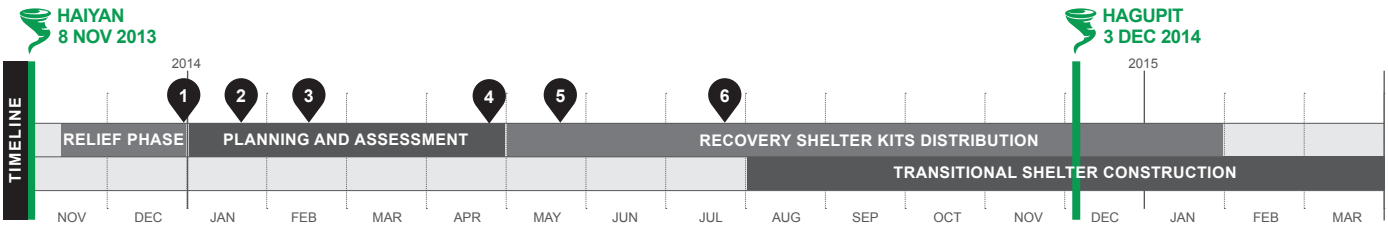
KEYWORDS: Emergency shelter, NFIs, Transitional shelter, Multisectoral, Training, Community participation

CRISIS	**Typhoon Haiyan (Yolanda), 8 November 2013.**
TOTAL HOUSES DAMAGED	**518,878** partially damaged **493,912** totally destroyed
TOTAL PEOPLE AFFECTED	**3,424,593** households (16,078,181 persons).
PROJECT LOCATIONS	566 barangays in 48 municipalities in 6 provinces in Central, Eastern and Western Visayas: **Leyte, North Cebu, Iloilo, Aklan, Antique and Capiz.**
BENEFICIARIES	**19,550** households (Relief phase). **16,585** households (Recovery phase, shelter support, plus 13,450 individuals with awareness and training in shelter and Build Back Safer).
PROJECT OUTPUTS	**19,550 shelter relief kits** (tarps + ropes), 6,313 kitchen sets, 47,875 NFI kits (blankets, mosquito nets, mats). **15,700 shelter recovery kits** and materials for latrine construction. **885 transitional shelters** built with latrines. **160 workshops** on Build Back Safer and 450 carpenters trained and received tools.
SHELTER SIZE	**19.4m²** (size of the transitional shelter).
SHELTER DENSITY	**3.9m² per person** (Based on national average household size of 5).
MATERIALS COST	**USD 400** per household for the shelter recovery and tool kit. **USD 3,500** per household for the transitional shelter (excl. latrine, incl. labour).
PROJECT COST	**USD 460** per household, for the relief phase.



PROJECT SUMMARY

The shelter programme spanned from relief to recovery within an inter-sectoral response. It assisted people across a wide geographical area, with activities such as: material distribution (shelter relief items, NFI kits and shelter recovery materials), transitional shelter and latrine construction, community awareness raising, technical assistance and certified training for carpenters.



1. 31 Dec 2013: **Shelter relief items distribution completed.**
2. Jan 2014: **Shelter recovery strategy developed, market assessments and decision on direct procurement.**
3. Feb 2014: **Shelter kit defined.**
4. Apr 2014: **Beneficiary selection process and Build Back Safer trainings completed.**
5. May 2014: **Temporary shelter design completed**
6. Jul 2014: **Carpenter training completed.**

STRENGTHS

+ High participation and accountability to affected populations.
+ Build Back Safer trainings were well received.
+ Construction trainings to carpenters enhanced their skills and income opportunities.
+ Effective management of beneficiary data.
+ Particular attention and response to vulnerabilities.

WEAKNESSES

- Limited coverage.
- The recovery capacity of communities could have been strengthened.
- Only 50% of beneficiaries actually used the materials received for repairs after four months from the distribution (source: PDM).
- Recruitment difficulties delayed implementation.
- The integrated approach was not implemented very effectively.

SITUATION AFTER THE TYPHOON

For an overview of the situation before and after the disaster, and the national shelter response, see overview A.23 in Shelter Projects 2013-2014 and overview A.8 in this edition.

At first, typhoon-affected families settlement options were classified as follows: (1) remaining in damaged homes; (2) host families; (3) evacuation centres; and (4) formal or informal camps. In an initial displacement survey, close to 90% of evacuees reported their willingness to return home if provided with assistance, demonstrating that resource provision for self-reconstruction could be a quick way of decongesting displacement sites and accelerating recovery. Notably, many families had no legal land title or right to reside where they lived.

