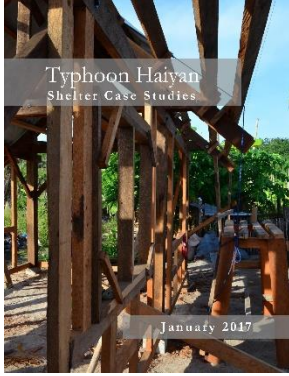




# Typhoon Haiyan Shelter Case Studies

January 2017



## Cover

A shelter starts to take shape in Eastern Samar utilizing locally sourced materials that draw from the abundance of downed coconut trees. The shelter, like many others constructed after Haiyan, incorporates 'build back better' principles, such as concrete foundations, bracing, and stronger connections.

Photo by Aaron Opdyke

## Acknowledgements

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## Foreword

Urbanization, climate change, and conflict continue to strain the global humanitarian system. In 2016, the United Nations estimated that there was a \$15 billion funding gap for humanitarian assistance<sup>1</sup>.

In 2013, the world watched as Typhoon Haiyan descended on the Central Philippines, making landfall with sustained wind speeds in excess of 315kph (195mph). The storm was the strongest ever recorded based on wind speed at landfall. The aftermath was devastating.

Too often, we as humanitarians get caught up in attending to the next response without taking time to track actions and outcomes. To improve the delivery of shelter solutions, it is imperative that we reflect on our successes and failures to learn across programs, and disasters.

Through this report, we hope to illuminate innovative approaches, barriers to implementation, and surprises that followed the delivery of shelter assistance following Haiyan, highlighted through 19 diverse shelter cases. We have also compiled commentary pieces on shelter themes that defined the response.

Haiyan presents a compelling case to study because of the range of shelter modalities utilized by organizations. We have a unique opportunity to examine the intimacies of approaches and compare them within a context that in many ways reflects the complexity we continue to see in other responses.

It is our hope that this serves as a tool to document the wealth of shelter knowledge that was put forth after Haiyan. We applaud the successes we've made as a community of practice and eagerly look forward to continuing to improve our methods of delivering resilient and sustainable shelter solutions for those affected by natural disasters and conflicts.

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<sup>1</sup> Georgieva, K., Shah, N., Ibrahim, H., Jafar, B., Macnee, W., Manuel, T., Mohohlo, L., Sriskandarajah, D., and Wallstrom, M. (2016). [Too important to fail - addressing the humanitarian financing gap](#). *High-Level Panel on Humanitarian Financing Report to the Secretary-General*.



## Abbreviations

CGI	Corrugated galvanized iron (sheets)
CLTS	Community-led total sanitation
DENR	Department of Environment and Natural Resources
DRR	Disaster risk reduction
DST	Department of Science and Technology
DSWD	Department for Social Welfare and Development
ESA	Emergency shelter assistance
HLP	Housing, Land, and Property
HUC	Highly urbanized city
IEC	Information, education, and communication
IDP	Internally displaced person
LGU	Local government unit
MDRRMO	Municipal Disaster Risk Reduction and Management Office
MOA	Memorandum of Agreement
NBZ	No build zone
NDZ	No dwell zone
NFI	Non-food items
NHA	National Housing Authority
NGO	Non-governmental organization
OPARR	Office of the Presidential Assistant for Rehabilitation and Recovery
OSB	Oriented strand board
PhATS	Philippines approach to total sanitation
PWD	Person with disability
TESDA	Technical Education and Skills Development Authority
TRRP	Tacloban Recovery and Rehabilitation Plan
WASH	Water, sanitation and hygiene

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## Introduction

This report is the culmination of three years of research tracking 19 separate shelter programs in the aftermath of Typhoon Haiyan in the Philippines. The 19 selected cases that follow are intended to encompass the range of strategies and approaches used by NGOs in shelter reconstruction in the aftermath of Haiyan. Presented is information on project locations, strategies used in planning, design, and construction, and discussion of program barriers and successes. Each project includes a photo set of completed construction efforts. Programs encompass three regions – Cebu, Leyte and Eastern Samar – each with unique challenges, but with an underlying set of characteristics that include severity of damage experienced and socio-cultural context. The programs all provided shelter assistance through formal organizational intervention, however, processes used to achieve reconstruction differed, ranging from emphasis on self-recovery to contractor built housing.



A transitional shelter site is shown in northern Tacloban. The urban center has plans to relocate 20% of its population to resettlement sites north of the city center.

## Natural Disasters in the Philippines

Home to more than 100 million people, the Philippines ranks as the 12<sup>th</sup> most populous country in the world<sup>1</sup>. Composed of more than 7,000 islands, the country is scattered across a landmass that encompasses 299,404 square kilometers (115,601 square miles).

Historically, the Philippines has been one of the most hazard prone countries in the world. Its low elevations, vast coastline, and socioeconomic inequalities pose complex development challenges. In the recent United Nations World Risk Report, the Philippines ranked as the third most risk prone country, only behind Vanuatu and Tonga – a dangerous combination of high exposure and prevalent vulnerabilities<sup>2</sup>. In the last ten years alone the country has seen an average of nearly 19 disasters annually, and nearly half of these hazards have caused devastating loss of life and damage. Historical records of annual

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The Philippines ranks as the **third most risk prone country** in the world.  
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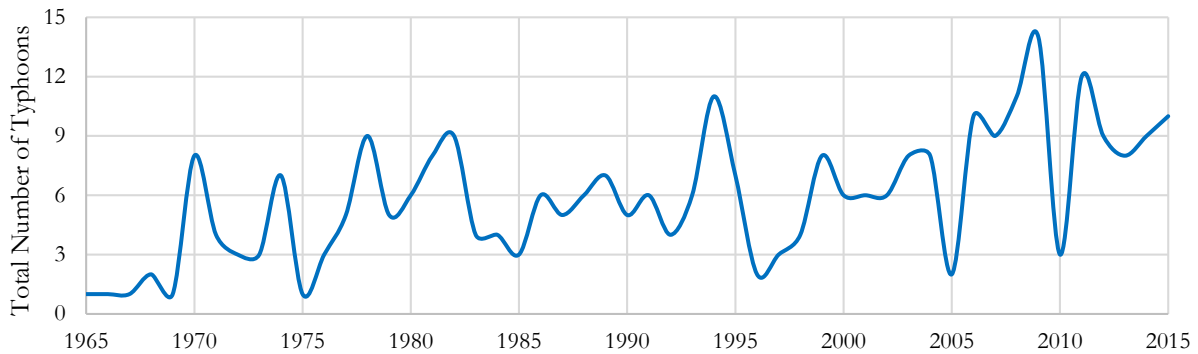
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<sup>1</sup> World Bank. (2016). “[World Development Indicators](#).”

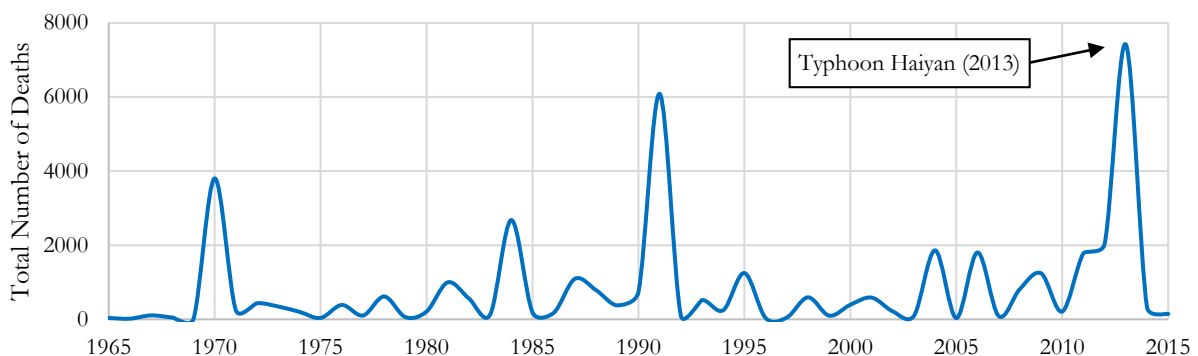
<sup>2</sup> Garschagen, M., Hagenlocher, M., Kloos, J., Pardoe, J., Lanzendörfer, M., Mucke, P., Radtke, K., Rhyner, J., Walter, B., Welle, T., and Birkmann, J. (2015). [World Risk Report 2015](#). Alliance Development Works and United Nations University Institute for Environment and Human Security, Berlin, Germany.



numbers of typhoon disasters and casualties are presented below<sup>1</sup>. As can be seen, the number of typhoon-related disasters continues to increase each year. While increased disaster risk reduction measures are saving lives, typhoons that strike vulnerable locations continue to cause significant loss of life and damage.



#### 50-Year occurrence of typhoon disasters<sup>2</sup> in Philippines



#### 50-Year death totals from typhoon disasters in Philippines

### Typhoon Haiyan

On November 8, 2013 Super Typhoon Haiyan, locally known as Yolanda, slammed into the Visayas region of the Philippines. Making landfall in the province of Eastern Samar, the storm had sustained wind speeds of 315 kilometers per hour (195 mph) with gusts up to 380 kilometers per hour (235 mph) – at the time it was the strongest storm ever recorded at landfall, measured by wind speed<sup>3</sup>. In its wake, the

<sup>1</sup> Guha-Sapir, D., Below, R., and Hoyois, P. (2016). EM-DAT: [The CRED/OFDA International Disaster Database](#). Université Catholique de Louvain, Brussels, Belgium.

<sup>2</sup> Occurrence of disaster determined used Centre for Research on the Epidemiology of Disasters (CRED) criteria of conforming to at least one of the following criteria: (a) 10 or more people dead; (b) 100 or more people affected; (c) the declaration of a state of emergency; or (d) a call for international assistance.

<sup>3</sup> Evans, A. (2014). [Annual Tropical Cyclone Report 2013](#). Joint Typhoon Warning Center, Pearl Harbor, Hawaii.

storm left over 6,300 casualties, another 28,000 injured, and affected more than 16 million individuals<sup>1</sup>.

Over 4 million people were displaced from their homes, more than 1.1 million homes were damaged or destroyed, and the economic impacts were estimated at over \$12.9 billion USD<sup>2</sup>. This equated to a 4.7% loss of national GDP that year for the Philippines<sup>3</sup>. To put the level of damage in perspective, typhoon related damages in the Philippines in 2013 were 1.26 times the previous 50 years of national typhoon damages *combined*<sup>4</sup>.

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Typhoon related damages in the Philippines in 2013 were **1.26 times** the previous 50 years of national typhoon damages *combined*.  
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The islands of Leyte and Samar sustained the brunt of the damage, with Tacloban City, Leyte's largest urban center, reporting 90% of infrastructure destroyed shortly after the storm<sup>5</sup>.

## The Need and Response

In the Shelter Cluster's final analysis of shelter recovery, published in December 2014, organizations were anticipating final shelter support for 344,853 households.<sup>6</sup> The last reported needs assessment was on March 5, 2014 by the Department of Social Welfare and Development (DSWD) and determined support was needed for 1,012,790 households (518,878 partially destroyed and 493,912 totally destroyed).<sup>7</sup> This number was reduced from the previously reported target of 1,127,041 households (578,248 partially destroyed and 548,793 totally destroyed) following local government unit (LGU) validation.

Updated Shelter Cluster data on households reached, using secondary sources, shows that an estimated 344,526 households received shelter assistance as of November 2016. Updated numbers of households reached was calculated using current documentation from organizations through a desk review.

This suggests that the last reported humanitarian shelter target of assisting 348,853 households for the Haiyan response was met within 3 years. Note that this number decreased slightly as the response progressed during the first year, but remained mostly static. The final

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<sup>1</sup> National Disaster Risk Reduction and Management Council. (2014). [Final Report Re Effects of Typhoon "Yolanda" \(Haiyan\)](#). National Disaster Risk Reduction and Management Council, Quezon City, Philippines.

<sup>2</sup> National Economic and Development Authority. (2013). [Reconstruction Assistance for Yolanda](#). National Economic and Development Authority, Pasig City, Philippines.

<sup>3</sup> World Bank. (2016). ["World Development Indicators."](#)

<sup>4</sup> Analysis of data from Centre for Research on the Epidemiology of Disasters (CRED) EM-DAT.

<sup>5</sup> Center for Excellence in Disaster Management and Humanitarian Assistance. (2014). [Lessons from Civil-Military Disaster Management and Humanitarian Response to Typhoon Haiyan \(Yolanda\)](#). Pearl Harbor, Hawaii.

<sup>6</sup> The Shelter Cluster officially closed in October 2014 and became the Humanitarian Shelter Working Group (HSWG).

<sup>7</sup> [Shelter Cluster Analysis of Shelter Recovery](#)

numbers suggest that 99% of planned activities made at the end of the first year following Haiyan were completed. The Shelter Cluster had reporting data for 78 organizations that implemented, or planned to implement, shelter assistance.<sup>1</sup> 5 additional organizations were added to this analysis that are included as case studies in this report as they assisted a substantial number of households, but did not report to the Shelter Cluster.

Of the organizations (excluding government agencies) that initially planned to provide shelter assistance for over 1,000 households, 79.5% achieved their initial targets. Of the organizations that initially planned to support less than 1,000 households, only 43.8% achieved their initial targets. 5 of the 83 organizations identified were responsible for filling the unmet targets of the remaining organizations. 4 of these 5 organizations initially planned to provide support for more than 10,000 households. This suggests that humanitarian organizations implementing at scale were the primary driver for sustaining targeted shelter goals.

Despite the ability of shelter organizations to follow through on targets established at the end of the first year, it is worth noting that the total response fell short of its initial target set in December 2013 of supporting 500,000 households<sup>2</sup>. In total, humanitarian organizations completed about 70% of initial targets set by the Shelter Cluster.

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The National Housing Authority (NHA) currently plans to build 205,128 new housing units for affected households at a cost of P61.25 billion. As of November 2016, 29,661 of these units were completed<sup>3</sup>. In addition to NHA programs, the Shelter Cluster reported that local government units (LGUs) managed, and completed, 1,360 housing units.

