A.23 Philippines – 2013 - Typhoon - Overview

Overview

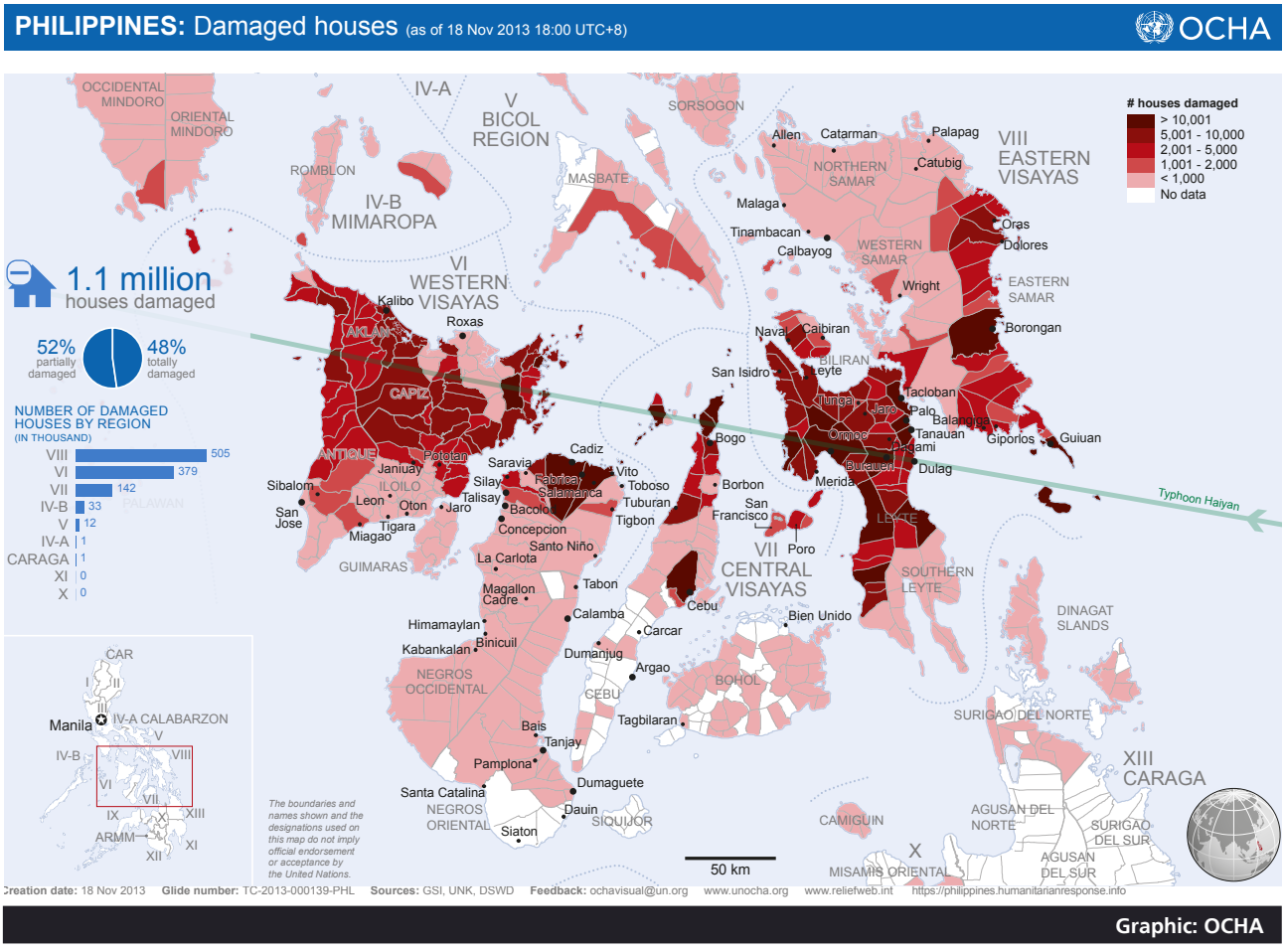
Emergency: Typhoon Haiyan (Yolanda), Philippines.

Date: 8th November 2013.

Impact: 1.12 million houses damaged. Over 4 million people displaced.

Summary of emergency:

Typhoon Haiyan (locally known as Yolanda) was one of the largest typhoons ever to make landfall, and the deadliest in the history of the Philippines. It brought unprecedented levels of damage to a vast area of the country, affecting more than 10% of the population.



Situation before the disaster

Philippines is a lower-middle income country that is highly prone to volcanic, tectonic and climatic disasters. Averaging more than 20 typhoons per year, the country has a well-developed disaster response capacity, though Typhoon Haiyan was exceptionally severe.