Shelter was a priority need both in the relief and recovery phase, followed by livelihoods and food, as shown in a baseline survey conducted by the organization. Particularly, 77% of surveyed households reported that receiving materials for repairs was their preferred solution to shelter needs, followed by daily labour opportunities (19%), longer-term employment (16%) and land tenure security (9%) amongst others.

PROJECT PHASES AND COMPONENTS

Using shelter as an entry point for a wider inter-sectoral approach, this programme covered both the emergency relief phase (mainly with distribution of shelter and NFI kits) and the recovery phase, where the response focused on two major outcomes: shelter – delivered mainly through distributions and technical assistance – and livelihoods, through certified trainings[1]. These further tied into the integrated approach of the response, where target communities benefited from trainings and multisectoral interventions in areas such as WASH, Health and Education.

COORDINATION

The organization was actively involved in inter-agency assessments[2]. The Liaison Officers and Sector Specialists continued to represent the organization at the national, provincial and municipal coordination meetings, wherein sharing of technical information and 4W data[3] facilitated decisions on the nature of responses and operational areas.

TARGETING OF LOCATIONS

Municipalities and barangays (villages) were selected based on organizational tools[4], which used the following formula:

Need = extent of damage x intensity of damage x pre-typhoon vulnerability.

The tools relied upon publically available data, allowing the response team to gain a clear picture of the areas in need and how resources should be allocated. After shortlisting the locations, consultations were held with local authorities due to their local knowledge, as well as using data from the Cluster on other organizations' activities, to avoid duplication of efforts.

[1] Trainings were certified by the Technical Education and Skills Development Authority, http://www.tesda.gov.ph/.
[2] Namely, the Multi Cluster Initial Rapid Assessment (http://bit.ly/2lXnXvv) and Children's MIRA (http://uni.cf/2kB9mFC).
[3] The 4W is an information management tool capturing What activities are implemented, by Whom, Where and When during a humanitarian response.
[4] The Overview of Affected Municipalities (OAM) and the Barangay Prioritisation Tool (BPaT).

The project prefabricated trusses and built transitional shelters.

BENEFICIARY SELECTION

Selection criteria were developed in consultation with community leaders and members and validated by the organization. A participatory and inclusive approach in the selection was adopted to reduce tensions and not to exacerbate existing problems amongst community members, as not all affected households within a barangay could be assisted.

Priority was given to the following groups: the elderly, women, people living with disabilities, female- and child-headed households, internally displaced people and those with totally damaged houses, along with additional vulnerability criteria.

Once compiled, the barangay committees displayed the beneficiary lists for community evaluation and addressed the feedback through several rounds of consultation, to ensure that all were largely satisfied with the process.

PROJECT IMPLEMENTATION AND TEAM STRUCTURE

The operational area was divided into zones where similar activities were implemented, and the same organizational structure was used in each area. The relief-phase blanket distribution was directly handled by the Supply Chain Management and Accountability teams. Then, during the recovery phase, a sector expert (Reconstruction Manager) coordinated three international construction specialists (designated to each zone), who were managing hardware sectoral interventions (shelter/WASH/infrastructure). Each zone had a team of engineers and architects who, based on experience, were assigned responsibility as municipal focal points or technical officers. Each zone had a minimum of six personnel in the shelter team, all reporting to the construction specialist.

Overall, approximately 25 engineers were working in the implementation team for the beneficiary selection process, material distribution, transitional shelter construction and technical assistance phases. Throughout the recovery phase, the sector technical team (both in the field and headquarters) were supported by the Supply Chain Management and Accountability teams. Engineering Design and structural calculations for the transitional shelters were carried out by professional volunteers, deployed by an engineering non-profit organization.

LAST MILE MOBILE SOLUTIONS

The organization adopted an innovative digital technology for the registration and tracking of all beneficiary data for distributions, which provided real-time tracking, remote data collection and management, significantly reducing registration times and inefficiencies, along with systematizing reporting processes[5]. This technology was used to issue a barcoded ID card for each head of household and was adopted for all distributions. The organization had in-house expertise with the system, so it was easier to roll out, build capacity and get the required equipment.

