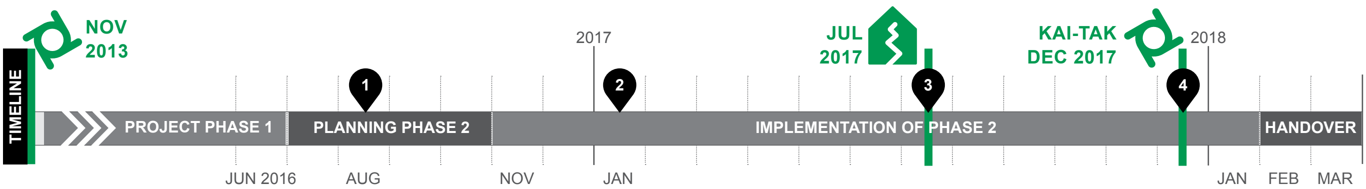
CASE STUDY **PHILIPPINES** 2016–2018 / TYPHOON HAIYAN

KEYWORDS: Shelter repairs, Structural assessment, Capacity-building, Cash and Technical Assistance

CRISIS	Typhoon Haiyan (Yolanda), 8 Nov 2013
TOTAL PEOPLE AFFECTED	**3,424,593 households** (16,078,181 persons)
TOTAL HOUSES DAMAGED	**1,012,790 houses** (518,878 partially damaged and 493,912 totally destroyed)
PROJECT LOCATIONS	Ormoc, Leyte island
PROJECT BENEFICIARIES	**516 households** (approx. 2,580 individuals)
PROJECT OUTPUTS	**516 shelters repaired**
SHELTER SIZE	Varied, as only a core section of the house was repaired
MATERIALS COST	USD **302** per shelter (materials only)
PROJECT COST	USD **464** per household

PROJECT SUMMARY

The project supported 516 typhoon-affected households with shelter repair assistance. With lessons learned from the first phase of the project, which started shortly after the typhoon, the second phase gave homeowners and technical staff options to use cash grants effectively, in order to improve one core room of the existing house to withstand future forces such as earthquakes or strong winds.



1. Aug 2016: **Review of the shelter repair assistance approach in Phase 1.**
2. Jan 2017: **Coco lumber moratorium declared by the Philippines Coconut Authority, lasting three months.**
3. Jul 2017: **6.5 earthquake hits the city of Ormoc, displacing over 4,000 households.**
4. Dec 2017: **Tropical storm Kai-Tak hits large areas of the Visayas, causing landslides and flooding.**

STRENGTHS

+ The project was able to learn and adapt from its first phase.
+ Cost-effectiveness.
+ Households were always active agents in the implementation.
+ Clear and transparent beneficiary selection process.
+ Conveyed the importance of prioritizing structural improvements.

WEAKNESSES

- Cumbersome and lengthy procurement processes.
- The budget ceiling limited the interventions.
- Limited technical capacities available at field level.
- Limited exchange of lessons learned.
- In some cases, the option-based approach was compromised.

Many houses in the target areas were damaged to varying levels due to the typhoon. The project provided an option-based repair approach to upgrade all the key components of one core room of the house.

For more information on the situation and shelter response after Typhoon Haiyan, see overview A.23 in Shelter Projects 2013-2014 and A.8 in Shelter Projects 2015-2016.

SITUATION IN ORMOC

Ormoc is exposed to geological and climate-related hazards such as earthquakes and storms. A high reliance on farming and agricultural labour results in uncertain household incomes that vary with seasonal fluctuations and market prices. Insecurity of land tenure, low quality housing and inadequate access to water and sanitation also contribute to households' vulnerability.

SITUATION AFTER HAIYAN

Typhoon Haiyan affected most of the population in Ormoc. Most houses were constructed with light materials (i.e. timber and woven split bamboo) and the structures did not incorporate adequate bracing or other disaster-resistant construction techniques, with roofs of thatch or light corrugated galvanized iron sheets (CGIs). Houses built with concrete and masonry fared better, but most of the rest suffered varying degrees of damage. Over half of the houses were partially repaired quickly, to make them habitable (e.g. damaged roofs were covered with tarpaulins), but remained susceptible to future storms.

Most houses built in lightweight materials failed during the typhoon and were quickly repaired to be re-inhabited by the affected households.