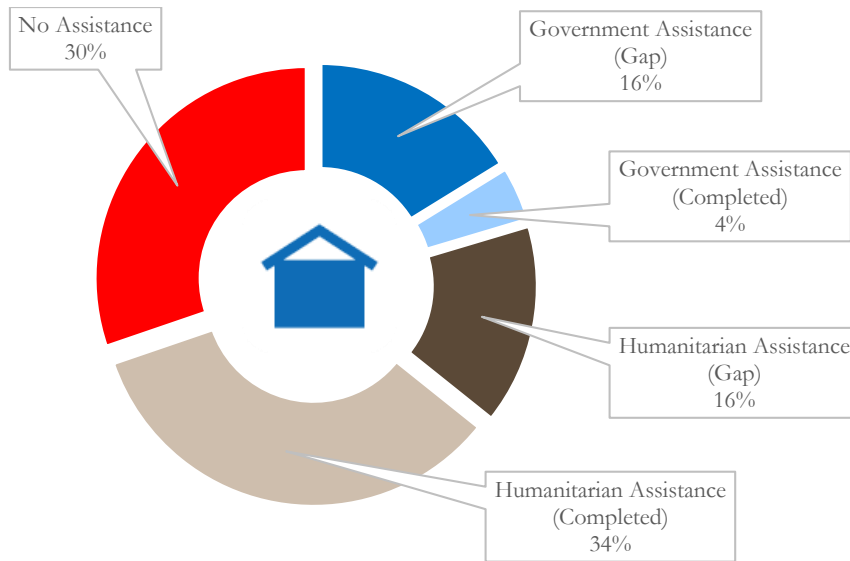
When compared with total shelter needs, humanitarian assistance was able to support 34% of households (initially targeted 50%). Government assistance (aside from the emergency shelter assistance program) is targeting 20% of shelter needs. There is likely some overlap in these targets because some households were assisted by temporary or transitional solutions as well as permanent government resettlement assistance. It is estimated that 62% of households identified in need have not received either humanitarian assistance or government assistance (aside from ESA) to date. A breakdown of shelter targets, and progress as of January 2017, is shown below.

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<sup>1</sup> IFRC Societies were grouped together for analysis because the Philippine Red Cross was an implementing partner for all shelter programs.

<sup>2</sup> Shelter Cluster. (2014). "[Strategic Operational Framework for Transition Post-Yolanda.](#)"

<sup>3</sup> National Economic and Development Authority. (2016). "[Yolanda Updates October 2016.](#)"



**Breakdown of current shelter implementation progress<sup>1</sup>**



**Humanitarian and government shelter progress as of January 2017**

**DSWD Emergency Shelter Assistance**

While humanitarian shelter assistance and government social housing programs assisted a large number of beneficiaries, DSWD’s ESA program was reported to have reached nearly double the number of households as NHA and humanitarian programs combined. Initial targets submitted by DSWD to the Office of the Presidential Assistant for Rehabilitation and Recovery (OPARR) targeted 966,341 households for assistance, totaling P18.65 billion<sup>2</sup>.

ESA was intended to be used as an unconditional cash grant or material voucher modality. Qualification criteria were outlined by Social Welfare

<sup>1</sup> Note: Emergency Shelter Assistance (ESA) beneficiaries were not included in government assistance as there is inconsistent reporting data and there were a number of discrepancies observed across LGUs. Further, these funds were commonly distributed to households that had already received other shelter assistance in many cases, thus we discuss ESA separately from other humanitarian and government shelter programs. Further, humanitarian gaps

<sup>2</sup> National Economic and Development Authority. (2014). “Yolanda Comprehensive Rehabilitation and Recovery Plan.”

Secretary Corazon Soliman in November 2014 in Memorandum Circular 24<sup>1</sup>. In particular, eligibility criteria were outlined as follows:

Beneficiaries of the ESA are those families who have no permanent source of income or whose income is below the poverty threshold of the region who may be any of the following:

1. Families whose houses were either partially or totally damaged located in safe areas or in controlled areas which are already provided with engineering and/or scientific interventions to make it habitable. The Comprehensive Land Use Plan (CLUP) and the multi-hazard maps of LGUs shall be utilized in providing ESA for totally damaged shelter units to ensure that the area is safe from any hazard;
2. Families who are renting or sharing houses which are totally or partially damaged provided they are listed in the official DSWD list, sourced through the DSWD-Disaster Family Access Card (DAFAC) submitted by the LGUs as renters or shares of houses within safe or controlled areas;
3. Families whose heads are employed in government or private sector but whose term of employment are not permanent or regular basis and do not have access to housing loans of both government and the private sector; and,
4. Regular employees of government and private sectors/organizations with fix monthly salary below P15,000.00 shall also be eligible, provided they have not received the same assistance from other agencies and are indicated in the masterlist of beneficiaries in accordance with the DSWD-Disaster Assistance Family Access Card (DAFAC).
5. Individual who are considered long survivors due to the untimely demise or the other family members due to the typhoon may also receive the assistance, provided that he/she is among those issued with DSWD-DAFAC and in the masterlist of beneficiaries; and,
6. Families listed in items 1-4 already did self-repair of self-reconstruction may be granted the assistance as long as their names are included in the masterlist of beneficiaries sourced through the DSWD-DAFAC.

The program was structured such that funding was distributed to DSWD field offices for distribution. These offices were also responsible for verification of beneficiary criteria and determination of the modality to be used (unconditional cash grant or material voucher).

<sup>1</sup> Soliman, C. (2014). "Guidelines for the Implementation of the Emergency Shelter Assistance (ESA) Project for Families with Partially and Totally Damaged Houses Due to Typhoon 'Yolanda.'"

Despite the program's ambitious targets, distribution of funds was slow and large numbers of affected households reported not receiving ESA. Following DSWD's Disaster Response Assistance and Management Bureau audit of the ESA program in 2016, the lack of communication surrounding inclusion criteria were cited as a primary reason for delays<sup>1</sup>. In particular, field offices reported that they were not consulted regarding the following three disqualification criteria:

1. Households living in danger zones or 'no build zones';
2. Households earning more than P15,000 per month;
3. Households given shelter assistance by other NGOs

These criteria, while well intended, often excluded the most vulnerable households. In particular, vulnerable households were usually the ones living danger zones, such as the 40-meter coastal 'no-build zones.' Further, for those households that had previous assistance from NGOs, there was no recommendation given to differentiate levels of assistance provided. Despite these inefficiencies, the DSWD central office reported that it was able to distribute more funding than initially targeted. As of August 2016, the DSWD central office reported that it had distributed P20.73 billion to assist 1,113,957 households.

The reason ESA is discussed separate from other humanitarian shelter programs and government social housing programs is the sparse documentation available. In many cases, evidence from the field suggests that it was common for households to receive both ESA and NGO shelter assistance, making it impossible to estimate total coverage between both types of assistance. Further, a large number of households did not actually use the cash grant for shelter materials. DSWD's own audit found that it was common for households to 'buy' the ESA of beneficiaries prior to distribution at a lower price. For example, it was common for partially damaged beneficiaries receiving P10,000 to 'sell' their ESA at a rate of P8,000 for immediate cash from a lender and then pay back the full amount upon receiving their ESA payment. Similar phenomena were observed when LGUs used material vouchers.

While the impact of ESA on shelter is difficult to assess, it was clear that the unconditional cash grants enabled households to prioritize individual needs. Funds were commonly applied for medical expenses, school fees, and livelihood capital. These applications of the ESA program should not be discounted, as they often provided substantial contributions to household recovery.

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<sup>1</sup> Department for Social Welfare and Development. (2016). "[Where did the Emergency Shelter Assistance \(ESA\) funds for 'Yolanda' survivors go?](#)" Department for Social Welfare and Development.

## Selection of Cases

Excluding government housing programs, the organizations selected for this completion of shelter cases covers 77% of all shelter assistance following Haiyan. While these organizations may have used a variety of shelter modalities across different communities, a sample of the most relevant modalities were selected in order to represent broader decisions taken in shelter.



19 shelter cases



266,624 Households assisted by organizations included in selected case projects (77% of total response)



Bounded communities include 3,501 completed shelters (initially 4,211 planned)

### Summary of shelter cases selected for inclusion

## Shelter Modalities and Approaches

To better understand each case, definitions of shelter classifications are presented below. These definitions are taken from the Shelter Cluster in order to provide uniform comparison of programs. They are taken verbatim from the Recovery Shelter Guidelines<sup>1</sup> published in August 2014. Despite clear operational definitions, organizations commonly sought to use more than one modality within a community and thus cases may include more than one classification.

### *Temporary Shelter Assistance – 2 Years*

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- ❖ **Transitional** – Temporary shelter programs aim to provide safe adequate, appropriate shelter for households whose permanent housing solution is not yet resolved. To ensure a smooth transition on to permanent solutions, transitional shelters are designed to be relocatable, resalable, or reusable, they include risk reducing measures as per the clusters the 8 Build Back Safer Key Messages and ensure access to WASH and cooking facilities though they may not necessarily provide them directly. Transitional shelter programs in higher risk areas must include risk mitigating measures such as preparedness and evacuation plans.
- ❖ **Rental Support** – Rental support programs provide temporary support to households choosing to live in a rental property or rented land. These programs may also support landlords to recover their property and open it to the rental market. RS programs are temporary assistance programs, which can support existing rental arrangements or promote rental

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<sup>1</sup> Humanitarian Shelter Working Group. (2014). “[Recovery Shelter Guidelines](#).” Global Shelter Cluster.

solutions as an alternative shelter solution. These may include financial, physical or social support separately or jointly to renters and to landlords.

- ❖ **Hosting** – Hosting programs are designed to support families choosing to be hosted by another household as a temporary solution, as well as addressing the separate needs of the hosting family. Hosting may provide support to existing sharing arrangements or encourage new sharing arrangements as a temporary option. This may include financial, physical or social assistance including repairs and house extensions. Hosting should remain flexible to address the differing needs and capacities of the hosted and hosting families, whilst respecting the existing, potentially informal, arrangement and ensuring all involved can live in safety and dignity. *(Note: The Shelter Cluster defined Hosting as ‘Sharing’ – this name is modified to match the classification’s common name that occurs in other contexts)*

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*Permanent Shelter Assistance – 9+ Years*

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- ❖ **Repair & Retrofit** – Repair and Retrofit programs aim to assist households to repair and improve structural resilience of houses to future hazards. R&R programs are divided in Minor and Major depending on the scale of the damage and need of repair, and they may include a combination of cash, material and technical assistance whilst targeting, informal or formal landlords, renters and home owners. Retrofit specifically aims at structurally strengthening existing buildings to withstand future disasters, whereas repairs aim at fixing the damage. In the recovery phase, all repair programs should include retrofitting.
- ❖ **Core Shelter** – Core Shelter programs aim to provide households with the core of their future house: one safe room, or the frame of a permanent house with a safe room to inhabit. Core Shelter programs are targeted at households located on permanent sites with security of tenure and the capacity to extend and upgrade in the future. They may include a combination of implementation modalities (direct, indirect, cash, contractor, government or partnership) using materials, cash, labor and technical support as assistance type. Core shelter programs should meet all key shelter principles, parameters and minimum standards.
- ❖ **Resettlement** – Resettlement programs aim to assist the affected population through the design and development of new or existing settlements. Resettlement programs are designed to address a broad range of socio-economic and environmental considerations such as access to roads, utilities, community facilities, public transport, livelihoods and other government services. Resettlement programs should be conducted in conjunction with repair & retrofit, core shelters, and permanent housing programs. *(Note: The Shelter Cluster defined Resettlement as ‘Settlement Planning & Development – this name was shortened for simplicity.)*



## Case Formats and Overview

For each case presented, information was compiled on the project location (with a regional map), the number of households assisted, and the primary shelter modalities used. The number of households assisted is the final number achieved, not the number planned. Any large discrepancies in unmet targets are discussed within the case profile. The average direct costs of assisting a household are also listed as well as the project duration. In some cases, ranges are listed where different modalities were used, such as both core shelters and repair kits. Note that indirect costs are not listed, as existing data was unavailable. Key themes within each shelter case are highlighted in individual sections. The total time from project initiation to completion is the time listed. This includes time for planning, implementation, and project closeout.

Cases from 3 regions were included in this study. Accordingly, an overview of each region is presented at the start of each section. These summaries provide high level themes in shelter that spanned across projects. A summary table is provided below which lists each case, region, and the modalities used.

At end of the report, several commentary and research articles discuss specific aspects that relate to shelter and recovery after Haiyan. The first of these discusses evidence from rental subsidies and hosting in Tacloban. Given the increasing prevalence of disasters in urban contexts, findings point methods to improve and expand the use of such modalities in future disasters. The second research article looks at the impact of the Shelter Cluster's '8 Key Messages.' These guidelines were one the most significant products from the response and have been reused in several recent disasters.

The next commentary discusses results from subsequent evacuations (or lack thereof) following typhoons after Haiyan that hit affected regions. Findings show that shelter is already playing an important role in evacuations within communities and may hold potential in future disaster risk reduction strategies. An overview of WASH strategies used after Haiyan is presented in the next commentary by Phoebe Tabo and Shaye Palagi, with recommendations to better integrate sectors in future responses and implications evidence on the Philippines Approach to Total Sanitation (PhATS) widely used by WASH organizations.

No discussion of shelter recovery would be complete without an update on current progress. Shaye Palagi, Roos Groen, and Amy Javernick-Will provide insights on the extensive relocation process that is currently underway in Tacloban in the fifth commentary. Finally, Yvonne Su and Ladylyn Mangada discuss the role of indigenous coping strategies, such as *bayanihan*, in the last commentary.

## Table of Case Studies

<i>Province</i>	<i>Shelter Case</i>	<i>Repair / Retrofit</i>	<i>Transitional Shelter</i>	<i>Core Shelter / Progressive Shelter</i>	<i>Rental Support</i>	<i>Hosting</i>	<i>Resettlement</i>
<i>Cebu</i>	Case 1: Okoy, Santa Fe			X			
	Case 2: Maricaban, Santa Fe						X
	Case 3: Poblacion, Santa Fe			X			X
	Case 4: Sungko, Bantayan	X	X				
	Case 5: Sillon, Bantayan			X			X
	Case 6: Kangkaibe, Bantayan			X			
<i>Leyte</i>	Case 7: Tagpuro, Tacloban		X				
	Case 8: Pago, Tanauan						X
	Case 9: New Kawayan, Tacloban	X					
	Case 10: Bagacay, Tacloban			X			
	Case 11: San Agustin, Jaro			X			
	Case 12: San Jose, Tacloban			X			
	Case 13: Magallanes, Tacloban	X	X	X	X	X	
	Case 14: San Jose, Tacloban	X					
	Case 15: Hiabangan, Dagami	X		X			
	Case 16: Saghakan, Tacloban	X		X	X	X	
<i>Eastern Samar</i>	Case 17: Sulangan, Guiuan	X		X			
	Case 18: Cogon, Guiuan		X				X
	Case 19: Cantahay, Guiuan			X			



Map of shelter case locations

# CEBU

CASE 1: OKOY, SANTA FE

CASE 2: MARICABAN, SANTA FE

CASE 3: POBLACION, SANTA FE

CASE 4: SUNGKO, BANTAYAN

CASE 5: SILLON, BANTAYAN

CASE 6: KANGKAIBE, BANTAYAN





## Cebu Overview

While the province of Cebu sustained relatively little damage, municipalities in the north were directly in the path of Haiyan and sustained heavy losses. The Eastern Visayas saw extensive storm surge, however the Central Visayas was fortunate that it was low tide as Haiyan crossed northern Cebu, easing the impact which could have been much worse. Still, the damage was immense and there was a critical need for humanitarian assistance. Despite high need, northern Cebu was largely overlooked for assistance; a result of being overshadowed by the typhoon's limited impact elsewhere in the province. This resulted in fewer organizations reaching the more remote northern municipalities. Aside from its well-known, pristine beaches that attract tourists, Bantayan Island is known for its poultry and eggs which are exported across the Visayas regions. These industries were crippled by Haiyan and while tourism was quickly restored, other livelihoods have been much slower to rebound.