[5] For more information, visit http://bit.ly/1TzqD8K.

LAND OWNERSHIP

The majority of beneficiaries had lived in the same location for many years, in some cases across generations, based on informal agreements. Thus, consultation was held with community members, barangay leaders and beneficiaries, to ensure there would not be threat of eviction. Many landowners expressed no problems with beneficiaries rebuilding in the same location, as long as the structures were not permanent. **Barangay leaders undertook the responsibility** of resolving issues and negotiating on behalf of the beneficiaries, should any land issues arise. **MoUs were also signed with the municipalities, barangays and beneficiaries,** indicating the leaders' responsibilities and that should a beneficiary relocate, they would disassemble the structure and reuse the materials elsewhere. As a result, during the implementation period, minimal complaints were received on land issues.

INVOLVEMENT OF AFFECTED PEOPLE

Affected people were engaged from the assessment up to the evaluation stage. They identified their top priorities and ways of addressing them through participatory workshops. The beneficiary selection and feedback mechanism allowed the whole community to engage with the project processes. Storage spaces for the materials during distribution and construction was provided by the barangay, and the community as a whole was responsible for the safety of the materials. Beneficiaries monitored the progress of construction of their own transitional shelters, ensuring any contracted labour completed the work to standard. Barangay members were allocated the responsibility of monitoring the overall self-reconstruction progress across the villages, for those using the shelter kits.

DISASTER RISK REDUCTION COMPONENTS

Most of the affected population resided in geographical locations which are prone to natural hazards, such as river banks, the coastal belt and areas subject to flooding. As a result, **DRR and climate change adaptation was a focus throughout the response** and local authorities and relevant partners were actively engaged. The Build Back Safer training and messaging were made available at the barangay halls for further reference to all community members, not only direct beneficiaries. The design of the temporary shelter was developed in close consultation with community members, and **pilot shelters were first constructed** directly by the organization, to show best practices and serve as a model to be replicated. Specific guidance was also provided on **land selection and site planning,** to encourage people living in unsafe areas to be informed on how to identify and negotiate for safer locations.

The Build Back Safer principles that were most commonly adopted by the beneficiaries during the repairs were: construction of a simple-shaped shelter (77%), identification of a safe location (71%), use of strong joints (62%), bracing (60%) and good roofing (53%).

Additionally, **a local-level advocacy approach** was used to increase dialogue between ordinary citizens and relevant government entities which provide services to the public, aiming to improve the implementation of national DRR policy at the municipal level.

MAIN CHALLENGES ENCOUNTERED

LOGISTICS AND QUALITY CONTROL. The logistics team was stretched due to the widely spread operational areas and the extent of the shelter response, as well as that of the other sectors' activities. In addition, materials' quality control required extensive commitment and resources. It was initially difficult to find staff with appropriate skill sets to meet these challenges.

SUPPLY CHAIN MANAGEMENT. The slow recovery of local businesses, the high demand of construction materials and climatic conditions affecting the transport route, all impacted the overall delivery of the programme. In addition, a shortage in supply of good coco-lumber and bamboo strips further affected the programme.

AVAILABILITY OF RESOURCES. Although the programme was designed in close consultation with community leaders and beneficiaries, **not all families managed to rebuild their damaged homes** with the assistance provided, mainly because they lacked necessary materials. For those who were unable to build by themselves, **the main challenge was to find the resources** required to hire skilled labour or to purchase additional material. This was mainly due to a lack of alternative funding options, particularly because of the delay of the government's cash assistance, which was originally anticipated to complement the shelter initiative.

CLIMATIC HAZARDS. In December 2014, Typhoon Hagupit made landfall just north of Leyte, followed by series of others storms. **Vital roadways were blocked by landslides, road slips, or washed-away bridges.** The damage to infrastructure, coupled with the staff being deployed to other emergency responses, caused resources to be stretched and generated delays in this programme.

WIDER IMPACTS OF THE PROJECT

In the later stages of the response, the barangay disaster management committee and the trained carpenters were provided further Build Back Safer training, so that they could continue to deliver similar trainings in their communities and monitor the building of houses and structures. **These trainings served as a replicable approach** that could be used in other communities.