The country was still recovering from Typhoon Pablo (December 2012), the Zamboanga conflict (September 2013) and the Bohol Earthquake (October 2013).

Much of the affected rural and coastal population is highly dependent on fishing and coconut farming for their primary livelihoods. Land tenure is a major issue, with the majority of people living with varying levels of formal or informal tenure arrangements on other peoples' land.

Emergency

Preparation and early warning systems led to the evacuation of 800,000 people. However, with sustained wind speeds of over 235km/hour, gusts over 300km/hour and a tidal surge of up to five metres in some areas, over 6,000 people lost their lives, and over 25,000 were injured.

One-hundred-thousand people remained in evacuation centres, and many airports, seaports, roads and bridges were rendered unusable, leading to substantial logistical and transport issues.

Given the severity and scale, Haiyan was designated as a Level 3 disaster by the IASC.

Damage

Haiyan left a swathe of damage from Leyte and Samar in the east of

the country right through to Palawan in the west. Over 1.1 million houses were damaged in the 100km corridor path, with more than 50% of these totally destroyed. An additional 300,000 houses were damaged outside of the 100km corridor.

Damage levels and typology varied greatly across the affected areas. Some areas were densely urban or peri-urban, comprised of a mixture of timber and masonry single- and multi-storey constructions such as in Tacloban, Guiuan and Ormoc. Other areas were remote, isolated island and mountain communities, with primarily single-storey timber or bamboo-framed huts. Informal settler communities by waterways were some of the most heavily affected, due to storm surges.

Displacement

Over four million people were displaced by the typhoon, with many taking initial refuge in emergency evacuation centres and larger public facilities. Some evacuated to safe areas including Manila and Cebu.

Over the coming months many found themselves living in small tent cities, government-managed bunkhouses (emergency barracks), or with host families, though the majority remained on-site, living in self-made makeshift shelters.

A short time after the initial disaster a "No Build Zone" (NBZ) of 40 metres from the coast was declared across the affected area, leaving more than 200,000 families facing permanent relocation.

Shelter strategy

The Philippines' Humanitarian Country Team Strategic Response Plan's overall goal was to ensure that 'Communities and local governments recover from the disaster, build back safer and avoid relapses while strengthening resilience'.

The Shelter Cluster strategy was developed within the first month, in consultation with Cluster partners and the Department of Social Welfare and Development (DSWD – the Government lead for the shelter cluster). Two objectives were formulated:

- Provide immediate, life-saving emergency shelter and NFIs to 300,000 of the most vulnerable households.
- Support for self-recovery to 500,000 households through incremental housing solutions using consultative and participatory processes.

A variety of recovery intervention types were proposed: the supply of materials for roofing and framing, salvaging lumber and debris for re-use, training of skilled and unskilled labour, awareness-raising in safer building practices, technical assistance, and cash-based programmes.

The overall aim for the Shelter Cluster was to promote self-recovery solutions and ultimately owner-driven reconstruction practices. This resulted in predominately the provision of shelter repair kits in the first year.

As the emergency phase receded, the Shelter Cluster consulted with organisations and government counterparts to develop recovery guidelines that advocated for prioritising permanent solutions, with adherence to key principles, and parameters around safety, adequacy, appropriateness and accessibility, where possible.

These Recovery Guidelines emphasised that temporary assistance in high-risk areas, where allowed, should include preparedness and evacuation plans.

The guidelines also used the Right to Adequate Housing as one of its underlying principles, and organisations were encouraged to ensure that assistance was provided regardless of tenure status.

Given the early Government announcement of a proposed 40m NBZ, the Shelter Cluster worked with the CCCM, Protection, WASH, and Early Recovery & Livelihoods Clusters in the development of three HCT endorsed inter-cluster advisories on:

- Recommended minimum standards for bunkhouses.
- Standards for relocation to transitional sites.
- NBZs to be determined by hazard mapping as opposed to an arbitrary 40m measurement.

Advocacy around durable solutions both in situ and in resettlement sites continued throughout the response, especially around themes of building back safer.

Response phases

In the first 10 months 570,000 households were provided with emergency shelter, and 160,000 households were provided with a 'durable roofing solution'.

Funding and material constraints meant that at the time of publication approximately another 140,000 households will hopefully receive a shelter recovery solution (minor/major repair kit, core shelter or permanent house), and thus a total of 300,000 households will hopefully be assisted - 60% of the original target.

Future developments and challenges

Disaster-resistant construction knowledge and practice remains low amongst much of the affected area. High background poverty levels, land rights' issues and poor enforcement of building regulations have combined to create a building culture of low quality construction.