## Need and Response

48,757 houses were partially damaged and 61,416 houses were totally damaged in the province of Cebu following Haiyan<sup>1</sup>. 26,655 households were targeted for shelter assistance by 21 organizations. The 6 cases presented in this section were selected from the municipalities of Bantayan and Santa Fe on Bantayan Island. Of the 110,173 households affected in Cebu, 27,083, or 25%, were located on Bantayan Island directly in the path of the typhoon. Municipalities in the north relied primarily on shelter repair kits, but there was wide ranging diversity in shelter modalities implemented on Bantayan, thus the reason the cases were selected from this context. Further, the isolation of the island, 4 hours' drive from Cebu City to the Port of Hagnaya and then an hour ferry ride to the Port of Santa Fe on



Map of Cebu

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Bantayan, made logistics a challenge for organizations delivering shelter support.

## Coordination

Similar to other affected regions, northern Cebu did have a presence of Shelter Cluster representatives, however it's hub was officially located in Cebu City, nearly 5 hours south of where most of the damage was located. Many organizations that deployed in the region were either forced to travel this distance on a weekly basis or position staff away from project sites to maintain coordination efforts. During later stages, coordination meetings for the Humanitarian Shelter Working Group (HSWG) were eventually held on Bantayan Island to better meet the evolving needs of organizations. Involvement in coordination from local municipalities was varied, however there was little government participation in

<sup>1</sup> Shelter Cluster. (2014). [Shelter Cluster Database](#).

Shelter Cluster coordination efforts. Some municipalities opted to lead coordinating efforts, although this was observed to be parallel to Cluster coordination, while others took a more passive role. In particular, fear of losing support of agencies was expressed as a concern from one government official,

“We used to go to coordination meetings but it is very tiring to do it because you know they tell you one thing and they are doing a different thing. So it is better that I leave them alone because what can I do? If I tell them the truth, I might hurt their feelings and they might go somewhere else and do the stuff anyway.”

These sentiments are valid and future coordination efforts should seek to facilitate more inclusion of local governments into Shelter Cluster planning efforts or adapt coordination structures to fit within existing government efforts to take leadership.

### Land Challenges

One of the greatest challenges facing organizations was securing land tenure of households. In 1981, then President Fernand Marcos, issued a proclamation designating key regions of the Philippines as ‘wilderness areas’<sup>1</sup>. This status was later reinforced by the Philippine senate in 1992 and the Department of Environmental and Natural Resources

(DENR) was given oversight<sup>2</sup>. The resulting protections meant that despite Bantayan’s settlement (population of 136,960<sup>3</sup>), titling of land is rare. This posed a significant challenge for organizations looking to ensure that households would not be forcefully evicted. As highlighted in Case 3 in this section, this became reality in one project’s instance within the first 3 years. An interesting approach to this problem is highlighted in Case 4. All 3 municipalities on Bantayan Island have continued to advocate for the ability to issue land titles for residents.

**Top: Crab is collected for sale; aside from farming, the sea provides the base of most livelihoods on Bantayan.**

**Bottom: Tangled steel and rubble are all that remain of a house in Cebu after Haiyan.**



<sup>1</sup> Marcos, F. (1981). [Declaring Certain Islands and/or Parts of the Country as Wilderness Areas. Proclamation No. 2151.](#)

<sup>2</sup> [An Act Providing for the Establishment and Management of National Integrated Protected Areas](#)

[System, Defining its Scope and Coverage, and for other Purposes.](#) (1992). Republic Act No. 7586.

<sup>3</sup> Philippine Statistics Authority. (2011) 2010 Census of Population and Housing



Repair & Retrofit	Transitional	<b>Core/Progressive</b>	Rental	Hosting	Resettlement
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### Case 1: Okoy, Santa Fe, Cebu

Located adjacent to the main the port area of Bantayan Island, and stretching inland to higher ground, Okoy is located in the Municipality of Santa Fe. While the rural population of 3,532 rely on farming and fishing, there are also a number of households who work in services supporting the island’s tourism. Similar to other communities on Bantayan, the primary cause of damage was wind and not storm surge. The organization providing shelter assistance in Okoy entered during the early stages and quickly identified the community as having significant shelter and WASH needs.

The shelter program aimed to provide families with a single room core shelter, utilizing local contractors for the construction work. Most construction occurred on families’ pre-disaster locations, however a large number of houses were moved to new sites within the barangay when land conflicts arose. Beneficiaries were selected by the organization using common vulnerability criteria.

The shelter design included a gable truss roof, a low masonry skirt wall, and hardiflex paneling. A uniform design was used for all beneficiaries, leading to a high level of



Map of project location  
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-  230 Households
-  P90,000 Materials
-  P16,000 Labor
-  12 Months

consistency across the program. Ventilation was improved on the structures by using large windows on several sides, resulting in greater airflow through the structures. Shelters were completed using a direct build approach.

Following the completion of shelter construction, the organization also returned to assist with the construction of latrines. These were both attached, and detached, from the house depending on household needs (elderly, PWD, etc). At least one family member was required to assist with minor construction tasks

and the beneficiary was also required to pay for food/snacks for the hired construction labor. These additional expenses accounted for upwards of 20% of labor costs in some cases.

In addition to shelter, the organization also targeted WASH in the community, significantly reducing open defecation rates. Not only was 'hard' infrastructure targeted, but hygiene promotion programs were targeted schools in the community.

### Material Selection

While evaluating materials options for shelters, the organization opted for hardiflex, a fiberboard material. The material is significantly more durable than traditional plywood and provides water resistance without the need for painting. While this material increased the cost per shelter, it significantly added to the sustainability of the structures and for many of the beneficiaries, hardiflex was utilized as the material of choice in future additions. At the time of observation, the walling material was holding up better than other shelters where traditional plywood was used. In addition, the organization also opted to use masonry skirt walls to protect against termites and keep water and dirt out of the home. Interior walls were not provided with a grout finish, but most households had applied

plaster to interior masonry for additional waterproofing.

### Construction Inspections

During construction, the organization relied on engineer inspections for quality control, however a notable feature was the use of a pictorial checklist which was provided to the beneficiary. Using images from the Shelter Cluster 8 Key Messages, this list provided a way for the on-site engineer and homeowner to walk through requirements for the structures. The tool proved to be a successful way for the organization to document the use of safer building practices.

### Expansions

Within a year of completion, 63% of households had made major additions, such as rooms or open-air coverings, while another 26% had added partitions or made other interior improvements. Most of these additions used coconut lumber and hardiflex, although some households used masonry construction. These high rates of expansion suggest that the design was adaptable given its simplicity.

**Left: Latrines were also included in the construction package offered to beneficiaries.**

**Right: A beneficiary expanded using similar materials and building techniques as well as painted the original structure for aesthetics and maintenance reasons.**







## Strengths

- ✓ Shelters had excellent ventilation, improved by large windows.
- ✓ Structures were easy to extend and 89% of beneficiaries had expanded within 2 years.
- ✓ Widespread use of information, education and communication (IEC) materials, such as posters and inspection checklists, reinforced safer building principles.
- ✓ WASH program targeted not only latrine construction, but also hygiene promotion in schools.

## Challenges and Lessons

- Beneficiaries were asked to provide food for the construction workforce of their shelter, totaling upwards of 20% of labor costs in some cases.
- Contracts were only provided in English, leading many beneficiaries to sign without fully understanding requirements and expectations; copies printed in the local dialect could have remedied the problem.

**Left:** An example of a porch added to a core shelter. The beneficiary also painted the original structure.

**Right:** Another example highlights the variety of materials used for expansions, in this case, the exterior of coconut trees.



A year after Haiyan, 360, 932 individuals gained access to an appropriately designed toilet.



Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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## Case 2: Maricaban, Santa Fe, Cebu

### Overview

Situated along the highway between the Port of Santa Fe and the Municipality of Bantayan, Maricaban has historically been a fishing community with a population of 2,999. Rising from the sea, much of the community lies at higher elevation, an ideal location for the Municipality of Santa Fe to relocate families affected by the newly enforced 40 meter ‘no-build zone’ along coastal areas.

Working directly with the municipal government, the organization identified a need for permanent relocation for families across the island that were informal settlers. Planning for the site began within months of Haiyan and site development started in early 2014. The challenge early on quickly became identify land that was usable and accessible. The final site in Maricaban was distanced from the center of Santa Fe’s settlement, but deemed accessible given the available options. The largest challenge to emerge was site development. The location’s rocky formations and tough soil provided to be a major obstacle for leveling and foundations, requiring extensive heavy equipment. The initial planned number of houses was expected to be 218, but was



Map of project location

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118

Households



P170,000

Materials

P30,000

Labor



36+

Months

reduced because of inability to place that number of units on the site. The number was further reduced after more than a year of delays in construction to a final number of 118.

The housing designs featured duplex units constructed of confined masonry with steel channel roof girders. This was developed by the organization’s design staff in Manila and was adopted from another site in Tacloban. Latrines were integrated into the back of the unit with a septic tank.

## Municipal Partnership

Notably, the project's beneficiary selection was conducted through a municipality-led committee, and targeted families outside of the site's barangay. In partnership with the Municipality of Santa Fe, the organization's role was construction management and design services for the housing units while the municipality was responsible for the management and costs associated with the site development including water, sewer, roads, and drainage.

Despite these early commitments from the municipality, much of the site development had not occurred within 3 years. Water access was provided, although ground conditions made it difficult to link water to each housing unit as initially planned. Electricity was also not available, although the organization was able to later install small solar panels on each housing unit to power two lights. The high number of incomplete houses and low occupancy led to increased vandalism of houses and crime within the site.



## Sweat Equity

Approximately half of the houses were funded by foreign donors while the remainder of units were funded by a Philippine foundation. In addition to significant volunteer labor, several contractors were hired to fill labor gaps and perform technical tasks unsuited to volunteers. These labor contributions supplemented the required 400 hours of sweat equity for each family receiving a unit.

One of the major observations of the sweat equity requirement was that women constituted a much higher percent of the labor. This was the result of men being unable to drop other employment which supported the households' basic needs during the transition period. As a result, there was significant lost economic opportunity for women, reinforcing gender pay inequalities.

## Livelihood Support

In addition to providing shelter support, the lead organization also provided two different packages for livelihoods. In order to streamline assistance, households were offered either a fishing boat or pedicab (Filipino bicycle with carriage used for local transportation). The absence of other alternatives was prohibitive for many households who previously were not fisherfolks or pedicab drivers. Alternative forms of assistance, such as cash transfers or skills development could have better suited the needs of households.

**Left: A housing unit takes shape.**

**Bottom: Construction of housing using confined masonry provided an exemplar standard.**



## Strengths

- ✓ The use of confined masonry provided a sense of security for beneficiaries and the houses provide a viable evacuation center for neighboring areas.
- ✓ The duplex design used saved on cost by sharing a central wall.
- ✓ The local government led the beneficiary selection process in collaboration with the shelter organization, leading to greater awareness of long term vulnerabilities that existed within the municipality.

## Challenges and Lessons

- Due to the slow pace of turnover and an isolated site, high rates of crime and theft arose.
- Site development proved to be difficult due to large rock formations that were underestimated during the planning phase.
- Raised reinforced concrete floor slabs were required to level structures that were situated on uneven ground, but spans saw excessive deformation and cracking.
- Many beneficiaries complained about poor ventilation of the houses, a result of dark painted roofs and limited breeze at the selected site.
- Sweat equity requirements were commonly fulfilled by women, reinforcing gender pay gap inequalities. Men kept existing paid jobs in order to support basic household expenses, such as food and transportation, during the transition period.



**Top:** Uncompleted units scatter the site pending completion due to delays.

**Middle:** Steel girders welded together were used in roofing. In some cases, these were also painted for corrosion protection.

**Bottom:** Due to tough rocky soil, floor slabs needed to be raised, resulting in doors that were often high above the ground.

In addition to shelter, many organizations continue to look beyond ‘4 walls and a roof’ towards settlement approaches that integrate services.





Repair & Retrofit	Transitional	<b>Core/Progressive</b>	Rental	Hosting	Resettlement
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### Case 3: Poblacion, Santa Fe, Cebu

#### Overview

The community of Poblacion is located in central Santa Fe and home to a population of 2,345. The simple homes stand in stark contrast to the dozens of tourist resorts present nearby. As aid organizations arrived off the nearby ferry it is no surprise that shelter assistance was directed at those in first sight.

Entering into a partnership with the local municipality, one such organization aimed its efforts to support suitable permanent housing. These efforts quickly targeted those affected within the ‘no-build zone.’ Several initial sites were screened in other neighboring communities before a site was finalized in Poblacion.

As their first time responding to disaster, this small international organization let the municipality guide early decisions on beneficiary and site selection. Aiming to construct houses on a centralized site rather than in-situ, the specific location was chosen from the limited land options available in coordination with the municipality. Most families that were selected through the municipal process lived in Poblacion prior to Haiyan, however some residents were



Map of project location

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-  **40**  
Households
-  **P90,000**  
Materials
-  **P2,000**  
Labor
-  **12**  
Months

relocated here from neighboring islets. Beneficiaries were allowed to select the specific housing unit they would receive, allowing for placement next to relatives or friends. Interviews with households suggest that this increased social cohesion among those resettled.

#### Labor Contributions

As least one household member was required to provide a minimal amount of labor each week during early phases to clear the site over a several month period. Several skilled local

carpenters were hired to assist with construction in partnership with the international staff and beneficiaries. Most beneficiaries also assisted during construction, however this was not mandatory.