Safety measures for construction workers were emphasized throughout the programme, and all staff with access to beneficiaries were briefed on **Child Protection and Prevention of Sexual Exploitation and Abuse** protocols. Community briefings on **contractual obligations** of contractors and workers and **site protection measures** (such as site demarcation to avoid children wandering around the construction) were also carried out, so that there would be a base for community monitoring and mutual accountability. Although new in the communities, it was agreed that this approach would be adopted for future construction activities.

The project included distributions (North Cebu, left) and built model structures for Build Back Safer trainings delivered to communities (right).

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

STRENGTHS

+ High community participation and accountability to affected populations. The exhaustive community consultation ensured that **all voices were heard and responded to.** The feedback received was also used to **refine interventions and take corrective actions** when needed, regarding scheduling of activities, quality of materials and workmanship.

+ The Build Back Safer trainings were well received by all sections of the community, who participated actively and were interested to learn more. Further, carpenters from the community were involved in developing the model structures and trainings, which gave them an opportunity to demonstrate their newly acquired knowledge and skills.

+ Construction trainings provided to carpenters substantially enhanced their skills and their income generation opportunities, as they were certified by a government authority.

+ Effective management of beneficiary data from registration to delivery, monitoring and timely reporting, thanks to the use of the digital Last Mile Mobile Solutions technology, which allowed a streamlined multisectoral response.

+ Particular attention and response to vulnerabilities. For example, latrines were constructed in such a way that privacy and security were guaranteed for all users: no gaps in the lower portion of the walls, provision of locks and within close proximity to individual shelters. During distributions, vulnerable persons, such as the elderly and women with nursing children, were the first to receive provisions.

Items in the shelter recovery kit	Unit	Quantity
Tools 20" or 22" Handsaw, Claw hammer, Tape measure (3m), Shovel, Machete, Hoe or Pick Mattock, Crow bar, Tin snips, Chisel.	pcs	1 each
Gloves	pair	2
Shelter materials 10ft length, 4mm Corrugated Galvanized Iron sheets; 10ft length, 4mm CGI ridge roll, 18" wide; 4", 3" and 2" common wire nails; Umbrella nails, twisted shank; 4"x4"x12" Coco-lumber; 2"x4"x12" Coco-lumber; 1/2"x4'x8' marine plywood.	sheets pcs kg kg pcs pcs sheets	12 2 3 + 2 + 3 2.5 4 12 6

WEAKNESSES

- Limited coverage. As the response targeted only totally damaged houses, entire populations were not reached. On one hand, the needs of the most vulnerable in the selected barangays were largely met, despite limited resources. On the other, **there was the potential for a wider impact** in the communities if the organization had advocated through the cluster for other agencies to support the families who were not reached by this programme.

- The communities' existing capacities were not well identified early on and incorporated into the programme. There were regional variations in the rate of recovery, demonstrating the absorptive and adaptive capacity of different communities and revealing the need for contextual interventions. **This transformative capacity could have been strengthened** through increased collaboration with community members or advocacy with local government and NGOs. This was confirmed in the monitoring and evaluation phases, wherein barangays with community mobilizers had a higher percentage of houses repaired or rebuilt.

- Despite the target beneficiaries having totally damaged houses, **post-distribution monitoring found that only 50% of them had actually used the materials received** to carry out repairs on their homes (four months after the distribution), while the rest mainly stockpiled the materials. Additionally, the majority of materials for latrine construction (for those where works were pending or on-going) were stockpiled or used for shelter repair, whilst a number of beneficiaries who sold latrine materials, used the proceeds to buy additional materials for shelter repair. The organization assumed that the government's emergency cash assistance would facilitate material purchases and payment of labour, though this did not happen in a timely manner. **Increased advocacy with the government (through the cluster) on the complementarity** of responses would have helped.

- The integrated approach was not implemented very effectively, requiring multiple assessments, beneficiary lists and numerous rounds of distributions and community meetings, due to the limited understanding of how to operationalize such approach to meet shelter, livelihood and food security needs. Ultimately, it was not clear how the multisector intervention contributed to overall recovery.