Changes in dominant building materials, from timber and bamboo frames with 'nippa' thatched roofs and woven bamboo walls to materials such as plywood cladding, masonry walls and CGI roofing have occurred without corresponding changes in technical construction knowledge, increasing the risk of catastrophic failure when disasters strike.

Global warming is likely to increase the intensity and frequency of storms, whilst population growth and increasing urbanisation are predicted to increase vulnerable urban and peri-urban populations.

This, combined with poor building practices, may result in an increased risk of future displacement. Addressing these increasing risks in the housing sector remains a major challenge for the Philippine Government and other organisations.

A.24 Philippines – 2013 – Typhoon Haiyan

Case study

Keywords: Household items; Construction materials; Transitional shelter / T-shelter; Training.

Emergency: Typhoon Haiyan (Yolanda), Philippines.

Date: 8th November 2013.

Damage: 1.12 million houses damaged.

People affected: Approximately 14 million affected, 4.1 million displaced.

Project location: Tacloban, Santa Fe and Tanauan Municipalities in Leyte.

Beneficiaries: 16,079 households.

Outputs: 16,079 Shelter kits were distributed (90% complete as of October 2014).

Ocupancy rate: To be evaluated.

Shelter size: Large kit/Roofing kit: 12 x 16ft (3.65m x 4.88m); Small kit: 12 x 12ft (3.65m x 3.65m). Partial kit (70%) was also provided.

Cost per shelter: Large: 18,500 Philippine Pesos (PHP) (US$ 413); small: 16,700 PHP (US$ 373) ; roof kit: 10,300 PHP (US$ 230). Transport and labour costs: 700 PHP (US$ 16) per shelter.

Project description:

The project addressed the need for temporary shelter in the municipalities of Tanauan, Santa Fe and Tacloban through the provision of four types of shelter kit based on the degree of damage to a house. The project prioritised households living in inadequate shelter conditions and with low self-recovery capacity. The organisation supported self-recovery through "Build Back Safer" trainings conducted before shelter kit distributions.

Emergency timeline:

[a] 8 November 2013: Typhoon Haiyan hits. **[b]** Heavy rains affect those in makeshift shelters. **[c]** July: Typhoon Glenda. Some evacuations in Tacloban.

Project timeline [number of months]:

[1-3] Planning phase.
[4] Implementation in Santa Fe.
[5] Household assessments completed. Distributions completed in Santa Fe.
[6] Distributions in Tanuan completed.
[7] Distributions in Tacloban finished.
[8] Project completed and final evaluation.

Strengths

- ✓ The decision to produce coco lumber ensured supply early on. The switch to local lumber suppliers meant distribution goals were surpassed.
- ✓ Partnership agreement with a second organisation meant more components could be provided in the shelter kit.
- ✓ High capacity national staff allowed for rapid response in assessments and distribution.
- ✓ WASH and Shelter was prioritized from the start.
- ✓ The local economy was stimulated through the cash-for-assets initiative to process fallen coconut trees into lumber.

Weaknesses

- × Coordination with local government could have been stronger. The organisation had to revise beneficiary lists when the local government began duplicating the provision of materials.
- × Shared organisational logistical pipelines led to conflicts and breakdowns. The Tacloban port was functioning at 20% capacity in the months following the typhoon and greater coordination would have helped to mitigate problems of delays.
- × The local market for coco lumber recovered quicker than anticipated, but heavy investment in milling and processing meant a slow transition to purchasing from suppliers. Production could have sped up if the switch had been quicker.

Shelter kit vouchers were handed out during the training sessions. Kits were then delivered three days later. Photos: Rebekah Price.

Situation before the disaster

In Region VIII, the region hardest-hit by Haiyan, the poverty rate had been worsening and was 20 percentage points higher in 2012 than the national average of 25%. The lack of secure access to land was closely linked to poverty, with roughly 32% of the region's population living in informal settlements.

A Shelter Cluster and REACH Rapid Assessment reported that over half of the population of the area had been living in dwellings that offered little protection from climate hazards, with 24% living in 'nipa' huts (huts with roofs made from leaves from the nipa tree, sewn together over bamboo sticks) and around 60% in timber or timber and concrete houses.

Situation after the disaster

According to the Shelter Cluster and REACH Rapid Assessment, 13% of all homes were classified as totally destroyed while 29% experienced major damage and 37% partial damage (79% in total).

Despite rapid progress made by the affected population with the support of the government and the humanitarian community, an estimated 1.27 million people in Leyte were still without durable shelter by July 2014. Of the homes that have been repaired, many will not be able to withstand heavy rains or major storms in the coming months.