### **Building Materials**

The shelter design featured a single room structure, elevated on concrete footings. Timber and other components (structural connectors) were imported from the United States. While higher quality materials were ensured through this process, both the local government and beneficiaries expressed concern over the cost required to bring in these materials for shelters. Oriented strand board (OSB) panels were used for walling and while these were significantly stronger than locally sourced plywood, most beneficiaries felt that these panels were weaker due to unfamiliarity. The designs developed were also uncommon to most households and there was concern among beneficiaries about whether the flat roof design would withstand high wind speeds, despite the use of manufactured hurricane straps and post straps.

### **Community Infrastructure**

Individual latrines were not provided due to constraints of donor funding. To compensate, three communal latrines were constructed at a central location on the site. No management

structures were put in place to maintain these however and households noted that they commonly backed up for up a week, seemingly a result of poor soil conditions. During these periods, open defecation was the norm for most households, unless they had access to another family's latrine nearby. This is particular problematic given the sites sole water source, a well, was located near sanitation facilities.

In addition to communal sanitation facilities, the hallmark of the project was the construction of a large community center adjacent to the shelters. This building was constructed approximately one year after finishing the shelters through additional fundraising efforts from the organization. It is intended to serve as a gathering place for meetings and work place for households.

### **Land Tenure**

While initial land agreements were secured through the municipality, ongoing legal challenges to rightful ownership of the land took place following completion of the shelters. The ongoing dispute highlights an example of the importance of housing, land, and property (HLP) in humanitarian shelter projects, but also points to the uncertainty inherent in these contexts. While the shelter organization approached and received



**The completed community center provided additional space for social activities.**





**Top:** An original shelter is shown. Each beneficiary was able to choose their own paint color.

**Middle:** A beneficiary has expanded, more than doubling the size of the original structure.

**Bottom:** 3 sets of communal latrines were constructed, although the lack of management has led to infrequent functionality.

approval from the local municipality, future shelter projects should also seek to consult community leadership on any outstanding land disputes. Additionally, documentation of land titles and agreements can be important tools to beneficiaries should future disputes arise.

Despite these concerns, 73% of beneficiaries were able to add another room to their shelter and another 20% made interior improvements, such as partitions, within the first year after handover.

### **Strengths**

- ✓ Allowing beneficiaries to select specific units they would receive allowed for placement next to family members and friends, creating more cohesive clusters of households and social ties.
- ✓ Open spacing between structures allowed for easier expansion and 93% made improvements within the first year.
- ✓ Construction of a community center provided a social gathering place.

### **Challenges and Lessons**

- Imported materials raised costs significantly and unfamiliar design proved difficult to train local carpenters in construction techniques.
- Despite initially secure land agreements, titles were not adequately documented prior to the start of construction, leading to disputes over ownership of the land and uncertainty for households moving forward.



One of the strategic goals of the Shelter Cluster was supporting self-recovery of households. Many organizations effectively used cash transfer or material vouchers to support this goal.



Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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### Case 4: Sungko, Bantayan, Cebu

#### Overview

The community of Sungko, with a population of 3,296, lies on the coast of Bantayan Island between the town centers of Santa Fe and Bantayan. Sungko largely consists of families that farm seaweed and crab, relying on the sea for their source of income. The community is rural with a low population density and a majority of households are located on high ground. The average per capita household income is P285 per week – the community is one of the poorest on Bantayan Island, and featured in these case studies.

Given the high poverty rates within Sungko, it was targeted as one of the first communities on Bantayan to receive shelter assistance. Entering to fill a need, shelter assistance arrived from an organization looking to fill gaps in rural areas not covered by other organizations during the early emergency response phase.

#### Materials and Labor

Providing temporary shelter initially, the organization focused on providing material kits and labor assistance. Material quantities were greater than traditional repair kits as most households surveyed were totally damaged and little remained of previous housing. A fixed



Map of project location

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- 🏠

**183**  
Households
- 🔨

**P13,000**  
Materials
- 👷

**P750**  
Labor
- 📅

**11**  
Months

design was used for the shelters which included a gable truss roof, coconut lumber members, and plywood walling. Posts were directly buried in the ground without concrete. Labor costs were covered as a part of the shelter package, typically taking less than a day to erect each structure. Shelters were intended to provide immediate protection from the elements while allowing for future expansion as households recovered and gained capital.

## Land Rights

One of the most challenging aspects of the program was land rights. Bantayan Island is officially designated as a nature preserve, meaning that much of the land is managed by the Department for Environment and Natural Resources (DENR). There was little recourse to secure land given historically absent land titling processes on Bantayan (see the Cebu Overview for a background on land issues on the island). In place of securing land, this shelter program approached the issues from a different perspective, focusing on the ability of beneficiaries to relocate shelters if future conflicts were to arise.

## Design Evolution

Following an initial batch of shelter distributions, designs evolved, eventually leading to a dramatically different structure which included amakan walling, coconut lumber members, and pre-cast concrete foundations. This design integrated other typhoon-resistant design features to improve on the first shelters constructed. A relatively small number (less than 10) were constructed in Sungko, however the designs were used in several other communities later in recovery. The ability to iterate designs in later phases was unique and showcases an effective strategy to improve beneficiary satisfaction as lessons are learned, before waiting for the next response.

One feature that enabled improved living conditions was the use of flared walls, increasing interior space, without increasing floor area and cost. The use of a raised second room added privacy and improved ventilation for the sleeping area. Column posts were specifically designs so that they could be dug up and moved if needed given the complex land rights of the island. Connections could also easily be removed, relying on two steel plates and bolts to connect the shelter posts and foundations. In place of embedding steel plates, bolt holes were precast into footings using pipe sleeves.



**Top:** Initial temporary shelter package that was provided to households. Storage areas were commonly added for seaweed and crab livelihoods.

**Middle:** Within the first year, most family had added an additional room or living area, however these often lacked any flooring material.

**Bottom:** A second phase shelter featuring design elements taken from early lessons is shown.



**Top:** Trusses used metal straps for improved strength and rafters were tied to trusses using steel wire, in addition to cleats.

**Middle:** Example beneficiary timber expansion.

**Bottom:** Example of beneficiary who has expanded to the structure using masonry.

## Strengths

- ✓ The use of locally available building materials was cheaper than tent distributions and injected cash into the local economy during the emergency phase.
- ✓ Rather than keep designs static, the organization chose to radically alter shelters during a second phase of implementation, including removable foundations that could be moved in the event of land conflicts.
- ✓ Lightweight materials were easy to reuse in later expansions.

## Challenges and Lessons

- Early temporary shelter excluded many households from receiving other shelter assistance from organizations and the government in later stages of recovery.
- Initially the shelter sizes did not meet Sphere standards and while they were acceptable for short term use, provided inadequate long term living space.
- Lack of concrete foundations and raised walls/columns in early shelter designs resulted in rapid deterioration of coconut lumber and wall materials from weathering and terminates.



It was estimated that 33 million coconut trees were destroyed during Haiyan, severely impacting livelihoods, but providing an abundance of local building material.



Repair & Retrofit	Transitional	<b>Core/Progressive</b>	Rental	Hosting	Resettlement
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## Case 5: Sillon, Bantayan, Cebu

### Overview

Sillon, with a population of 4,064, is a fishing community located north of the port in Santa Fe. Its economy is largely based on farming and fishing, similar to other neighboring communities. During the emergency response phase, a large number of single mother households were identified for shelter assistance in the community. These households were identified for emergency shelter, such as tents and tarps, and subsequently targeted for receiving relocation assistance following the LGU's enforcement of the 'no-build zone.'

Having worked closely with households during early emergency phases, the organization was able to closely monitor households recovering at slower rates. Criteria for selection were based on Shelter Cluster guidance, however women and children were singled out for assistance.

Designs were developed for core shelters, providing a safe, permanent home, while allowing for future expansion. The final design featured a half height masonry skirt wall with coconut lumber and plywood walling, adapted from past designs implemented in the



Map of project location

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75

Households



**P86,000**  
Materials

**P17,000**  
Labor



11

Months

Philippines. Roofs were designed with the 'quatro aquas' style (hipped) to reduce wind loads on the structures. The project was phased such that all of the shelters were first completed and latrines were later added to the units. Septic tanks were shared between units to reduce on costs. Communal toilets were provided on-site for the turnover of shelters while construction permanent, individual latrines were ongoing. These were attached to the structure with access from the outside.

## Services

In addition to shelter, a daycare center was built adjacent to the site by a Cebu-based foundation with a specialty in education facilities. This was particularly impactful given the high concentration of single mothers that were selected for the relocation site. Despite this service, other infrastructure such as water and electrical connections that were initially committed by the LGU were not constructed. A single electrical connection was present and water available at well points was 15-20 minutes by walking.

## Vulnerability

The organization targeted the most vulnerable groups for relocation, resulting in the selection of mostly single mothers and children. Prior to Haiyan, the majority of households were employed in household services, as clothes washing and food preparation. Few livelihood opportunities were present at the new site, given its distance from other settlements and households in the community. The most common livelihood observed for relocated beneficiaries was crushing of stone for other infrastructure projects on the island. This work was physically demanding at low wages. The distancing of these vulnerable groups from previous settlements was observed to compound vulnerabilities by isolating and concentrating them in a single site. As a result, there were low occupancy of shelters and many households opted to return to coastal areas where greater income opportunities existed.

## Strengths

- ✓ Provided safe location that was on higher ground, away from coastal area prone to storm surge.
- ✓ Designs incorporated 1-meter high masonry skirt wall to protect against terminates and keep elements out of shelter interior.
- ✓ Daycare center provided large number of single mothers selected as beneficiaries the ability to seek income during the day.

## Challenges and Lessons

- Removal from coastal areas to an isolated site resulted in disconnecting households from social and economic ties, resulting in many households returning to live in make-shift shelters along the coast either for part of the day, or permanently.
- The relocation, and concentration, of vulnerable groups exacerbated risks, whereas these households relied on neighbors for support previously.
- Despite being marketed as ‘core shelters’ that were expandable, little space was provided between and behind shelters to make expansions and improvements.

**Top:** While some beneficiaries initiated investments in opening sari-sari stores on the front of their shelters, most were unable to find work at the new site.

**Bottom:** The construction of a daycare adjacent to the relocation site allowed women to seek income during the day.







Repair & Retrofit	Transitional	<b>Core/Progressive</b>	Rental	Hosting	Resettlement
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## Case 6: Kangkaibe, Bantayan, Cebu

### Overview

Kangkaibe is one of the largest geographic communities on Bantayan Island and covers a vast area inland. With a population of 2,635, most households farm for their livelihood, however a quarry located in the community provides income for other households to process this rock through laborious hand techniques.

3 organizations were providing shelter assistance in Kangkaibe at various stages of recovery. The largest of the 3 programs focused on core shelters. Starting with assessments conducted by community volunteers, the first phase of construction started within 6 months of Haiyan.

Following completion of the first batch of beneficiary households, a second batch commenced in early 2015. The shelter design, constructed from coconut lumber and corrugated galvanized iron (CGI) sheets, has a spacious interior that allowed for a partition to be added by households later. The structure was also raised on pedestal footings to protect from termites and solignum, a weatherproofing compound, was added to exterior walls during the second phase.



Map of project location

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348

Households



P5,000-P70,000

Materials

P0-P14,000

Labor



18

Months

WASH was intended to be integrated from the start of the program, however the priority placed on shelter needs delayed the start of WASH assistance. Labor was provided by organization-hired local contractors; however, many beneficiaries assisted with small construction tasks. A formal training program through the Technical Education and Skills Development Authority (TESDA) was provided for approximately 50 carpenters early in the program. Several other NGOs had provided temporary solutions to beneficiaries prior to the organization entering.

## Livelihoods

Linking livelihoods assistance to the shelter program proved to have a significant impact on households' incomes. In particular, livestock and farming seed were distributed in order to support household economic recovery. The distribution of livestock in particular was effective. In the absence of savings, many households commented that they would not have been able to buy the needed seed their annual crop.

## Duplication and Minimum Standards

While evidence from past disasters suggest that duplication of beneficiaries was unintentional, this case highlights an example of where misaligned strategy actually was the underlying cause of duplication. For one household, all 3 shelter organizations working in the community provided them with shelter assistance, each organization determining that the previous shelter was inadequate. While it is promising to see that these organizations recognized the potential inadequacy of living conditions and opted to still include these households in beneficiary selection, it is troubling to see that upgrades or adaptations were not made to previous structures and instead entirely new structures were constructed. Future efforts to meet Sphere standards for household should recognize repair & retrofit options in these cases.

## Strengths

- ✓ Complementary livelihood program, in particular livestock, was able to boost income for households and enable transition to long term recovery.
- ✓ Weatherproofing and protection measures, including solignum coating of walls, used motor oil coating of lower posts, and raised concrete footings, were found to be an effective combination in limiting termite damage.
- ✓ Shelters were well ventilated and provided large livable space.

- ✓ Labor rates were 'pakyaw' contracts, or fixed rate per shelter, leading to faster completion rates of shelters by labor teams.

## Challenges and Lessons

- Duplication of beneficiaries was observed to be intentional rather than accidental, the result of lacking minimum shelter standards from previous shelter assistance, however no attempts were made to upgrade or adapt previous shelters.
- While typhoon hazards were the primary concern in planning for resilient livelihoods, a drought stressed farming income during recovery, highlighting the importance of livelihood diversification.

**Top: Termite and weathering protection included the use of solignum, a chemical protectant, that was applied to amakan walls. Used motor oil was also applied to posts for protection.**

**Bottom: Interiors were spacious, allowing beneficiaries to place partitions to fit individual household needs.**



# LEYTE

CASE 7: TAGPURO, TACLOBAN

CASE 8: PAGO, TANAUAN

CASE 9: NEW KAWAYAN, TACLOBAN

CASE 10: BAGACAY, TACLOBAN

CASE 11: SAN AGUSTIN, JARO

CASE 12: SAN JOSE, TACLOBAN

CASE 13: MAGALLANES, TACLOBAN

CASE 14: SAN JOSE, TACLOBAN

CASE 15: HIABANGAN, DAGAMI

CASE 16: SAGHAKAN, TACLOBAN



## Leyte Overview

Situated in the Eastern Visayas, the province of Leyte sustained some of the worst damage from Haiyan. High tide, and amplification of storm surge within the Gulf of Leyte, brought towering waves to the urban center of Tacloban and its neighboring coastal communities. Inland communities were also affected by significant agriculture and economic losses. In total, 79% of all casualties from Haiyan were in Leyte<sup>1</sup>.