LEARNINGS

- To ensure a timely shelter response, **adequate planning** for the pre-positioning of goods and contracts, **streamlining procurement and administrative processes, and improving distribution systems** must be undertaken, particularly in contexts where disasters are likely to happen cyclically.
- **It is important to allow sufficient time for the roll out of shelter activities,** so that continued technical assistance can be provided to households and **closer integration of shelter and WASH interventions** ensured. Operations could have been more effective if distribution, technical assistance, monitoring and site planning were carried out as a single unit.
- **Managing expectations.** While trying to achieve programmatic objectives, engagement and communication with households who were not selected for support was necessary.
- Cash-based and livelihood programming can enable income generation, which can then be invested in asset building. In this case, **better complementarity of the livelihood programme with the shelter component** would have facilitated the reconstruction efforts.
- In terms of community level cohesion, it was noted that **capitalizing on the "bayaninhan" system of community support and cooperation** was vital to the effectiveness of the programme.

CASE STUDY

PHILIPPINES 2013-2015 / TYPHOON

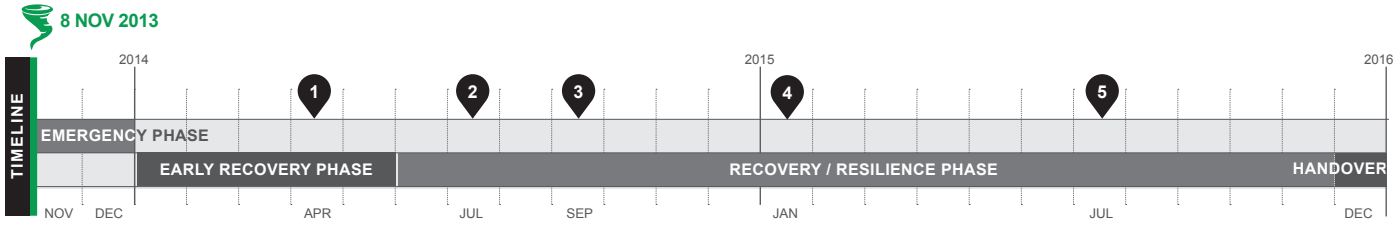
KEYWORDS: Multisectoral, Resilience building, Core houses, Community participation

CRISIS	**Typhoon Haiyan (Yolanda), 8 November 2013.**
TOTAL HOUSES DAMAGED	**518,878** partially damaged **493,912** totally destroyed
TOTAL PEOPLE AFFECTED	**3,424,593** households (16,078,181 persons).
PROJECT LOCATIONS	11 barangays spread across two distinct regions: **Guiuan (Eastern Samar) and Coron (Palawan).**
BENEFICIARIES	**3,197** households (16,209 people).
PROJECT OUTPUTS	**1,028 houses** (668 new houses and 360 repair). **505** individuals trained in hazard-proof construction. **744** houses with improved sanitation.

OTHER OUTPUTS	**41 community managed projects,** which included: an estimated 100,000+ paid labour days for implementing community projects; 49 livelihood groups capacitated; 20 livelihood projects funded; 72 water interventions constructed; 6,000km^2 cultivated for vegetable production; 42 community registered organizations continuing beyond programme life.
SHELTER SIZE	**11.5-23m^2** (sizes varied as beneficiaries could choose from different designs).
SHELTER DENSITY	**Average of 4m^2 per person** (Based on national average household size of 5 and average shelter size of 20m^2. Yet size/densities were ultimately determined by community needs based on direct consultation).
MATERIALS COST	**USD 2,250** per household on average, including a latrine (Most families also contributed salvaged materials or other resources to expand upon the basic core shelter design).
PROJECT COST	**USD 2,550** per household on average.

PROJECT SUMMARY

This community-led resilient recovery programme supported remote indigenous communities on sectors including shelter, infrastructure, livelihoods, WASH and Disaster Risk Reduction. The projects adopted an integrated approach, taking shelter as an entry point for area-based programming and then expanding to a broader programme of community resilience-building. The different offices were given flexibility on implementation within a common principle of maximizing communities' agency. Communities were allowed to manage their own funds, planning and implementation of the activities.



1 Apr 2014: **Households assessments begin**

2 Jul 2014: **First Infrastructure and Housing Projects start**

3 Sep 2014: **First houses completed**

4 Jan 2015: **Livelihood Projects start**

5 Jul 2015: **Water Projects start**

STRENGTHS

+ Adaptable and contextual programme.
+ Communities and households were given full control.
+ Capacity-building and technical advice supported the owner-driven approach.
+ Recovery programming successfully transitioned into development issues.
+ Early projects that served the whole community won their trust.

WEAKNESSES

- The development of new methodologies was not adequately documented.
- Alignment of programmes in distant areas proved challenging.
- Engagement with the local government was difficult.
- Recruitment difficulties delayed implementation.
- The scope of the programme could have been expanded to cover more communities.