Shelter strategy

A Damage Loss and Need Assessment (DaLA) led by the National Economic and Development Authority (NEDA) and supported by the Shelter Cluster, was completed in December 2013. The conclusions recommended supporting a self-recovery approach for rapid recovery.

The organisation was actively involved in the Shelter Cluster in Region VIII and regularly met with municipal mayors and 'barangay' (village/community) captains.

The shelter design was informed by the Cluster "Build Back Safer" guidelines.

Project implementation

After an initial distribution of emergency shelter materials the organisation decided to adopt a project methodology of shelter kit distribution coupled with Build Back Safer (BBS) training.

After identifying areas for intervention, the organisation met with barangay captains and committees to discuss the shelter distribution process and present the project's activities. Barangays are the smallest administrative unit in the Philippines, equivalent to a village.

Following sensitisation, blanket household assessments of each community were made using tablet computers and a software application designed by the organisation. The assessments determined which type of kits a household would receive.

The lists of beneficiaries were distributed to the barangay captains three days before the BBS trainings began, with teams of mobilisers on motorcycles dispersing information about training dates. A complaints desk was set up during selection, distribution and trainings. Complaints about exclusion based on vulnerability criteria led to re-assessments being made by the organisation, and inclusion of new beneficiaries if they met the criteria.

The trainings were conducted at a central location within each barangay, with shelter kit vouchers distributed during the trainings. An order form for each beneficiary was created and sent to the warehouse to ensure that trucks were loaded with the correct kits on the day of each distribution.

Shelter kits were distributed three days after a training occurred, to give families time to organise the pick-up of their kits. On collection the beneficiary checked the materials against the order form created and signed an invoice to confirm reception.

Evaluations were conducted two to three months after the distributions, with the results currently being processed in September 2014. Household survey tools were used to determine how effective the response had been in targeting vulnerable households, differences between inland and coastal barangays, and the degree to which BBS trainings had been effective.

Beneficiary selection

The organisation followed the Shelter Cluster guidelines on vulnerable beneficiary selection and delivered 15,000 shelters to the most vulnerable households (determined by gender, age, income, household size, etc.) and households with the most damage to their homes.

A shelter built from the kit. The high-specification plastic sheeting could not be sourced locally and had to be imported. Photo: Rebekah Price.

Coordination

The organisation worked as part of the Shelter Cluster, helping to identify gaps in the humanitarian response, and coordinate resources accordingly. The organisation developed a specific partnership with one other INGO in order to cover a larger area and to take advantage of the other organisation's supply of Corrugated Galvanised Iron (CGI) sheeting.

Some duplication occurred when the Department of Social Welfare and Development managed to source CGI that had been very hard to obtain and did not wish to delay its distributions any longer. Beneficiary lists had to be revised accordingly.

The local government provided crucial support to the project. Mayors offered covered spaces for sawmills to operate and for processed lumber to be stored.

Technical solutions

The shelter kits were designed to be flexible in order to meet beneficiary needs. Four different kits were designed in response to different levels of damage:

- Full Kit (3.65m x 4.88m) – for families of more than three people.
- Small Kit (3.65m x 3.65m) - For families of three people or less.
- 70% Shelter Kit (for damaged houses).
- Roof Kit only.

The kits were reasonably light and most households were able to transport the kits from the central distribution point back to their plots without assistance.

For those who were not able to carry the shelter kit, the community always found a solution to help them get the kits home.

The shelter kit contents were designed by the organisation's technical advisor, with the Cluster concentrating on coordinating BBS messages rather than standardising shelter designs.

A small number of beneficiaries have used the kit to build structures for business use (52 out of 2,900 beneficiaries in Tanauan). Around 7% of beneficiaries in Tanauan sold the kit, using the cash to buy medicine, food, or other items.

Disaster Risk Reduction (DRR)

There were eight key Build Back Safer messages (see poster).

The training consisted of one-day shelter workshops, co-hosted with the Philippines Department of Social Welfare. In the morning, local and foreign engineers provided participants with lessons on house shapes and ratios as well as how to build different parts of the structure, such as the foundation and roofing.

In the afternoon, the engineers demonstrated these concepts with real wood and nails, and teams of trainees were afforded the opportunity to practice what they had learned by producing scale-model houses.

Barangay captains and engineers were given a checklist to determine if Build Back Safer techniques were being incorporated into the construction of the shelters. No separate follow-ups were made by organisation technical staff and a full evaluation of construction quality has yet to be made.

Materials

CGI for roofing was not readily available in the months following the typhoon. According to the Emergency Market Mapping & Analysis (EMMA: see *Shelter Projects 2010,* A.13) of CGI undertaken in January 2014, constraints on CGI supply were caused by damaged ports and the disruption of transport systems, something which meant that even pre-positioning might not have increased supply.