Prior to Haiyan, Tacloban was known as a rising city and is one of 33 'highly urbanized cities' (HUCs), the largest urban settlements within the Philippine<sup>2</sup>. The Philippine National Highway cuts through Leyte, and Tacloban City, and a large amount of goods flow through the province. The urban center is known for its thriving trade and commerce, including agriculture, construction, banking, outsourcing services, education, transportation, and tourism.

## Need and Response

191,230 houses were partially damaged and 230,407 houses were totally damaged in the province of Leyte following Haiyan<sup>3</sup>. 133,988 households were targeted for shelter assistance by 33 organizations. Of the 421,637 households affected in Leyte, 58,423, or 14%, were located in Tacloban City. The 10 cases presented in this section were selected from across the province of Leyte. While a number of cases included are within Tacloban, other rural cases are presented outside to cover the wide scope of activities that were conducted in the aftermath of Haiyan. While urban centers, such as Tacloban City, were the media focus of the Haiyan response, 80% of affected



Map of Leyte

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households within 50 km of the storm path were in rural areas<sup>4</sup>.

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The city of Tacloban estimated that there were **13,297 informal settler households** prior to Haiyan, mostly along coastal areas.  
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## Coordination

As the central hub of coordination, Leyte, and more directly Tacloban, became known as ground zero for responding organizations. Many of the Shelter Cluster staff were based here and organizations gravitated toward Tacloban participate in sector discussions of strategy and direction. In addition to formal

<sup>1</sup> National Disaster Risk Reduction and Management Council. (2014). [Final Report Re Effects of Typhoon "Yolanda" \(Haiyan\)](#). National Disaster Risk Reduction and Management Council, Quezon City, Philippines.

<sup>2</sup> Philippine Statistics Authority. (2017) [Philippine Standard Geographic Code \(PSGC\)](#).

<sup>3</sup> Shelter Cluster. (2014). [Shelter Cluster Database](#).

<sup>4</sup> REACH. (2014). [Shelter and WASH Response Monitoring Typhoon Haiyan, Philippines, 2013 Final Report](#). Philippines Shelter Cluster and WASH Cluster.

coordination, the role of information coordination was equally important. Cluster meetings may have been the face of coordination, but evening gatherings at social venues in Tacloban facilitated meaningful connections and partnerships between organizations.

## Resettlement

Faced with the alternatives to reduce future disaster risk in the days following Haiyan, the City of Tacloban made the hard decision to relocate a sizeable percent of its population to land less prone to storm surge. In partnership with UN-Habitat, the local government released the Tacloban Recovery and Rehabilitation Plan (TRRP) in May 2014,

outlining plans for the resettlement of between 6,844 and 11,494 households<sup>1</sup>. This movement of nearly 20% of Tacloban's 221,174 population, has become a focal point of the Haiyan response and continues to build on humanitarian shelter assistance provided.

**Bottom:** The city of Tacloban estimated that there were 13,297 informal settler households prior to Haiyan, mostly along coastal areas.

**Left:** A ship remains grounded in Tacloban, washed ashore during the rising storm surge.

**Right:** Damage to one of Tacloban's shopping center.



<sup>1</sup> City Government of Tacloban. (2014) The Tacloban Recovery and Rehabilitation Plan: Shelter



Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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### Case 7: Tagpuro, Tacloban, Leyte

#### Overview

One of the hardest hit areas of Tacloban City was San Jose. Stretching out into the Gulf of Leyte on low ground, the area was inundated with storm surge during Haiyan. Its vulnerable location, along with political pushback to long standing informal settlement, led the city to seek relocation for households in San Jose.

The Tagpuro transitional site was started, in part, due to rising political pressure to accelerate the speed of reconstruction and relocation planned within Tacloban. The site in Tagpuro (population 677 before Haiyan) was one of the first projects to develop land in northern plots of the city. The project was initialized through the collaboration of 3 organizations in partnership with the Tacloban City Housing Office.

The shelters were intended to be used for a two-year period to transition relocation of families from coastal areas of Tacloban City to other permanent resettlement in the north. As permanent housing was constructed in the neighboring area, families were intended to leave the transitional site and move into relocation housing constructed by government agencies and other NGOs. In theory,



Map of project location  
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-  86 Households
-  P45,000 Materials
-  P30,000 Labor
-  4 Months

additional families would then move into the transitional shelters, beginning a new cycle. Families were anticipated to stay between 2 to 6 months at the transitional site.

An agreement was formed between the landowner and city for a 2-year period, at which point the shelters were supposed to be turned over the landowner for private rental and use. Construction of the 86 shelters took 5 weeks starting in August 2014. Shelters were constructed using coconut lumber, amakan



(woven thatch) walls and nipa (palm leave) roofing. Design and construction of the structures used light materials as the transitional site was expected to only require a short life span. The Department for Social Welfare and Development (DSWD) was responsible for selecting and moving families from San Jose.

## WASH

One of the challenges of the site was access to potable water. The City of Tacloban was required to truck in potable and non-potable water, delivery of which was noted as inconsistent. Expected water deliveries were supposed to occur 4 days per week, but 3 days was more common. While sufficient water was available for cooking, there were consistent shortages of washing and bathing water.

**Left:** Communal latrines were installed at the transitional site, however maintenance responsibilities were not addressed and several of the septic tanks had filled without being desludged within a year.

**Right:** Without available fresh water nearby, the City of Tacloban trucked water to the site; many beneficiaries expressed that deliveries are inconsistent.

**Bottom:** In the background, permanent houses rise nearby the transitional site.

Communal toilets were constructed concurrently to shelters by a partner organization. The lack of attendance to establishing management and responsibilities for these has led to deterioration of toilets and nearly half had clogged within a year of use, resulting in open defecation practices.



## Education and Livelihoods

The location of the transitional site nearly an hour from beneficiaries' original communities was the largest stress on households' access to services and livelihoods. In most cases, households noted that they were paying as much as 50% of income on travel expenses to send their children to schools near their old community or to return to economic opportunities within the city. While some schools existed near the transitional site, most households preferred to send their children to their previous school, particularly given that transitions occurred in the middle of the school year. Transitions to new schools in the north seemed to see increased enrollment rates after the start of a new school year.

## Uncertainty and Relocation

Despite planning efforts, stalls in permanent construction left many families in the transitional shelters for over a year. This unduly stressed households, resulting in many returning to poor shelter conditions in their original community while permanent homes were constructed. Confounding lacking services was poor communication to beneficiaries as to when completion of permanent houses was expected. Greater transparency in resettlements processes was a major barrier to sustainably transferring households.

## Strengths

- ✓ Use of amakan for walling and nipa for roofing provided excellent ventilation for shelters.
- ✓ Design of shelters were robust, including large concrete footings used to level structures on slopes and difficult site conditions.
- ✓ Establishment of transitional site management group advocated for rights of households with local government and assisted with incoming households being relocated to the site.

## Challenges and Lessons

- The site lacked access to supporting infrastructure, such as water and electrical systems, and was distanced from other services, such as schools and livelihoods.
- Land tenure agreements and shelters were not initially planned to be used beyond 2 years; delays in permanent construction suggest their use for 5+ years.
- Few of the households at the transitional site knew each other before and were from different communities, resulting in limited social cohesion.

**Top:** Most fisherfolk within the transitional site preferred to return to their original community because of unfamiliar fishing grounds near the transitional site.

**Bottom:** Difficult site conditions were overcome through the use of raise concrete footings to level the shelter floors.





A marker distinguishes a 'no-build zone' along the coast. The Philippine government issued a national directive prohibiting construction within 40 meters of the coast following Haiyan.



Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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### Case 8: Pago, Tanauan, Leyte

#### Overview

The coastal community of San Roque in Tanauan was left with nothing in the aftermath of Haiyan. Residents not living with 40 meters of the coast were allowed to return, but dozens of families were unable to return to the ‘no-build zone,’ and without anywhere to go, formed a tent city. During these early stages, the local government deemed these households a priority for shelter support given their inability to resettle previous land. This led to a public-private partnership between a government agency and NGO, who were able to eventually identify land inland in the community of Pago (population 917 before Haiyan).

Land at the relocation site was purchased from the municipality by the organization for the project and the government began site development shortly thereafter with ground breaking in March of 2014. The NGO’s role on the project involved community organizing and mobilization. Designs were developed based off of existing National Housing Authority (NHA) row house plans. The interior was designed to accommodate future expansion of a lofted second floor with a single



Map of project location

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-   
**365**  
 Households
-   
**P165,000**  
 Materials
-   
**P35,000**  
 Labor
-   
**36**  
 Months

reinforced concrete beam across the center of the units. A raffle was used to decide exact units that were given to beneficiaries. Toilets and septic tanks were included inside the provided housing units. Access to potable water was accessible through several wells, however there were concerns over groundwater contamination. The process of land titling for each household had not taken place within 3 years and concern was expressed by many beneficiaries whether, and how, this would occur.

## Sweat Equity

Notably, beneficiaries were required to contribute 1,500 labor hours to the project before final handover. This only included unskilled labor and skilled tasks were left to contracted labor. In addition, residents were required to go through a ‘value formation’ training, which focused on instilling a sense of community and covered maintenance.

## Relocation and Livelihoods

Despite mitigating storm surge risks, few new livelihoods were available for those households relocated. As fisherfolk, this meant that many had to travel far to reach their previous community of San Roque. As a result, most households were maintaining a shelter along the coast to store fishing equipment. In some cases, the new housing units were used infrequently because of this separation.

## Strengths

- ✓ Organization provided ‘values’ training, which focused on community cohesion and skills, such as savings, to support long term maintenance of housing.
- ✓ Housing shell used reinforced concrete beam for second floor, allowing beneficiaries to expand at later date using more cost effective timber flooring.

## Challenges and Lessons

- While the selected site removed the risk of storm surge from households previously located in coastal areas, the new location is prone to flooding.
- A majority of households were previously fisherfolk and the relocation to an inland site meant that many households maintained a second shelter along the coast in order to maintain their livelihood; no attempts were made to provide alternative livelihoods for those relocated.
- Use of contractor-built housing model resulted in poor construction quality in a number of units with little recourse for beneficiaries.

- Despite poor contractor construction quality, the regular involvement of beneficiaries on-site led to the recognition of construction flaws; future programs should seek to provide avenues for beneficiaries to report these claims and correct defects.

**Top:** Construction begins on housing units.

**Middle:** Colorful designs spot the project site.

**Bottom:** A beneficiary has added a second floor using remnants of their previous house and from a previously received shelter repair kit.





Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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## Case 9: New Kawayan, Tacloban, Leyte

### Overview

New Kawayan’s population of 543 was Tacloban’s smallest community prior to Haiyan. Still within Tacloban’s city limits, this rural farming community stands in stark contrast to the busy urban center of the city. The community is quickly changing with the extensive development plans for Tacloban’s northern communities. Parts of New Kawayan have been marked as sites for permanent resettlement.

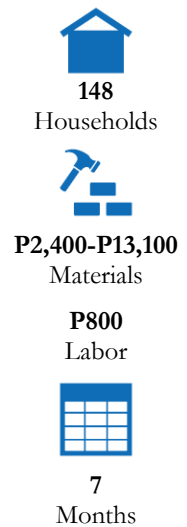
While other efforts focused on shelter and settlement for new relocation sites, there was also support aimed at providing self-recovery assistance to households in the existing community. This support aimed to repair and retrofit existing structures that survived Haiyan and provide sufficient materials for limited new construction. The assistance consisted of material distributions with assisted labor. Three packages of materials, composed of different quantities, were provided to homeowners as assistance starting in October 2014.

In early stages of planning households complained of potentially unfair distribution of assistance, leading the organization to provide



Map of project location

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blanket coverage to all households, regardless of income or damage. The determination of which package each household received was decided by the organization based on damage and family income. Labor for the project was provided by local carpenters hired through the organization at a fixed rate of P800 per shelter repair. Households were free to use the provided materials in any manner so long as they adhered to the Shelter Cluster ‘8 key messages,’ a check that was performed by the organization in early December 2014.

Material packages with fewer items were commonly used to extend houses. Intermediate packages were most frequently used for roofing repairs and minor walling, while the largest package was used for new construction. The materials included nails, corrugated galvanized iron (CGI) sheets, several coconut members, and plywood. In place of using sawn coconut members for posts, most households opted to reuse hardwood timber. As concrete was not included, posts were typically buried 1 meter into the ground for stability.

### Training

A one-day training on building practices led by the organization was provided to hired carpenters. Any household members were able to participate, and approximately 20 individual attended the training. In order to demonstrate concepts, the organization demonstrated skills on a scale model.



Scale model used to demonstration key messages for safer building construction.

Those that received training were then eligible to be hired for labor to install materials for each beneficiary household. The fixed cost of labor per household and initially large number of laborers led to most individuals dropping out of the program due to low wages. Those that were retained also complained that the wages provided later remained sub-standard. While fixed cost rates per shelter were observed to be successful in other programs, low rates were one reason attributed to low retention of trained labor in this case.

### Self-Recovery

A notable outcome of the shelter program was the impact of allowing households to self-select priorities. In particular, households were observed to have higher savings, even though incomes levels were one of the lowest of any communities studied. This can in part be attributed to the ability of households to better control shelter construction costs and is promising for future responses.



Materials were used for variety of purposes suited to the needs of each household.

### Strengths

- ✓ Training program used active demonstration to show safer building concepts using a scale model.
- ✓ Blanket coverage of 3 packages of shelter repair kits reduced conflicts of beneficiary selection and better fit individual needs.
- ✓ Despite having low incomes, households had some of the highest savings, attributed in part to control over prioritizing individual recovery needs.

### Challenges and Lessons

- Labor teams were paid per house (P800) and carpenters voiced that this resulted in sub-standard wage rates.
- Initial material quantities fit most household needs, but could have been adapted for more vulnerable households with senior citizens or persons with disabilities (PWDs)





Two stories shelters, such as the one shown, were commonly built in urban areas to provide additional living space and as a measure against flooding and storm surge.





Repair & Retrofit    Transitional    **Core/Progressive**    Rental    Hosting    Resettlement

## Case 10: Bagacay, Tacloban, Leyte

### Overview

The community of Bagacay, with a population of 3,936 is located north of Tacloban City, adjacent to the Philippine National Highway. Part of the community lies in a low lying area prone to storm surge while the other parts of the community lie on higher ground. This disparity in hazards places those near the coast at much higher risk, however land scarcity with the community meant that relocation options were not viable.