Shelters were constructed as a way to build community resilience.

Household mapping exercises were done with communities.

CONTEXT

For an overview of the situation before and after the disaster, and the national shelter response, see overview A.23 in Shelter Projects 2013-2014 and overview A.8 in this edition.

The communities targeted by this programme spread across distinct geographic regions of the country, encompassing a variety of contexts, including regions affected by recurrent extreme weather, marginalized indigenous communities and remote small island communities. All were known to be impacted by climate-induced hazards.

SITUATION AFTER THE TYPHOON

Needs varied by region. The town of Coron was not severely affected, so supply lines were established rapidly and those who could afford them purchased basic items in town. Two months after the disaster, the market was almost back to normal.

The organization conducted a Multisector Initial Rapid Assessment in Coron immediately after the typhoon, determining that 18% of houses were destroyed and 23% were severely damaged. In another early assessment, community members indicated that they were not familiar with resilient construction techniques (due to the significantly less frequent occurrence of typhoons in the western regions). In addition, they were observed to suffer from a number of small-island development issues, ranging from poor access to education, to water shortages and coastal livelihoods threatened by climate change.

Most affected were the coastal fishing communities, whose means and sources of income had been destroyed or damaged to a large extent. Also the physical damage to houses, schools and other communal facilities was greater in coastal communities, which were already in vulnerable positions before the typhoon.

RESILIENT RECOVERY APPROACH

The programme followed a “resilient recovery approach”, using and strengthening available capacities in the communities as much as possible. This focuses on organizing the communities around the common goal of resilience building, beyond strengthening their physical environment (e.g. shelter and infrastructure) and including livelihood groups, new knowledge and increased social capital and organizational capacity.

The approach allows for local people to exchange knowledge and encourages the community to analyse why buildings collapse and how to make them stronger. Ultimately, it encourages programme design to take place together with its “clients”, in order to properly meet their needs – involving communities in meaningful decision-making, engineering shelters together with local builders and not forcing a “one size fits all” design.

LOCATIONS AND BENEFICIARY SELECTION

The geographic regions were chosen strategically, to cover a broad sweep of contexts and to eventually pull in different sources of funding. Within those regions, early assessments helped target a combination of hard-hit and inherently vulnerable communities. **Within each community, the whole population was then targeted** for the integrated resilience approach, with projects such as health centres, water systems, sea walls, etc.

Detailed social and technical assessment determined which portion of the population was more or less affected by the typhoon and, specifically in regard to the shelter programme, those who qualified for housing assistance (destroyed or severely damaged home). Within these, **the final selection was made by applying vulnerability criteria** (defined by community groups during workshops) and voting. This process varied for each community. Broadly, facilitators aimed for the establishment of criteria by the community (e.g. elderly, single headed household, etc.) and then summed the voted scores for each potential beneficiary. However, in some cases, decisions were taken outside of this rigid framework. **Transparency meetings were established** to follow up on selection appeals, among other activities. Contentious selections did occasionally arise, usually due to pre-existing social conflicts within communities. In these cases, inclusive community meetings usually provided the best forum to resolve differences and reach consensus.

PROJECT IMPLEMENTATION

After initial distributions of emergency NFIs through local partners, the organization **focused on developing the resilient recovery programme** for a two year recovery phase, building on Disaster Risk Reduction (DRR) methodologies.

Shelter and community infrastructure needs were identified through early assessment and begun in the first year. This was then broadened out into **integrated programming including Livelihood, WASH, DRR and Health.**

Livelihood programming in particular became very important in addressing the impacts on the fishing communities and building towards longer-term economic resilience – both directly (e.g. Market Hub, Seaweed Cooperative, Rice/Fish/Fuel Resellers) and indirectly (e.g. community labour and logistics for all construction projects, local procurement of materials, boat landings to enhance trade). These projects were all implemented alongside existing activities, during the second year.

The organization was determined to **use a participatory approach**, granting communities agency and sense of ownership over the project outputs. Therefore, **the entire**

Examples of the houses built through the programme. Each household was free to adopt a different design, and manage the construction directly.

programme was designed to be delivered through conditional cash transfers, with community and households taking an active role in managing the projects, while being **supported by capacity-building and technical guidance from the organization.**

In early risk assessments, communities were facilitated to analyse their own risk, develop their own risk-proofing strategies, write their own project proposals and submit them to the organization for review and approval. For some elements of programming, such as infrastructure, communities were even given decision-making power over their total budget, deciding themselves which projects to invest in based on their value for money and impact towards resilience-building.