The shelter kit was composed of coco lumber, various nail types, plastic sheet, CGI roofing, a tool kit, and a fixing kit (high tensile wire and a roof sealant).

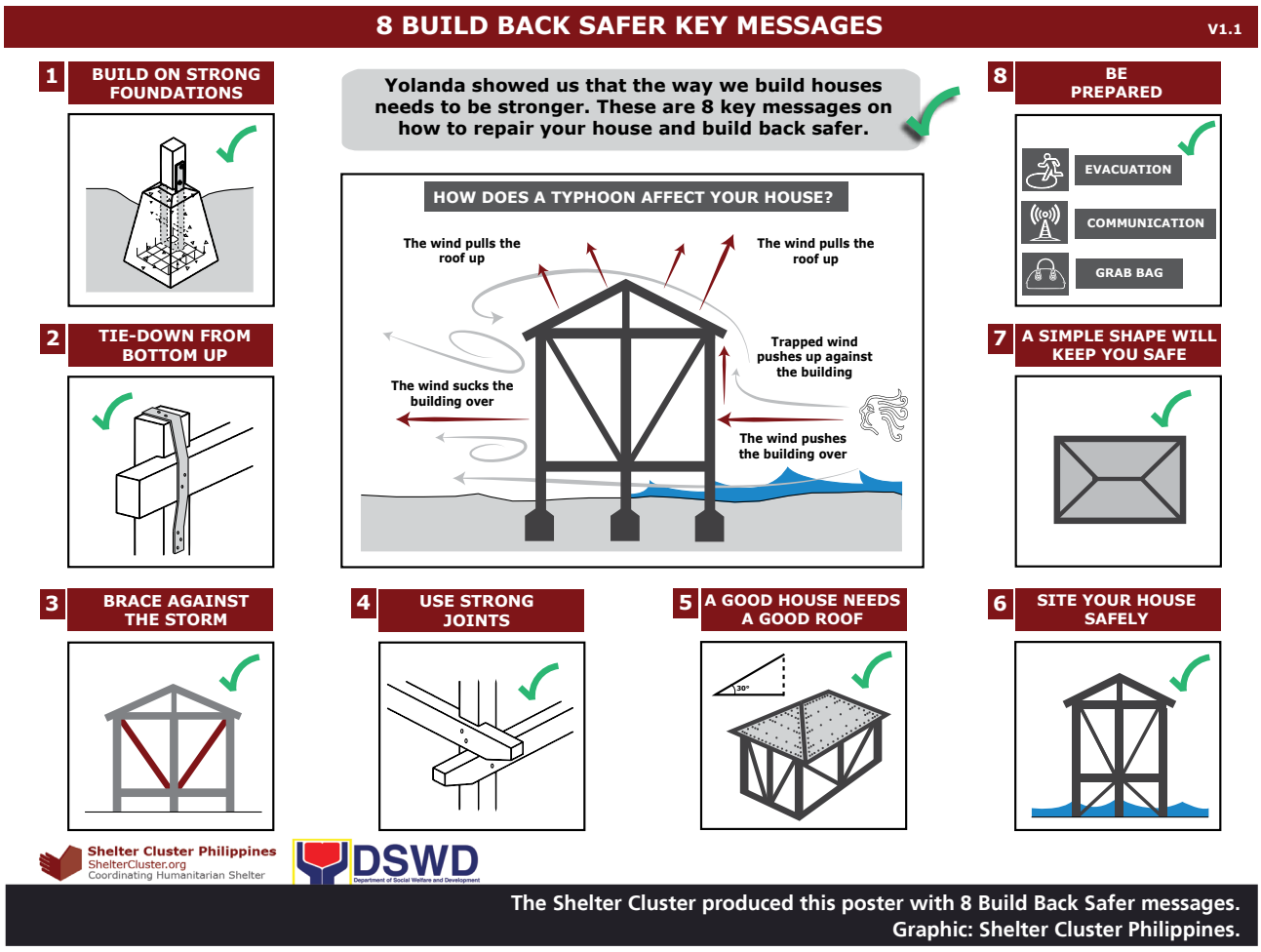
The typhoon resulted in 33 million coconut trees being damaged or destroyed. This provided a huge, salvageable resource for construction materials.

Coco lumber is a familiar construction material, though houses built with coconut lumber are normally seen as temporary. Households will eventually use other materials when building more permanent houses, most likely adapting the coco lumber structure

Initially the organisation processed the lumber itself, as local processors had been unable to recover their activities. As the market recovered, lumber was purchased directly from local sawmills.