The shelter assistance program for Bagacay began in November 2014. Beneficiary selection used standard vulnerability criteria however the organization required that beneficiaries either own or could purchase land that was at least 30m<sup>2</sup>. In the event that a beneficiary could not obtain land, they were excluded from shelter assistance. While this policy ensured that households would not be evicted from newly constructed core shelters, it also was unable to target some of the poorest households in the community who lacked land.

Designed as a core shelter, the organization used an existing design that had been applied by its shelter assistance programs for more than a decade in the Philippines. The design



Map of project location

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150

Households



P100,000

Materials

P20,000

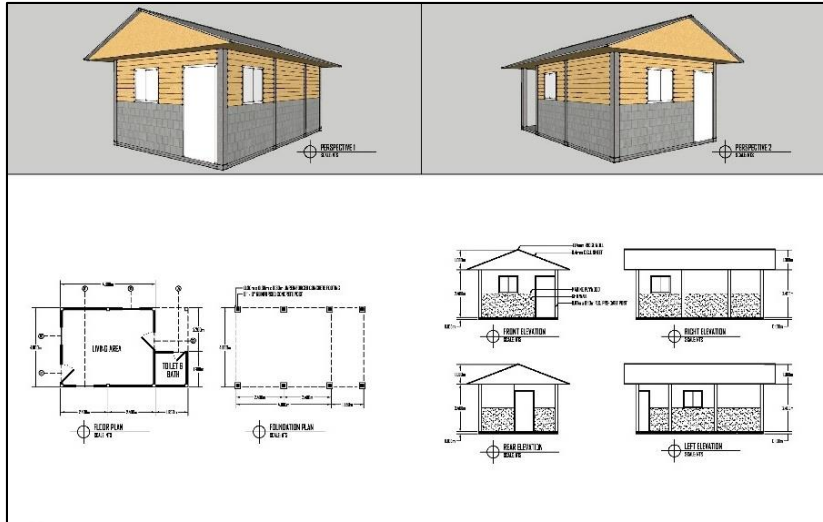
Labor



7

Months

featured concrete columns, a masonry skirt wall, and plywood walling. The large interiors were well suited to future addition of partitions and the place of doors and windows enabled easy expansion on to the front and back of shelters. Toilets and septic tanks were integrated into each shelter design; however, a kitchen area was not. Kitchens were usually the first expansions observed. A training on safe housing construction and disaster risk reduction was conducted for all beneficiaries on a weekly basis before the start of construction.



The core shelter design used a masonry skirt wall with timber frame, providing added strength with reduced cost.

### Materials and Labor

Materials were procured and delivered to site by the organization. Each beneficiary was responsible for inspecting materials upon receiving. Due to labor backlogs, it was common for materials to sit for several weeks before construction could begin on a beneficiary's shelter. This resulted in some materials being damaged due to poor storage or theft prior to installation. Future efforts to use centralized material distribution should stagger material deliveries to more closely align with construction start dates or provide tarps and other measures to protect materials.

Labor was hired using 'pakyaw' (fixed rate) contracts. A 10-day limit was placed on labor at which point the beneficiary assumed all labor costs in the event that shelter was not completed. Changes to the configuration were not permitted before or immediately after construction. In a number of cases, the 10-day labor limit was unable to finish the core shelter and beneficiaries were left to cover any remaining costs.

### Strengths

- ✓ Masonry skirt wall and painted plywood greatly increased the durability of shelters.
- ✓ Extensive beneficiary training on safer building practices was offered prior to construction to transfer knowledge.

- ✓ Shelters used precast concrete columns in place of timber for columns; mitigating termite concerns.

### Challenges and Lessons

- Beneficiaries expressed that the materials delivered were often insufficient to complete entire core shelter to specifications and that the allowed number of labor days (10 days) was too short for completion.
- Materials were often delivered too far in advance of construction and many beneficiaries failed to protect materials, leading to damage before installation.
- Beneficiaries were required to have a 30m<sup>2</sup> land plot for shelter, which often excluded the most vulnerable within the community.

A completed core shelter after completion.





Repair & Retrofit

Transitional

**Core/Progressive**

Rental

Hosting

Resettlement

## Case 11: San Agustin, Jaro, Leyte

### Overview

Lying inland in Leyte, San Agustin's population of 824 is located in the municipality of Jaro. Farming is the predominant livelihood and few other livelihood opportunities previously existed in this remote mountain community. The greater distance inland meant that the community received little early assistance from the government or organizations. Poor roads and frequently washed out bridges regularly disconnect the community from services and goods.

Following shelter assistance in other communities in Jaro, the organization entered to provide shelter support for San Agustin. Opting to provide core shelters, coconut lumber was selected as the most readily available material. Difficult access and cost of transportation were deciding factors in selecting coconut lumber for shelter designs.

Designs were developed from an earlier recovery project in another barangay in Jaro. The shelters featured large covered porches, and extended roofing to allow for significant open air covered spaces. To protect from weathering and termites, paint was provided, although not sufficient to cover the entire



Map of project location

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45

Households



**P80,000**  
Materials

**P20,000**  
Labor



9

Months

shelter. The organization selected to use vertical or horizontal timber planks for exterior walls. This was found to significantly improve the weatherproofing and proved better protection from rain over other alternatives such as amakan (woven thatch) or plywood. In comparison to other shelter assistance, the structures were much larger for household sizes, and several beneficiaries noted that they would plan to downsize the structures as future maintenance was required, in place to replacing elements due to cost constraints.

All labor costs for the houses were covered by the organization, however beneficiaries were required to dig the pit for the provided septic tank included with shelters.



Construction of shelter walls.

### Training and Certification

Carpenters used for construction were hired from multiple communities within the municipality. In partnership with the Philippine Technical Education and Skills Development Authority (TESDA), the organization covered each laborer's NC-II carpenter's certification. This training program was field based, allowing workers to build shelters while being overseen by a TESDA representative. In comparison to other training programs offered through NGOs, the NC-II certification is universally recognized across the Philippines (and internationally in some

countries), allowing those that participated the ability to have demonstrated competencies for future work. This was shown to be of the one most effective components of the shelter program and one of the few that opted to partner with the Philippine government for certifications.

### Strengths

- ✓ Use of coconut lumber planks for siding proved to keep water out better than plywood or amakan alternatives.
- ✓ Paint provided to beneficiaries allowed for more aesthetically pleasing structures and protected coconut lumber.
- ✓ Training program worked through TESDA in order to issue NC-II carpentry certificate that was universally recognized within the Philippines.

### Challenges and Lessons

- Timber posts were embedded in concrete, making their replacement difficult; straps or other connections could have better enabled replacement of worn posts in the future.
- While latrines were attached in to the core shelters, coconut lumber was used for the walling materials which deteriorated more rapidly due to washing and bathing water.



The incorporation of covered, open air spaces into shelter designs allowed for more livable conditions that increased beneficiary satisfaction.



Repair & Retrofit	Transitional	<b>Core/Progressive</b>	Rental	Hosting	Resettlement
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## Case 12: San Jose, Tacloban, Leyte

### Overview

Situated in a densely populated neighborhood of Tacloban, San Jose lies adjacent to the coast. The 2,548 population of barangay 83C were at the center of the most severe damage, but one of the last communities within Tacloban to be reached by shelter assistance. Unlike other communities in Tacloban, none of the households were targeted for relocation. 3 NGOs entered to provide shelter support, each targeting different puroks, or neighborhoods, within the community. This case will discuss one of these three organizations and their approach to shelter.

Planning for the project started in late 2014 and construction on the first homes began in December, just over a year after Haiyan. While labeled core shelters, the approach sought to provide permanent housing solutions for households. Shelter designs were adapted from transitional shelters built in northern sites by the organization earlier in the recovery phase. Additional hazard resistant design features such as strapping and increase member sizes were included to improve the expected lifespan of shelters. Two designs, a single story and two story model, were used. The two story shelter



Map of project location

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-  42 Households
-  P80,000 Materials
-  P20,000 Labor
-  11 Months

was used in instances where insufficient land was available. Single story shelters were provided for households that had larger plots, or households that were unable to use stairs on a regular basis, such as elderly and persons with disabilities (PWDs). All of the shelters were constructed through a direct build approach and beneficiaries were not required to participate during construction.

### A Volunteer Model

Labor was provided through a combination of foreign volunteers and local skilled carpenters.

Tasks requiring more technical knowledge and at height, such as roofing, were completed by local labor. Foundation work, framing, and other site tasks were completed by volunteers. Close interactions between beneficiaries and volunteers resulted in strong relationships and trust between the organization and beneficiaries. Despite these benefits, many households that were not selected expressed concerns over the intrusion of a large number of international volunteers and noted that there was a sense of bias in support, reinforced by the extensive attention given to those selected. Organizations using a volunteer model should be acutely aware of the implications of using a disparity in assistance with communities and should seek to promote strong relationships with households not selected as beneficiaries.

### Strengths

- ✓ Two story structures were well suited to urban context given limited land availability and protected household items against regular flooding.
- ✓ Time and investment of volunteers built strong relationship between organization and beneficiaries.

### Challenges and Lessons

- Beneficiary selection process did not survey all households within the community and transparency of selection could have reduced number of conflicts.
- Use of double walling (interior and exterior) in urban environment led to rodents within walling.
- Speed of construction was limited by linear progression of shelter construction and number of skilled labor and volunteers.

**Top:** Two story shelters provided additional protection against perennial flooding.

**Middle:** Alternative single story shelter for vulnerable households, such as elderly and PWDs.

**Bottom:** Shelters included extensive concrete foundations to support overturning forces of wind on two story structures.





Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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## Case 13: Magallanes, Tacloban, Leyte

### Overview

Composed of mostly fisherfolk and fish vendors, Magallanes is located along a coastal belt in Tacloban City. With approximately half of the community’s population of 1,304 (barangay 52) falling in the declared 40 meter ‘no-build zone’ along the coast, households were left with an uncertain future in the aftermath of Haiyan. A large percentage of the residents were targeted for future relocation to north of Tacloban City, however dates of transfer were highly uncertain. Further, others within the community were allowed to stay, but still had significant shelter needs.

The organization’s shelter program sought to tackle these complex, and unique, shelter needs through multiple modalities including renting, hosting, repair & retrofit, and new construction. The option of which modality to use was based on land tenure, damage to the previous house, but also notably allowed beneficiaries to select the best option for their needs. Beneficiaries were also allowed to choose between direct build assistance and cash transfers. Cash transfers were completed through Palawan Express – a local money



Map of project location

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199

Households



P18,000-P72,000

Materials

P0-P20,000

Labor



18

Months

transfer agency. In total 88% of beneficiaries opted for cash transfers. Both those selecting direct build and cash transfers, said that they felt the delivery method was best suited to their needs.

### In-Situ Building

For households located in the build zone, 4 cash transfer packages were offered: totally damaged, major damage, minor damage, and roof sheet repair only. While the evaluation criteria were different for these four categories,

the assistance provided was based on two packages. Major damage and totally damaged households received the same value of assistance, while minor damage and households with only roof repairs received the same value of assistance. These are shown below.

**Summary of shelter assistance categories.**

	<b>Major damage</b>	<b>Minor damage</b>
<b>Tranche 1</b>	P16,500	P10,000 +CGI
<b>Tranche 2</b>	P13,100 +CGI	P10,000
<b>Tranche 3</b>	3,400	Not applicable

CGI sheets were provided directly to households as quality material could not be found locally and had to be imported from other regions during early stages of recovery. For each level of assistance, 20 CGI sheets were provided along with 2 plain steel sheets.

A tranche approach was used to ensure that beneficiaries incorporated safer building techniques. Monitoring at the completion of each tranche was completed by engineers from the organization. The organization conducted a training with carpenters in order to ensure that builders were qualified.

Latrines were also bundled with shelter assistance and offered through a direct build or cash transfer option. 62% of beneficiaries opted for the cash transfer option for latrines. Cash transfers were higher in other regions, however Tacloban’s high water table and complex urban environment meant that greater technical assistance was required for many households, accounting for the lower number of beneficiaries using the cash transfer option for WASH infrastructure.

In addition to a direct build option, 3 cash transfer packages were offered based on household needs. These included: major damage, minor damage, and vent pipe only. If only vent pipes were needed, P1,000 was provided. For both major and minor damages, a toilet bowl was also provided. The value of

major and minor packages is presented in the table below.

**Summary of WASH assistance categories.**

<b>Major damage</b>	<b>Minor damage</b>
P10,000 + CGI + toilet bowl	P6,800 + CGI + toilet bowl

**Transitional Shelter**

For those households in the ‘no-build zone’ they were provided the option to relocate to a transitional site. By moving to this site, the local government ensured that these households would not lose eligibility to be moved to permanent resettlement sites. Construction of these shelters was completed through direct build.

**Rental and Hosting Support**

Aside from the availability of moving to transitional housing, beneficiaries could also opt for rental subsidies or hosting support. Apartment or housing rental subsidies were for P3,000/month for 2 years (P72,000 total). In place of renting existing units, beneficiaries could use support to rent land (P14,400 for 2 years) and receive P33,000 for shelter construction support. Hosting family support covered the same amount, however at least 50% was supposed to be used by the hosting family for upgrades. Both rental and hosting support also provided to up P10,000 for WASH upgrades and materials.

In total, 18% of beneficiaries claimed apartment or housing rental subsidies, 22% claimed land rental and construction support, and 9% claimed hosting support. In most cases beneficiaries were able to secure shelter through these modalities for less than the allocated amounts and were able to put extra cash toward education and medical expenses as well as livelihoods. Despite these successes, most households that were offered shelter outside the community returned to the ‘no-build zone’ within a year because of lacking economic opportunities and social ties in their new locations.



## Strengths

- ✓ Available of rental subsidies, hosting support, off-site transitional shelter, and multiple packages of on-site assistance allowed for modalities to be targeted to individual household needs.
- ✓ Construction of communal spaces, such as basketball courts provided buffer along social zones while also creating more livable spaces.
- ✓ Cash transfers were found to be especially effective as beneficiaries were able to find materials and labor at reduced costs, allowing for excess cash to support livelihoods, education, and medical expenses.

## Challenges and Lessons

- Most households receiving hosting or rental support had returned to original sites in the ‘no-build zone’ within a year because of lacking economic opportunities in nearby communities.
- Contract for land on transitional site was only secured for 2 years and was misaligned with pace of permanent construction at government relocation sites, with concerns expressed over continued ability to house beneficiaries in interim period.