HOUSING PROJECTS

For the housing project, **a variety of contextual methodologies were trialled** in each different area. In the harder-hit eastern part of the Philippines, the projects focused more on meeting shelter needs, including the implementation of a repairs programme, while in the western areas the lesser urgency allowed for greater diversification of programming and funds.

In one project area, architects from the organization sat with each family and customized each house design based on the beneficiaries' preferences. In another, several housing types were designed based on community consultation, and the beneficiaries could choose from them. All house designs were drawn by a combination of architects and engineers, making sure to **adhere to local vernacular design, while meeting technical standards**. In particular, wind resistance required different standards between the East and West of the country, based on building codes and variance in typhoon wind speed.

Additionally, some areas employed a **cluster-based management of housing projects:** entire groups of families would progress through the cash tranches together, while in other areas beneficiary families were treated separately. This variety was experimental, but ultimately helped to contextualize the project for each area.

Once the projects begun, **communities and households would handle an unprecedented level of responsibility,** managing all the project funds, handling material procurement, record keeping, organizing logistics, hiring and paying their own labour force and managing construction. **A strict upholding of the cash tranche conditions** ensured that beneficiaries would follow the technical guidelines of the organization's engineers and build according to their typhoon resilient standards and designs. In the case of deviation from these conditions, or misuse of the funds, individual projects (or in some cases housing clusters) would have their tranche payments suspended. However, this turned out to be very rare (less than 5% of cases) and successful resolutions were always found.

Additionally, **a master-builder programme (practical training and on-site mentoring) was established,** to support the housing projects through to completion. Experienced local carpenters and masons were trained and contracted to manage housing clusters.

COMMUNITY ENGAGEMENT

To make all this possible, the organization had to support the communities with a **rigorous set of capacity-building workshops**, including on financial literacy, bookkeeping, management, construction and leadership. The organization put significant resources into hiring many community organizers and technical staff, as well as partnering with a local community-development organization to capacitate the staff.

Additionally, **a Transparency Strategy established tools and mechanisms to manage feedback and complaints**

within the community and resolve issues internally, while maintaining accountability. Features included regular **community meetings**, an anonymous **suggestion box** for dealing with potentially contentious issues, and **notice boards** to expand communication of messages (and in some cases even construction receipts) beyond those who attended meetings. When issues arose, they would first be dealt with at community level, and under certain circumstances escalated up, eventually to the organization's regional level, for external judgement. Only a few dozen cases ever reached this level, and supplementary facilitation was provided to avoid potential conflict.

Each project had community-assigned management teams with respective responsibilities, usually including a project manager, construction site foreman and treasurer. Roles were identified based on advice from the engineers and available funds within each project. Later in the programme, some large community infrastructure projects even experimented with **establishing community auditing teams.** This was particularly well received and led to less management problems and smoother running of the projects.

RACIAL DIVISION CHALLENGES

In Coron, indigenous leaders initially refused to work with the migrant communities. In the end, dialogue workshops and suspension of the programme worked to resolve differences and allow access to the whole population. However, this required the organization to adopt a more interventionist approach than usual. This reflects the conflict that sometimes arises between participatory approaches and organizational control.

KEY MESSAGES AND DESIGN SOLUTIONS

Building on the Shelter Cluster 8 Key Messages[1], **design details and safe building location were emphasized and demonstrated** through the construction features and site location of each house, rather than through a single prescriptive design, aiming towards replication by the larger community. In partnership with an international construction NGO, **these features were codified and made obligatory through a checklist** that was distributed to beneficiaries[2]. Compliance was checked through inspection by the primary organization's engineers and linked directly to cash tranche releases.

Following vernacular construction practices, all shelters were designed to be **core houses that could be expanded over time.** Supported by the livelihood components of the project, in time beneficiaries could raise the resources necessary to extend the structure, as is traditionally performed. While it is hard to control the quality of future extensions, the core house itself was designed to resist in the case of another typhoon, leaving each family with a hub from which to build back from.