During the early phase of organisation-led processing, over 1,000 beneficiaries were enrolled in a "cash-for-assets" initiative (coordinated with the Philippines Coconut Authority), in order to source the fallen coco trees from local farmers and to pay for the processing labour.

The organisation employed a team of chainsaw operators who were instructed by an organisation



The Shelter Cluster produced this poster with 8 Build Back Safer messages. Graphic: Shelter Cluster Philippines.

expert in how to process the lumber efficiently and safely. Trees were not transported, as it was too dangerous and difficult to transport whole logs (live trees were not cut down). Instead, lumber was processed where the tree had fallen, and additional labourers carried the finished planks to the trucks for transportation.

Lumber was checked by local arborists and civil engineers employed by the project, to make sure it met the appropriate standards and wasn't affected by rot or parasites. Due to time pressures, deflection testing was not part of the quality control.

The organisation included advice developed by the Cluster's Coco Lumber Working Group and from the book "Coconut Palm Stem Processing Technical Handbook" by GTZ (now GIZ).

The rip-stop plastic sheeting provided by the organisation (tightly interwoven nylon threads to prevent punctures and rips with a five-year lifetime) could not be sourced locally or regionally and was imported from the USA.

All other components were procured from national markets.

Kit contents

Item	Unit
CGI	12 Sheets
Ridge Roll	3 pieces
Elastoseal	4 tubes
Bucket	1 unit
Rope	30 meters
Tie Wire	1kg
Sack	1 unit
Hammer	1 unit
Crow bar	1 unit
Pliers	1 unit
Crosscut saw	1 unit
3m tape measure	1 unit
Shovel	1 unit

A.25 Philippines – 2013 – Typhoon Haiyan

Case study

Keywords: Cash / vouchers; Advocacy / legal; Training.

Emergency:	Typhoon Haiyan (Yolanda), Philippines.
Date:	8th November 2013.
Damage:	1.12 million houses damaged.
People affected:	Approximately 14 million affected, 4.1 million displaced.
Project location:	Tanauan and Tacloban, Eastern Leyte.
Beneficiaries:	35,000 - 45,000 people.
Outputs:	6,615 shelters (3,277 completed as of September 2014).
Ocupancy rate:	100%.
Shelter size:	Average of 12.5m² depending on household inputs. Engineers make recommendations based upon *Sphere*.
Cost per shelter:	The organisation provides US$ 450, with beneficiaries' self-recovery efforts valued at around US$ 250.

Project description:

The main organisation, in collaboration with a local implementing partner, supported the self-recovery of those affected by Haiyan through the provision of direct cash grants, vouchers for quality-controlled materials, and training and guidance in DRR techniques.

The two organisations lobbied the government to allow assistance to families waiting to be relocated who were living in the "No Build Zone" (NBZ). Relocation is likely to take 1-2 years.

Emergency timeline:

[a] 8 November 2013: Typhoon Haiyan hits. **[b]** Heavy rains affect those in makeshift shelters. **[c]** July: Typhoon Glenda. Some evacuations in Tacloban.

Project timeline [number of months]:

[1-3] March 2014: strategy development and community consultation in Tanauan.
[3] Implementation in Tanauan; assessment in Tacloban.
[4] Beneficiary selection. Gov. approves light-material assistance in NBZ.
[4-9] Conditional cash grant payment.
[6] Land-use problems resolved in Tacloban.
[5-11] Voucher redemption. Project forecast to end February 2015.

Strengths

- ✓ The project provides choice, rather than imposing one shelter solution on all beneficiaries.
- ✓ Price and quality control components ensure value for money and safety, with vouchers reducing the potential for corruption.
- ✓ Material assistance is delivered with minimal transportation costs by mobile hardware stores.
- ✓ The local economy has been stimulated, and local suppliers have been keen to provide good quality products and service to their local customers.
- ✓ The relocation process away from the NBZ takes time, and the main organisation, following the lead of its local partner, successfully advocated for the government to allow light material assistance to those still waiting in the NBZ.

Weaknesses

- × The voucher system can end up causing delays since small traders have limited capacity and are unfamiliar with the process.
- × The cash-on-delivery procurement mechanism does not suit small traders who need cash up-front to buy in stock. Revising the procurement procedures to resolve this issue delayed the project implementation.

Observations

- Sourcing quality materials from small suppliers has proved to be problematic.

Situation before the disaster

The Municipality of Tanauan's economic activity is based around fishing and farming, whilst Tacloban City is a large urban area. Poor families, whether living in urban or rural areas, were mostly living in one-room shelters made of coco lumber with bamboo or plywood walling and CGI sheet or 'nipa' shingles (leaves from the nipa tree sewn together over bamboo sticks) for roofing.