**Right:** A beneficiary used a minor damage cash transfer to upgrade and repair their house to a second story to increase living space.

**Bottom:** In addition to shelter, the organization also targeted community infrastructure, such as basketball courts.





Shelter partners emphasized the importance of stronger and safer building practices, including strapping, sway bracing between trusses, and cleats.



Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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## Case 14: San Jose, Tacloban, Leyte

### Overview

The community of San Jose lies near Tacloban’s airport, reaching out into the Gulf of Leyte. The population of 1,572 (barangay 85), saw the worst of Haiyan, the flat geography providing little protection from the immense storm surge. Designated for relocation after Haiyan due to its high vulnerability to future storm surge, the government prohibited the use of ‘permanent’ materials, limiting the assistance that organizations were able to provide.

Entering to provide temporary shelter assistance to residents, the organization utilized conditional cash grants aimed to repair partial damage to standing structures, and a starting place for those with no home left. The lead organization selected to partner with a Philippine-based NGO as an implementing partner, leveraging their past disaster experience in the Philippines.

### Condition Cash Grants

Cash grants varied between P6,000 and P20,000. For vulnerable households, an additional P1,000 was added to the value of assistance to cover additional labor costs. In place of using direct cash transfers, the



Map of project location

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-   
**234**  
 Households
-   
**P6,000-P20,000**  
 Materials
-   
**P0-P1,000**  
 Labor
-   
**5**  
 Months

organization opted for cash vouchers and worked with suppliers to bring materials to the community – a ‘mobile store’ in essence. Different from material kits, beneficiaries were able to hand pick individual materials up to their grant value. This allowed for greater choice and also suited materials to the individual needs of households. For internally displaced persons (IDPs) still living in tents, the value of the assistance was increased to P20,000.

## Local Oversight

Prior to distribution of kits, clusters of 25-30 households elected a ‘build back safer committee representative.’ More often than not, these ended up being local purok, or neighborhood, leaders. These selected representatives were then trained on safer construction techniques and this knowledge was then passed to residents. Training sessions involved the use of a scaled model shelter to demonstrate concepts, incorporating active components.

No labor assistance was grouped with the conditional cash transfer, requiring that households hire their own labor. This was difficult for many beneficiaries given sharp increases in labor demand, and subsequently daily labor rates. Similar approaches taken to negotiate material pricing with vendors, could have been applied to labor to control rates.

## Uncertainty and Relocation

A challenge both for the organization providing shelter assistance, and households, was the uncertainty of relocation. As planning efforts emerged from the City of Tacloban, all households in San Jose were targeted for resettlement to sites in northern Tacloban. Lacking communication from the local government left many households unsure whether to invest in shelter in their long standing place of residence or wait until government housing assistance would be provided. It took more than a year before households started to be relocated to transitional sites in the north; the process would take much longer for other households. In the face of the unknown, many decided to forego investment in previous houses – the resulting shelter assistance proved an effective solution given this response from households.

## Strengths

- ✓ Delegation of construction inspection to household cluster representatives was effective and instilled sense of community responsibility in safer building.

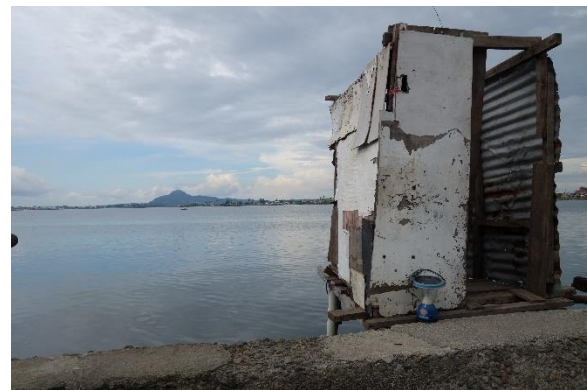
- ✓ Organization was able to incorporate a number of safer building messages despite government restrictions on ‘permanent’ materials in the ‘no-build zone’; the use of timber anchored foundations instead of concrete footings was one example.
- ✓ Cash-based approach provided greater household decision-making.
- ✓ Local-based organization led advocacy for use of light material in ‘no-build zone.’

## Challenges and Lessons

- WASH assistance was a missed opportunity as most coastal household had toilets without any containment.
- Some beneficiaries sold their vouchers, however it is estimated that less than 10% did so, based on organizational reporting.

**Top: Coastal households lacked containment for sanitation facilities.**

**Bottom: In addition to traditional shelter needs, many beneficiaries were able to use materials for sari-sari storefronts.**



One of the largest challenges facing local governments and organizations was finding shelter solutions for households living in the 'no-build zone' along coastal areas.







Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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## Case 15: Hiabangan, Dagami, Leyte

### Overview

Located south of Tacloban in the Municipality of Dagami, the community of Hiabangan, with a population of 958, is situated in the foothills of the mountains. Its geography is distinctly different from the coastal communities that comprise most settlement in Leyte. Being rural, the majority of habitants are farmers.

The organization began operations early in the response, providing non-food items (NFIs) during the emergency phase to households in Hiabangan. Further assistance evolved from these early efforts into providing more comprehensive shelter assistance. Two shelter options were provided to meet different household needs: (1) shelter repair kits and (1) direct-build core shelters. Over 90% of assistance consisted of repair kits with distribution occurring in the middle of 2014. There was a deliberate emphasis on self-recovery efforts, which was well suited to the self-sufficient mindset of this rural community.

Shelter designs and applications of the distributed materials varied widely across households. In addition to the repair kits, a limited number of full structures were constructed for more vulnerable families in the



Map of project location

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165

Households



15,000-P80,000

Materials

P0-P20,000

Labor



12

Months

community. These were built using coconut lumber, plywood, and a gable style roof.

As land conflicts did not arise after Haiyan in Hiabangan, the organization did not intervene in housing, land, and property (HLP) issues. Despite the absence of conflicts, few of the households in Hiabangan own the land they reside on, but do have permission, in most cases, to occupy the space.

### Indigenous Coping Strategies

Lying in the highlands, Hiabangan is faced with reoccurring flooding. Despite the significant

wind damage from Haiyan, flooding hazards more regularly impact households, with a majority living within a floodplain. An interesting coping strategy for these reoccurring hazards was the practice of *bayaniban*, or moving houses in the spirit of community collaboration. In particular, the absence of foundations often meant that houses would wash downstream intact, only to be picked back up and moved back on-site. While these practices may or may not be sustainable, they certainly pose interesting implications for how organizations think of coping and adaptation strategies for shelter.

### Strengths

- ✓ Material kits enabled beneficiaries to combine with personal resources for more cohesive, and larger, shelter.
- ✓ Combined direct build and material kit modalities assisted large percentage of population while ensuring that vulnerable households received extra support, ensuring adequate and equitable shelter for all.

### Challenges and Lessons

- Decision not to relocate some households adjacent to riverbeds led to damage to shelters and livestock in flood event within a year; while not necessary to relocate all households in high risk areas, future efforts should focus on preparatory strategies to strengthen shelters and livelihoods before these hazard events.
- Raised floors provided protection from flood water in high risk households, but flooring deteriorated rapidly and had high deflection because of thin plywood.

**Top (2 photos):** A limited number of core shelters shown were constructed for the most vulnerable families.

**Bottom (2 photos):** Shelter materials kits were used in a variety of ways including repairing damaged houses and adding sari-sari storefront to existing houses.







Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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## Case 16: Saghakan, Tacloban, Leyte

### Overview

As an urban community within Tacloban City, Saghakan borders Real Street, a busy thoroughfare that connects the city center to the airport and Tacloban’s bustling mall. The population of 1,434 (barangay 62) and nearby communities have swelled in growth over the last decade as Tacloban continues to develop. Saghakan suffered some of the greatest loss of life during Haiyan, a result of the nearly 6m (20ft) storm surge. Seeking to provide integrated recovery solutions, the organization providing assistance linked shelter with WASH, protection, and disaster risk reduction (DRR) support.

### Tailored Solutions

Shelter support provided to beneficiaries included support for land rentals, hosting, repair and retrofits, and new construction. For repairs and retrofits, the organization shouldered the cost of materials and labor. Inspections were completed both prior to, and during construction, to ensure that upgrades to damaged structures would improve the strength and livability of the shelter. A range of innovative designs were developed for new construction, including duplexes and two story



Map of project location

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484

Households



P15,000-P180,000

Materials

P6,000-P50,000

Labor



19

Months

shelters, to address challenges of working in an urban context. In most cases, land agreements were secured for between 5 and 10 years for new construction. The program uniquely selected to provide hard wood in place of coconut lumber for greater durability and strength of structures. A number of other hazard-resistant features, including strapping, concrete foundations, and bracing were added to new and existing shelters.

Rental support was aimed at restoring the available stock of rental properties available.



**Top:** Duplexes, two story shelters, and a variety of alternatives assisted meet the complex urban environment of Saghakan.

**Bottom:** A pair of broken and unused rainwater collection tanks highlight one of the few flaws of assistance provided.

This assistance consisted of reconstructing shelters for landlords and securing 5-year rental agreements for households that were previously renters. Hosting support was yet another means of tackling shelter needs by placing families in existing housing units that were partially damaged. In many cases hosting arrangements have evolved into more permanent arrangements between family members sharing a house.

The organization also worked closely with hired skilled labor to develop contracting teams for the large amount of infrastructure construction needed. These teams were trained on financial management and estimating techniques, eventually allowing the organization to bid out clusters of shelters to labor teams.

### **Protection**

One of central themes of the shelter approach that was different from other programs was a focus on protection issues. Women and children were both consulted separately to facilitate feedback in the development of shelter designs. Open spaces were constructed for children and solar street lighting added to reduce previously high rates of domestic violence and assaults at night.

### **Disaster Risk Reduction**

Support also targeted DRR measures within Saghakan, including preparedness equipment, early warning alerts, and evacuation drills. A community wide evacuation drill was carried out which aimed to better inform households of where they should head during oncoming typhoons or other disasters.

### **WASH**

Latrines were included in all new construction. During observations one year after construction, most toilets appeared to have backed up due the site's high water table. In other projects conducted in adjacent communities raised septic tanks appeared to be one method of improving the performance and functionality of systems.

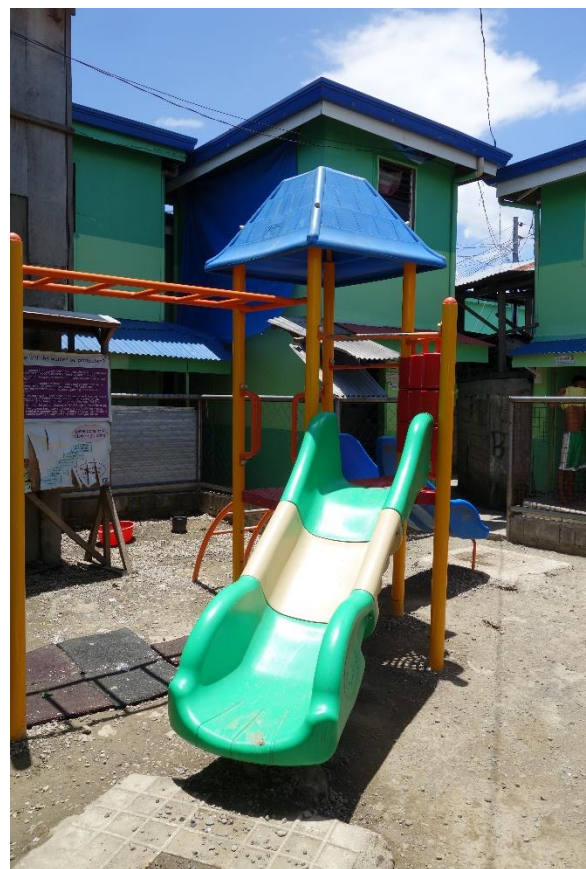
Rainwater collection systems were also provided to each household; however, these saw limited use. Pipe breaks and nearby sustainable sources of water were the two primary reasons these were not used.

### Strengths

- ✓ Protection was addressed in multiple dimensions of shelter and settlement, including interior partitions, solar street lighting, child-friendly play spaces, and seminars.
- ✓ Similar to other urban approaches, two story structures were able to meet household needs with limited available land.
- ✓ Inclusion of women and children into decision-making led to creation of child-friendly spaces, including playgrounds and open spaces; organization encourage involvement of women in construction sector.
- ✓ Creation of homeowners' associations allowed beneficiaries to pool capital in order to seek a bank loan for purchasing land.
- ✓ Availability of land rental support, hosting support, off-site transitional shelter, and 3 packages ranging from roofing repair kits to cores shelters, allowed for modalities to be targeted to individual household needs.

### Challenges and Lessons

- High water table in community led to the failure of over 50% of septic tanks; raised tanks may have been an alternative solution to improve performance.
- Rainwater collection systems were not used by households because of other sustainable sources of water; failure to fix pipe breaks were another reason these were not used.



Top: Each cluster of households was able to select a color to paint their shelter.

Bottom: A key feature of the program was the development of child-friendly spaces, such as the one shown.

A carpenter installs floor joists on a shelter. Training of local carpenters, laborers, plumbers, electricians was a major objective for shelter partners.