PROJECT STRATEGY AND GOALS

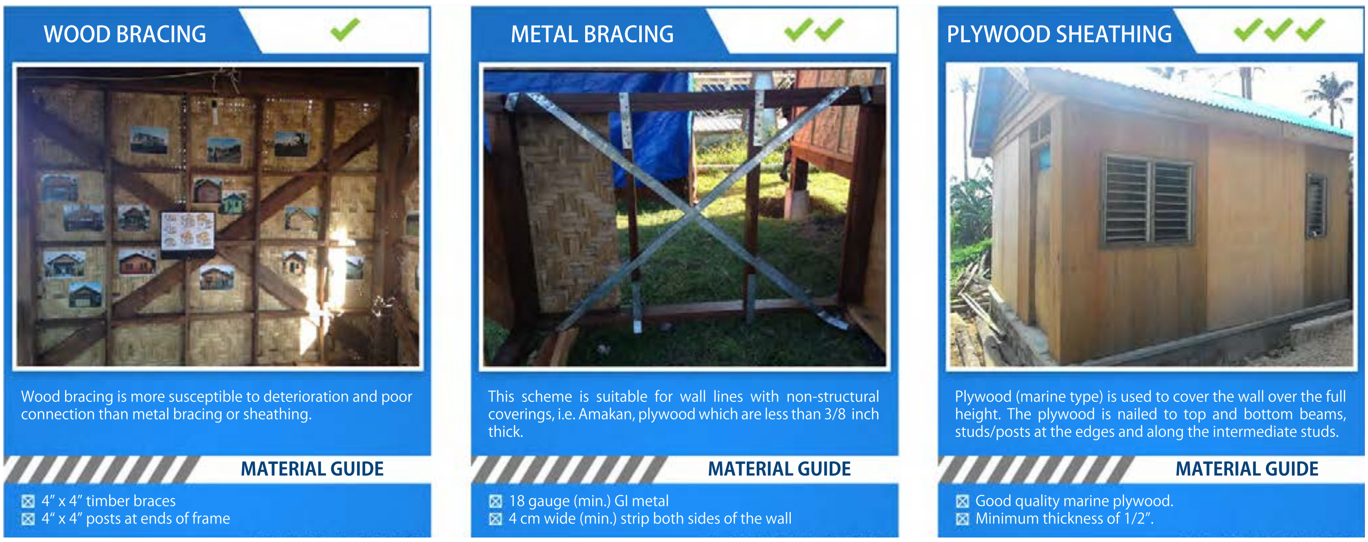
The programme was implemented by a large national organization supported by an international organization and in partnership with a technical NGO. It consisted of two main phases:

1. Relief and early recovery, 2013–2016;
2. Recovery, which started in July 2016 and included shelter repair assistance and core housing construction. This case study focuses on the shelter repair component of this phase.

The shelter repair project aimed to support **households with only partially destroyed homes** or who had been able to partially repair or rebuild their shelters since the typhoon. Often, households lacked both the financial means and the technical knowledge to rebuild their home whilst making them resistant to storms in the future. The shelter repair assistance addressed this gap, by providing material and financial support, as well as technical guidance. This approach allowed to reach more households by investing a smaller amount compared to core shelter construction.[1]

Due to organizational policies, **the budget available for housing upgrades was limited** to roughly USD 485, which was not enough for a full, code-compliant, structural retrofit. However, in prioritizing key structural upgrades, the aim was to reduce the likelihood of damage or collapse in moderate earthquakes or typhoons. With this objective, the organization partnered with an NGO with experience in disaster-resistant housing, to revise and improve the shelter repair component from the first phase. **The approach was to strengthen a core room instead of different elements in the entire house.** In the core room, each component – from the foundation to the posts, walling, truss and roofing – was enhanced according to minimum standards defined by the partner NGO, which developed technical guidelines specifically for this project.

[1] For example, see projects implemented in the country in previous editions: A.27 in Shelter Projects 2011-2012, and A.09, A10 and A.13 in Shelter Projects 2015-2016. Project costs per household ranged between USD 1,000 and 2,600. For this project, the core house had a cost of USD 1,367 (almost three times as much than the repairs cost).



A partner NGO, which specialized in disaster-resistant design, developed guidelines with three steps for all components of a house to be repaired.

The partner evaluated all the houses repaired through the project, confirming that all had been strengthened after the intervention.

Cash was distributed in two tranches to achieve the repairs, following technical assessments of the quality of the works conducted.

OPTION-BASED APPROACH

Shelter repair needs in the target areas were very diverse. Given that many households had already started repairing their homes without technical guidance and because of the limited funds available, **an option-based approach was used.** The guidelines listed three different options for each component of the house, each representing an improvement in terms of resistance compared to the previous one. Instructions on minimum material requirements, minimum dimensions and connection methods were included. The option-based guidelines and decision-making tool made sure **all components of the core room were at least upgraded to the level of the first option** before any further investments could be made. With this approach, households had less flexibility to decide how to use the assistance, but the decision-making process was more transparent and the assistance more standardized.