In urban areas foundations were more likely to be made with concrete, but in general shelters were poorly constructed, because of limited financial resources and because skilled craftsmen with good technical knowledge tended to work in larger cities.

Demonstration of prototype collapsible transitional shelter. While the design is in development, beneficiaries are assisted through the standard voucher modality. Photo: Oxfam.

Situation after the disaster

Six months after Typhoon Haiyan struck, shelter remained the highest priority need, with only 22% coverage out of 1.12 million affected houses across the Philippines by the end of April 2014, when the project was just beginning.

The city of Tacloban presented complex challenges due to the high level of damage and the large urban population. Those that began recovery in "safe zones" were often re-building their shelters to an even lower standard than before the typhoon, due to limited financial resources and poor quality materials. In April 2014 heavy rains caused flooding, especially in Tacloban and in July Typhoon Glenda hit, which resulted in some families being evacuated for up to two weeks.

Shelter strategy

A Damage Loss and Need Assessment (DaLA) led by the National Economic and Development Authority (NEDA) and supported by the Shelter Cluster, was completed in December 2013. The conclusions recommended supporting a self-recovery approach for rapid recovery.

A "No Build Zone" (NBZ) was announced by the President a few weeks after the Typhoon hit, and humanitarian agencies were prevented from providing non-emergency assistance in the NBZ whilst people were moved to temporary shelters away from the NBZ (tent cities or bunkhouses) in preparation for permanent relocation.

Government relocation plans involve the moving of 200,000 households in total, with 10,000 households being relocated from parts of Tacloban City. While waiting for relocation to take place, some families have lived in tents and makeshift shelters for nearly a year and the relocation process continues at a slow pace.

For the first six months, no shelter assistance to these families was permitted, apart from the distribution of tarpaulins.

Humanitarian organisations, including efforts made by the project's local partner, advocated for the provision of more substantial shelter support in the NBZ.

In March 2014, the NBZ was re-classified as a No Dwelling Zone (NDZ) by the Office of the Presidential Assistant for Rehabilitation and Recovery, in order to allow work to begin on the reconstruction of buildings for tourism and other livelihoods activities. However, local government authorities retained the power to take final decisions on policy, and the impact of the decision was not immediately felt.

After further advocacy by humanitarian organisations, it was accepted by the local government that light materials assistance could be provided in the original NBZ. Whilst the authorities in Tanauan allowed assistance to families on the site they were currently living in, authorities in Tacloban wanted all potential plots where temporary shelter would be provided to be officially accepted. This meant that a number of alternative plots had to be identified by the project, delaying the response until August 2014.

As of end of October 2014 , 325 IDPs living in tents have been assisted by helping them to move to a safe lot, signing an agreement with the lot owner to pay a rent of US$ 2 per month.

Project implementation

Prior to beneficiary selection, several community consultation sessions were conducted in Tanauan, in order to provide feedback on the proposed strategy. Following the meetings, several adjustments to the plan were made, including replacing tools with additional money for roofing materials, and adjustments to beneficiary criteria to include financial considerations and the need for extra construction support for the most vulnerable (they were given additional money to pay for four days' worth of unskilled labour).

Build Back Safer Committees (BBSC) were formed, with their membership including representatives from local government, community leaders, beneficiary representatives,

Left: A mobile hardware store in operation, with items delivered by truck and checks made by the organisation. Right: Full-size frames erected showing correct and incorrect bracing for training purposes. Left photo: Francisco Montiero. Right photo: Oxfam.

grassroots organisations, women's representatives and representatives of religious groups. This community participation mechanism played a crucial role in the transparency and effectiveness of the project.

Following beneficiary selection, beneficiaries were grouped into clusters of 25-30 households, with each cluster choosing a representative who became a member of the BBSC.

There were three main components of the assistance programme, described below:

1) Technical assistance

Prior to the cash and voucher distribution, the two organisations provide training in DRR techniques with on-site demonstrations, educational material and scale models. The quality of salvaged materials is validated, and support is given to the families to identify their specific needs and recommend how to best utilise the cash and voucher to recover the shelter.

2) Conditional cash grant

The organisations link local suppliers to the community, with the leader of each group of beneficiary households being supported to produce a procurement order. Suppliers agree standard prices and quality levels with the organisations. The grant is paid through the Philippine Post Office once the beneficiary cluster has completed the training.

3) Cash voucher for roofing materials

Vouchers are distributed once the structures are complete, and can be redeemed at mobile hardware stores, with a master-list of available materials printed on the beneficiary's registration card.