While a better understanding of resilient building details was established, **the replication of such details outside of the programme was seen to be limited,** in light of the economic circumstances of each family. For example, while some people could afford extra nails to strengthen important connections, few were willing to invest in the relatively expensive bolts.

Community meetings included sessions on how to write project proposals.

MATERIALS SOURCING AND TRANSPORT

Being set in areas where markets were still functioning, **the projects granted responsibility to beneficiaries to procure locally,** according to pre-agreed specifications (included in the agreement between the beneficiary and the organization) **and transport their own materials to site**. By outsourcing the procurement and logistics burden, the beneficiary communities were given more choice and agency over the project and its implementation. This worked especially well in Coron where, spread across remote islands, community management of logistics utilized **local knowledge of the waters and transport routes,** making great savings in costs and efficiencies in the process.

The only point of concern was the **rare occurrence of illegal timber use from local forests.** Because of the superior quality compared to local timber markets, some beneficiaries were occasionally tempted to cut down forest timber, also to save on costs. In the end, this risk was mitigated by coordination with the government forestry department and local administration. The organization played its role by the fast and transparent suspension of projects where such cases arose, and warning against the practice of illegal procurement.

WIDER IMPACTS OF THE PROJECT

Improvements were made in community organization and project management, safety of houses, new and rebuilt community infrastructure, increased knowledge, income diversification and the re-establishment of local businesses. **The involvement of affected people in the programme ultimately enabled the communities to be safer and more resilient to typhoons than before.** The approach also helped communities organize preparedness plans supported by the Local Government Unit, national policies, laws and financing arrangements.

With the appropriate adjustments, and largely based on experiences from this programme, **the organization's Resilient Recovery Approach was used again**, most notably in Nepal after the earthquake of 2015.

[1] See overview A.8 and find the 8 Key Messages online at http://bit.ly/2lANU3F.
[2] Some of the contextually new features introduced to local communities included bolts on major connections (e.g. columns to trusses), bracing and cross bracing in the walls and roof, minimum numbers of nails for each connection, poured concrete pad foundations (as opposed to the less durable timber post foundation used locally), connecting the timber column dry footing to the foundations to withstand wind uplift forces, nailed blocking to fasten purlins to joists, and timber treatment for termite protection.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

STRENGTHS

+ Adaptable and contextual programme that remained relevant in a changing environment, allowed by a flexible funding.

+ Communities and households were given full control over implementation funds and took on much of the responsibilities, allowing them to truly lead and take ownership of the project.

+ The focus on capacity-building and technical advice supported the owner-driven, community-managed, approach to become a success.

+ Recovery programming successfully transitioned into development issues and became the basis for long term community development programming.

+ Winning the communities' trust with early projects that served all, smoothed the way for participation and cooperation later on.

WEAKNESSES

- Time and resources to properly document the development of new methodologies **were not adequately allocated.**

- Alignment of programmes on different sides of the country proved challenging in some areas. Because ultimately the programmes developed quite differently, some systems and structures designed for one context could not be easily adopted for the other.

- Engagement with the local government was difficult, due to their limited capacity and the organization's community-focused, bottom-up, approach.

- Recruitment difficulties early on, specifically in relation to specialized roles such as engineers, delayed critical paths to implementation.

- In hindsight, the scope of the programme could have been expanded to cover more communities without compromising on quality. In balancing the quality vs. scale dilemma, smaller scale interventions were chosen, to maximize impact in the selected communities.

LEARNINGS

- **Conditional cash transfers can be an effective tool** for strengthening the owner-driven approach in shelter construction, while retaining quality control for the organization.
- **Communities can be capacitated to take on more responsibilities in shelter implementation.** Areas such as logistics and procurement can be managed by the beneficiaries, if training is provided and markets are functioning.
- In supporting self-recovery, **shelter programming should be used as a platform to promote broader learning** about resilient construction techniques and look beyond traditional shelter outputs.
- **Resilience Programmes require "smart baselines"** in order to evaluate beyond the programmatic outputs. Baselines should include elements of social assessment and aim to reflect knowledge, attitudes and behavioural change.
- Elements of typhoon-resilient house design will not be replicated if the materials go beyond the usual budget of homeowners (e.g. bolts vs. nails). **Sometimes, weaker (yet cheaper) alternatives should be used, in order to aspire towards replicability** and ultimately engender behavioural change.

The programme led to a variety of community-wide infrastructure projects and communal facilities, led by the communities themselves.