TARGETING OF LOCATIONS

After two years since the typhoon, targeting could be more detailed and accurate compared to the relief phase. Locations were chosen based on the Ormoc City Government's list of barangays[2] with most damaged houses, cross-referenced with those where no NGOs were reported to be active. The six barangays selected were then visited again. The barangay officials were interviewed and for each barangay a household survey was carried out in one sample purok.[3]

BENEFICIARY SELECTION

Trained volunteers conducted a household interview and an initial assessment of the house damage. After that, a project engineer visited all affected houses to better define the damage category. The engineers' assessment was used to allocate houses to core shelter or shelter repair assistance, depending on the level of damage (total or partial respectively).

Data was analysed and the selection was based on a score calculated from 14 vulnerability criteria. Scores were compared across all six project barangays and a cut-off was defined, based on available resources.

Lists with the results were posted in the communities, along with feedback boxes and instructions on the process and the different mechanisms to submit questions or complaints.

Once complaints were followed up and the vulnerability scoring data was cleaned, final beneficiary lists were posted again. It was found that while the initial assessment by volunteers raised concerns among some community members, the engineers' assessments were more widely accepted.

[2] Barangays are the smallest administrative divisions in the Philippines.
[3] Puroks are subdivisions of a Barangay (i.e. zones).

COMMUNITY ENGAGEMENT

After initial coordination meetings with the city government and barangays, a general assembly session was publicly announced and held in all six project barangays. This was the official entry point for the project team in the barangays and allowed to discuss the household survey and beneficiary selection procedures, as well as community engagement opportunities. For the whole recovery programme, **the organization established Barangay Recovery Committees** at the outset of a project. These committees were usually comprised of purok leaders and other key community leaders or representatives of specific groups. The committees assessed the impact of the typhoon on the communities, defined households' vulnerabilities and targeting processes, accompanied the household surveys and other assessment activities. The committees remained active over the entire duration of the project, holding regular monthly meetings with project staff.

PROJECT IMPLEMENTATION MODALITIES

The project team was composed of 20 staff, including three engineers, community mobilizers, logisticians, finance officers, database officers, as well as other office staff. Two international staff (a construction delegate and a field delegate) supported the team.

Similarly to the first phase, **the repair assistance was provided through a cash grant** – distributed to the households by a service provider in two tranches (60% and 40%) – plus the distribution of CGI roofing sheets and the support of a construction team to implement the works, supervised by the project engineers. The main differences were the following:

- In Phase 1, the number of roofing sheets per household was standardized to ten pieces and there were two cash grants depending on the level of damage. However, as this distinction was very difficult to make in the field, **under Phase 2 the total assistance provided was the same for all households,** while the number of CGI sheets was determined by the engineers. If more or less than ten sheets were required, the corresponding amount was deducted from or added to the cash grant.
- While in Phase 1 cash was distributed per barangay leading to monitoring challenges (as many households started works at the same time), **in the second phase cash was given out in batches of about 10 households.** This allowed to accompany the process more closely.
- Due to the small batches, a different service provider was used to distribute the grants. **Distributions were arranged in the branch office of the service provider** in Ormoc City, so beneficiaries had to travel there. For elderly persons or those who had trouble making the trip, the grant was given to an authorized person.

TECHNICAL ASSESSMENTS, PROCUREMENT AND CONSTRUCTION PROCESS

Engineers conducted detailed technical assessments for each household and developed a proposal for the repair intervention, including a bill of quantities for materials to be purchased. **The engineers ultimately decided on the best measures** to be implemented with the limited budget. While most households understood this, it often **took several visits and lengthy discussions before a proposal was finalized** and accepted by both parties.

With a finalized repair proposal, a beneficiary household was allocated to a batch for cash distribution. The first tranche was distributed, and the householder was instructed on which materials to purchase.

Once the materials were delivered to the construction site and checked by a monitoring volunteer, the project team gave approval for the payment of the second tranche.

Only when all materials had been purchased according to the proposal, did the engineers dispatch the CGI sheets and – if the house did not have a functional toilet facility – the latrine materials.

Before the constructions started, **a briefing session was organized** together with the carpenters, the households and the monitoring volunteers. One carpenter and one helper were allocated to each house for five days.

Engineers visited each of the construction sites when repairs where halfway through completion and upon request of the carpenters or the volunteers.

Once the construction was finished, the engineers reviewed the repairs and signed the checklist, or instructed the carpenters to make specific alterations. Labour payments to the construction team were only made after the final approval of the repair works.

TECHNICAL SUPPORT AND EVALUATION

The partner NGO carried out monthly visits to provide technical support and build the capacities of the engineers, the local carpenters and the volunteers. This was achieved through ongoing support and on-the-job training during the preparation of repair proposals as well as before, during and after the completion of the repair works.