The materials are quality-controlled by a team made up of BBSC members, staff from the main organisation and its local partner, and local government representatives. A certificate of satisfaction is signed by the team once the quality of the materials presented by the supplier on distribution day has been validated and cross-checked against previous warehouse joint visits.

The implementation of key DRR messages is monitored during the project, with checks made before the next phase of support is provided. The project records all information on materials-use and DRR techniques implemented in a database, to facilitate a final evaluation.

Beneficiary selection

The Disaster Assistance Family Access Card (DAFAC) database and Local Government Unit (LGU) damage assessment were used as initial data to triangulate beneficiary needs and avoid duplication of responses.

Due to many people's identity documents being destroyed in the typhoon, assistance has been based on pre-issued tokens combined with the detailed beneficiary databases. Vulnerability criteria are then used to select households, whose needs are validated by a home visit. Criteria include prioritising female-headed households, the elderly, and people with disabilities.

The BBSCs have an important role to play, helping to resolve problems and ensure that beneficiary lists are correct. Beneficiary lists are made public (through notice boards or committee meetings) for two days, to allow time for beneficiary feedback through help desks and complaints boxes. After following up feedback (in the presence of the BBSC, to ensure the process is transparent) the final list is posted, along with written responses to complaints.

Coordination

The organisations were actively involved in the Shelter Cluster, which operated at national, regional, provincial and LGU levels, done in order to prevent duplication. The organisations also cooperate closely with the local government. In order to reduce the potential for conflict and tensions in the communities, the organisations within the Cluster agree to make sure that their assistance packages do not greatly differ in value.

The main organisation's partnership with the local partner, who had led the advocacy for a change in policy on the NBZ, added a great deal of local knowledge and understanding

Amakan being attached to a shelter. Photo: Green Mindanao

of context when planning and implementing the project.

The project also plans to work with Philippine university academics to test a prototype collapsible shelter for structural integrity and social acceptance to see if it is a viable sheltering solution for communities living with disasters.

Technical solutions

As part of the project, a prototype collapsible shelter has been developed and is currently being tested. In the meantime, the project's standard shelter response is being implemented in Tacloban.

To deal with the restrictions on rebuilding in the NBZ, the project engineering team designed the prototype shelter so that it would be easy to dismantle and re-locate. The design is extendable and can be upgraded if sited in a safe area.

The purpose of the design was to initiate more productive discussions with the Tacloban authorities on what kind of assistance could be provided in the NBZ in order to support families who had been waiting to be relocated for months, and a model shelter was erected in Tacloban in July 2014. However, the organisations would prefer to provide more flexible shelter assistance to beneficiaries in these problem areas.

Following a detailed field survey which included discussions with craftsman and households, the shelter size was designed to be a minimum of 12.5m^2 for an average family of five people. Beneficiaries can modify the design to enlarge it using additional materials which they provide themselves.

The survey also indicated that the communities were able to provide around a third of the cost of the shelter in terms of providing unskilled labour and salvaged materials.

The final collapsible shelter design can be dismantled in 2-3 hours, making it possible to completely collapse the shelter if there is advance warning of an extreme typhoon. The dismantling requires no skilled labour and the shelter itself is made from local materials.

Disaster Risk Reduction (DRR)

The Build Back Safer techniques include:

- Using hurricane strapping to tie down the frame and roofing.
- Assessing the quality of salvaged materials.
- Elevating structures in flood-prone areas.

At the beginning of the project, an international training organisation organised and ran the Training of Trainers sessions for the staff of the main organisation and its local partner in order to establish a model for training the household clusters.

Each household cluster participated in a half-day construction training. This involved on-site demonstrations with models and training material identifying ten key points for typhoon-resistant construction.

A separate four-day training workshop, targeted only at specific villages in Tacloban, comprised of practising emergency evacuation drills and developing contingency plans for the most vulnerable areas. The BBSCs also received preparedness training in order for them to become rescue teams in an emergency.

A disaster preparedness campaign was launched, with educational material developed and distributed in collaboration with local government. The wall and roof frames are built with coco lumber and wall screens are made from either plywood or weaved bamboo mats locally known as 'amakan'. Roof options include cladding with leaf mats, locally known as nipa shingles, or corrugated iron sheets.

By providing materials through local suppliers using mobile hardware stores, the organisation avoids the overheads of centralised procurement, warehousing and transport costs.

Wider project impacts

The project voucher approach has influenced the national government to review their own roofing material distribution process, changing from in-kind distribution to vouchers in order to increase beneficiaries' choice and reduce supply chain problems.

The project approach has resulted in the injection of direct and indirect cash payments worth US$ 2.5 million into the local economy of the specific target municipalities.

The certified training of 200 women carpenters is linked with long-term gender programmes in the area.