According to the final report, **all houses were structurally strengthened,** with an estimated 60 per cent considered to be fully reinforced, while the remaining 40 per cent required further improvements. This was observed in larger houses, where the funds distributed were stretched more, or in houses which were partially timber and partially masonry, requiring more expensive connection techniques. However, through the orientation sessions and information materials, those households were also given knowledge about how to address these issues and how to continue strengthening their home.

Technical support was provided to all households during construction, and on-the job training given to project engineers.

MAIN CHALLENGES

MORATORIUM ON COCO LUMBER. A three-months nationwide moratorium on the cutting of coconut trees in early 2017 affected the procurement of the main construction material unexpectedly. For around two months, coco lumber was barely available at the local market and the price increased significantly. While exceptions were made and permits to cut were still issued, the situation remained unpredictable and many actors in the field were unable to supply beyond the three months of the moratorium. Due to the organization's extremely slow and inflexible procurement system, the project was considerably affected. The only feasible approach at the time was to start procuring materials through the international partner.

LABOUR SHORTAGES. Partly related to the above, many carpenters chose to search for other employment opportunities. This was an ongoing challenge, but the project team was able to cope by hiring trained carpenters from barangays targeted in the first phase.

NATURAL HAZARDS. In July 2017, a 6.5 earthquake hit near Ormoc City, affecting 27 barangays and 4,130 families. While the team continued working, activities were heavily affected for three weeks by interrupted power supply, limited availability of construction materials and by many community members and volunteers being occupied with response activities. Towards the end of the project implementation, in December 2017, Ormoc also experienced several days of heavy rains and subsequent heavy flooding due to a tropical storm. Large areas of the city were flooded, and again project activities were affected for around a week. However, during both events, **damage to newly constructed or repaired structures was minimal,** whereas materials stored near construction sites were damaged and had to be replaced.

WIDER IMPACTS OF THE PROJECT

The project trained and engaged local carpenters in the repair works. Besides the employment opportunities for the community members throughout the project, the capacity-building activities benefited beneficiaries and the wider community beyond the project. At the end of the training, trainees who passed the examination successfully received a national certificate in carpentry. For many this represented the first formal recognition of their skills. Accordingly, this training was welcome, and feedback received was overwhelmingly positive. The certification of the successful trainees **increased their chances of finding better employment opportunities.** Some carpenters trained in Phase 1, for instance, found jobs with better paying organizations, while others left for jobs abroad, so the implementing organization had to train more workers.

The project was cost-effective, especially if compared with core house construction.

STRENGTHS, WEAKNESSES AND LESSONS LEARNED

STRENGTHS

+ The project was able to learn and adapt from its first phase and it retained most of the team. After Phase 1, it became clear that no "one size fits all" solution could be used to repair homes years after the disaster. In order to address this, **the project identified an option-based approach.**

+ Cost-effectiveness. The project was able to maximize the resources by placing emphasis on technical assistance of a core room within the houses. This allowed to reach more households within the limited resources available, which were about a third or less compared to other core shelter projects.

+ Although the project included some restrictions over the use of the grants, **the affected households were always active agents** in the implementation and this stimulated a sense of ownership.

+ Clear and transparent beneficiary selection process, which used a scoring methodology and involved the community to identify and address feedback and complaints.

+ The project succeeded in conveying **the importance of limiting resources to structural improvements** of one core room of the house. Other households in the area also copied this approach.

WEAKNESSES

- Delayed procurement (especially for CGI and latrines) due to cumbersome and lengthy processes within the national implementing organization.

- The budget ceiling per house imposed by the organization limited the interventions that could be conducted.

- Limited technical capacities available at field level. For example, assessments conducted by volunteers were in some cases not accepted by the communities.

- Limited exchange of lessons learned with other actors, including between project partners.

- In some cases, the option-based approach was compromised due to the following: i) large houses, resulting in more connections and structural items; ii) timber-masonry houses, requiring more expensive techniques; iii) remote locations, which made consultation with the homeowners and supervision of construction more difficult; and iv) limited time available for the engineers to design the last two batches of repairs within a barangay.

This picture shows a house before and after the intervention. All targeted shelters were structurally strengthened, with a high involvement of the affected people.

LESSONS LEARNED

- **Avoid setting a fixed budget per household,** instead provide homeowners with the full budget needed to completely strengthen their home. In this context, communities understood this logic and did not feel slighted that some households had more than others.
- **Engage more engineers** so they are responsible for fewer houses and can focus more time on monitoring construction.
- **Budget for good-quality construction materials.** The project used exclusively coco lumber, including for structural elements, while local hardwood should have been used instead.
- **Develop simple tools** – such as checklists – that homeowners and community-based volunteers can use to assist in monitoring construction, **and provide incentives for verified safer houses.**
- **Include information on maintenance in the training** module for homeowners and volunteers, and **provide information on housing upgrading** to achieve a full retrofit, for examples through leaflets or brochures.