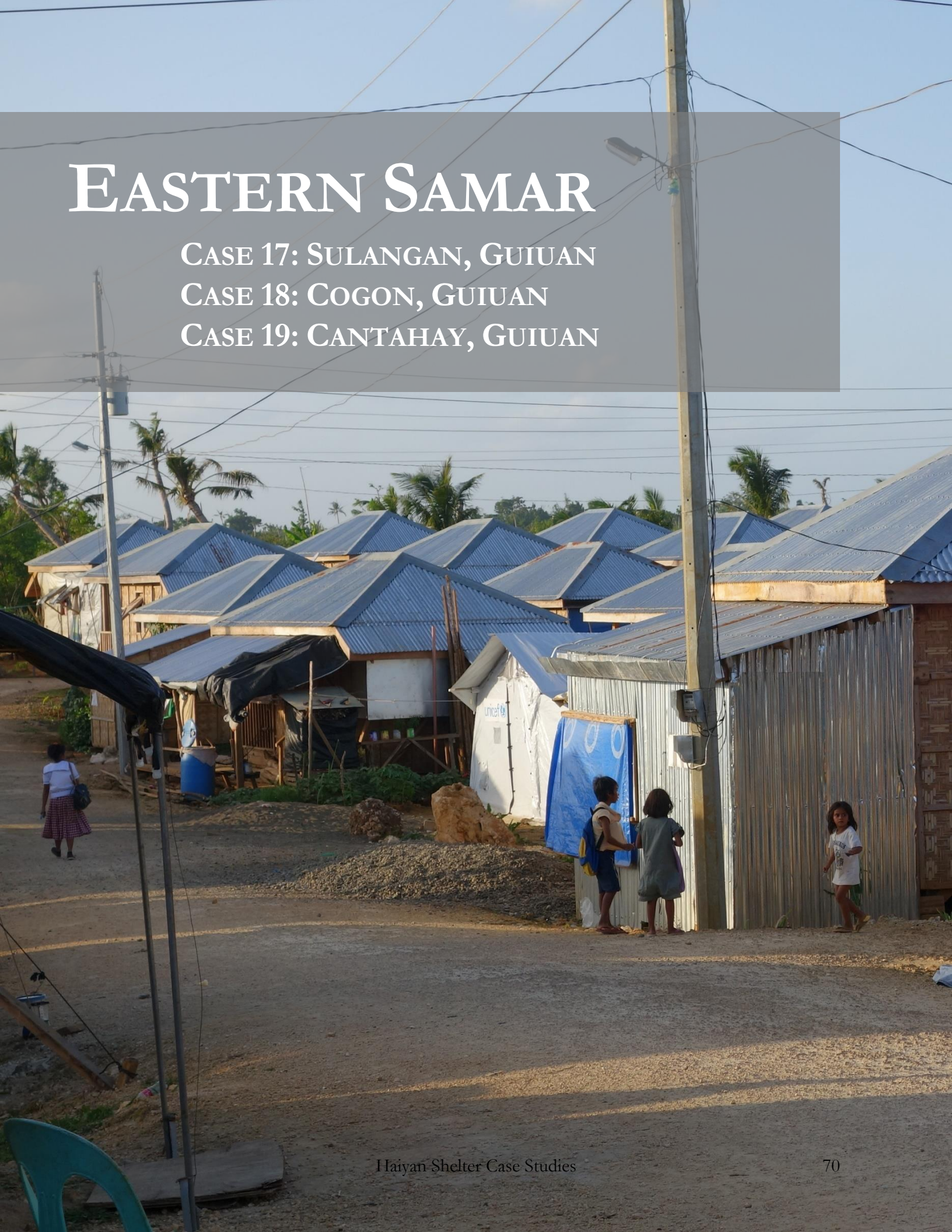


# EASTERN SAMAR

CASE 17: SULANGAN, GUIUAN

CASE 18: COGON, GUIUAN

CASE 19: CANTAHAY, GUIUAN





## Eastern Samar Overview

As one of the easternmost provinces in the Philippines, Eastern Samar rests at the edge of the vast Pacific Ocean. Fishing and coconut farming were the two predominant industries prior to Haiyan, both heavily affected by the storm's damage. The low lying communities were inundated with storm surge in excess of 3m (10ft). Peak wind speeds were in excess of 315kph (195mph) lashed existing infrastructure. While the response here exhibited similar themes to other provinces, rural settlement patterns create different needs for affected populations, and thus necessitated different implementation strategies.

The province became a focus point for shelter assistance given its notoriety as Haiyan's first landfall, bearing the brunt of the storm. During early stages of the response, Guiuan was a 5 (or more) hour drive from the nearest airport in Tacloban, and its isolation affected shelter logistics and strategy. Guiuan does possess its own airport runway that was used selectively during the immediate days after Haiyan, however no commercial airlines fly into the airport. It also has a small port, however, it sees limited sea traffic from other islands and road infrastructure is Guiuan's primary connection to goods. The main thoroughfare highway was undergoing major construction and improvements at the time of Haiyan, and was a constraint on programs transporting materials and supplies from the regional hubs of Tacloban and Borongan.

### Need and Response

27,699 houses were partially damaged and 33,972 houses were totally damaged in the province of Eastern Samar following Haiyan<sup>1</sup>. 47,740 households were targeted for shelter assistance by 16 organizations. The 3 cases presented in this section were selected in the Municipality of Guiuan, in part due to the large presence of need and assistance provided here.

<sup>1</sup> Shelter Cluster. (2014). [Shelter Cluster Database](#).



Map of Eastern Samar

© Eugene Alvin Villar, 2003

Of the 61,671 households affected in Eastern Samar, 11,609, or 19%, were located in Guiuan.

### Coordination

While the Shelter Cluster maintained a hub in Guiuan for the first year of the response and a Humanitarian Shelter Working Group (HWSG) was maintained informally afterwards, the geographic isolation and low population density of Eastern Samar meant informal ties and government leadership overshadowed much of Cluster coordination efforts. The Municipal Disaster Risk Reduction and Management Office (MDRRMO) of Guiuan took the lead role in coordinating recovery efforts and established a robust plan to tackle reconstruction activities. The rural context of Guiuan, and the presence of fewer shelter organizations, eased coordination challenges that were seen in other provinces. In

order to avoid duplication, organizations relied on geographically distancing themselves from other shelter programs. While this wasn't always possible in urban contexts, such as Tacloban, the ability to disperse placed less stress on coordination demands.

### Rural Settlement

Guiuan is an upcoming center of development, but the majority of the municipality consists of rural households. Self-recovery assistance was the most predominant modality used to meet the needs of households, partly due to less complexity with land rights and relocation. Some coastal households were required to relocate, but the majority within the region were able to return to their existing sites, allowing for in-situ building. One example of the relocation used in Guiuan is highlighted in Case 18. Both of the other cases leveraged household's resourcefulness in procuring materials and hiring of labor.

Logistically, the rural context necessitated that organizations approach shelter as one component of a larger recovery agenda. Existing infrastructure, and shelter, was often less robust before Haiyan and there was a large knowledge skills gap among many households.

**Left:** Remnants of a house are a reminder of the storm surge that swept through Guiuan.

**Right:** Coconut lumber was abundantly available in Eastern Samar where coconut farming was one of the most common livelihoods before Haiyan.

**Bottom:** Unlike other urban contexts, Guiuan and other rural areas often provided exceptions to the 'no-build zone.'







Repair & Retrofit    Transitional    **Core/Progressive**    Rental    Hosting    Resettlement

## Case 17: Sulangan, Guiuan, Eastern Samar

### Overview

The community of Sulangan lies at the tip of Eastern Samar. The majority of the population of 3,597 live in the densely populated town center; however, a significant number of families live in dispersed settlements along the coast. Prior to Haiyan, most residents were fishermen and coconut farmers; livelihoods that were heavily impacted by damage to fishing boats and coconut trees. Connected through the Catholic church, two partner organizations entered to provide shelter assistance. The integrated program focused on shelter, WASH, livelihood, and education support. Flexible donor funding and a planned timeline of 3 years allowed for greater depth of resilience building activities and inclusion of disaster risk reduction principles across sectors.

During early months, the lead organization led community mapping exercises to identify damaged houses. This activity was intended to provide risk awareness of where damage occurred within the community and also provide a participative beneficiary selection process. Lists of damaged households were publically posted prior to finalizing. Several pilot houses were constructed following these



Map of project location

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63

Households



P55,000-P144,00

Materials

P20,000-P44,000

Labor



36

Months

exercises in order to solicit feedback from carpenters on ways to improve designs and reduce cost. Focus groups with men and women were conducted separately to identify desirable housing traits to include in designs, based on the pilot houses. Several sets of timber and masonry designs were finalized from this feedback. Additional repair & retrofit packages were also later developed for households with partial damage. The program notably used the National Building Code of the Philippines as the standard to which all housing was designed.

## A Homeowner-Driven Approach

The shelter program utilized a homeowner-driven approach in order to manage construction activities. In consultation with an architect from the organization, each beneficiary was allowed to select the arrangement of select housing components, such as windows and doors. Beneficiaries were also allowed to select either a concrete or timber veranda. Beneficiaries could opt to contribute personal funds and select a larger floorplan if desired. While these additional material and labor costs were the responsibility of the beneficiary household, the design costs were covered by the organization.



Poster of available design options available.

Those households located in the less developed areas of the community were targeted for timber designs and those in the more densely populated areas were targeted for confined masonry and reinforced concrete moment frame structures. Designs allowed for vertical and lateral expansions by homeowners at a later time. For example, column reinforcement was extended vertically to allow for continuation into second story columns in the future.

Each beneficiary was responsible for selecting their own local builder. This leveraged local ties and was intended to build trust between the beneficiary and builder. The organization also maintained a list of trained builders in order to pre-qualify carpenters and masons for construction in the event that the beneficiary was unable to find a builder. Following

selection, both the beneficiary and the builder were trained by the organization on safer building techniques. The beneficiary training focused on identifying quality building materials and a basic overview of key features required for construction. One example, was the need to ensure that reinforcement was included on all sides of openings, such as windows. The builder training, in contrast, covered more technical aspects of building and involved both a lecture and demonstration component. Batches of 10 households were trained at a time.



Demonstration training for block laying.

For construction, the organization provided cash transfers in 4 tranches. These corresponded to work packages for: (1) foundations and site work, (2) columns and walls, and (3) roofing and finishes. The fourth tranche was a 'builder's hold back,' intended to ensure that the builder completed the entire scope of work. At completion of each tranche the beneficiary would request an inspection by an engineer representative from the organization. Periodic inspections at other times also occurred, but were not scheduled. If any aspects of the construction were found to be deficient by the inspection, the beneficiary was responsible fixing issues. Any costs associated with rework were the responsibility of the beneficiary and builder. Beneficiaries were encouraged not to pay builders upfront in order to ensure that construction met



Alternative timber design house with masonry skirt.

requirements, however payment for materials upfront was commonly needed as local builders often lacked the capital to front these costs. Upon satisfactory completion of a tranche, cash and the work package for the next phase of construction was released.

### WASH and Livelihoods

The shelter program notably integrated WASH and livelihoods. For households lacking toilets, a separate package of two tranches was provided to build a septic tank and walls. Late in the project, these cash transfers were included with shelter tranches. Toilets were advised to be detached from the house for structural reasons, however final determination was the beneficiary's decision. Further, livelihood assistance strengthened and diversified income opportunities, including the following groups: Small Business Women's Association (SBWA), Garments Designers' Association (GDA), Creative and Resilient Entrepreneurs for Development (CREeD), and Comverse Fisherfolks' Association (CFA).

### Construction Training Center

In addition to providing training to builders involved in housing being constructed, the organization also partnered with Eastern Visayas State University (EVSU) and the Philippine Technical Education and Skills Development Authority (TESDA) to develop a training facility for carpenters and masons. The organization assisted in reviewing existing TESDA curriculum and constructed

demonstration facilities that showed 6 phases of construction on a housing unit. These efforts have helped to sustainably promote improved skills development in the region.

### Strengths

- ✓ High level of oversight during construction led to high quality of housing units.
- ✓ In the absence of evacuation centers in the area, constructed masonry houses now serve as safe location for evacuation.
- ✓ Designs accounted for expansions, promoting safer additions.
- ✓ Variety of tailored designs were able to better suit needs of households, including two story houses for those with limited land and masonry for fire safety in densely settled areas.

### Challenges

- Estimated cost of materials were often misaligned with market prices, leading to inadequate funds for beneficiary to purchase needed materials for tranches.
- Heavy investment in early feedback and higher than expected shelter costs reduced the final number of beneficiary households and reduced available scope of houses.
- Later designs were notably less robust due to reduced budget, leading to higher dissatisfaction of beneficiaries receiving assistance during later phases.



Shelter design developed in later phase under reduced budget.

All shelter programs targeted achieving the Sphere Standard of a minimum covered floor area of 3.5m<sup>2</sup> per person.





Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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## Case 18: Cogon, Guiuan, Eastern Samar

### Overview

Following Haiyan, a number of households in the Municipality of Guiuan were not permitted to return to their previous living sites after the local government unit (LGU) began enforcing a 40 meter no-build zone. The largest number of individuals impacted previously lived along a jetty extending from shore; this area was deemed unsafe for return and redevelopment. These households spent the first year living in a tent city that arose while the municipality and international organizations developed plans to develop a transitional site and long-term resettlement options were considered. Cogon, a community with population of 1,146, was eventually selected.

From initial planning efforts, the transitional site was intended to be a multi-agency effort. One organization took the lead on shelter activities, while two other organizations aimed to provide water and sanitation infrastructure. Other partners brought in included the Department of Science and Technology (DST) for hazard and vulnerability analysis, the Rural Development Association (RDA) for disaster risk reduction activities, and the Department for Social Welfare and Development (DSWD)



Map of project location

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133

Households



P61,000  
Materials

P16,000  
Labor



12

Months

for coordination and identification of beneficiaries. An additional two organizations partnered to focus on enterprise development and livelihoods.

A suitable site was identified and construction began approximately 10 months after Haiyan. The transitional shelters were completed within 2 months and WASH infrastructure was installed in the months following. The shelter designs made use of coconut lumber with amakan walling along with corrugated galvanized iron (CGI) roofing and included a

small front porch with a hanging kitchen attached to the back of the units. The shelters also included steel strapping across roofing edges that was anchored to concrete foundations in order to tie down components. These were directly bolted into roof members. The organization directly hired labor for construction and oversaw field completion.

### **WASH Management Hurdles**

Following completion of all transitional shelters, two partner organizations provided water and sanitation infrastructure to support the new site. One organization targeted water infrastructure through the installation of a central well with electric pump and several storage tanks. Despite the investment of this infrastructure, the cost of use and maintenance was prohibitive for most households who refused to pay the needed operational costs of P100/month. As a result, the system has not been used and nearby wells have become the primary source of water.

There were also challenges with the implementation of sanitation infrastructure – the second partner organization opted to use plastic barrel drums for septic tanks. The small size of these tanks and clay soil conditions led to these systems backing up shortly after commissioning. Most households removed these systems and replaced them with unlined pits for better percolation.



The site water storage and pump system that has gone unused.

### **Transition to Permanent Housing**

Despite initial hurdles to transfer land ownership to beneficiaries, the LGU was making progress to establish a payment plan. Land ownership payments had yet to start at the time of observation, but it was expected that each household would pay P50/month over a period of 18 years for a total of P10,800 to titling. Further, the LGU was seeking additional funding from the national level in order to start construction of permanent homes to replace the transitional shelters. Each permanent house is expected to be built on the same site as the transitional shelter. These permanent houses will be constructed in batches, transferring families to a central bunk house that was constructed in the center of the transitional site. As houses are completed, households will move into their newly completed units while the next batch is transitioned to the bunk house.



Transitional bunk house to be used while permanent houses are constructed.

### **Community Infrastructure**

The transitional site also developed other infrastructure, including a social enterprise hall for women and basketball courts for children. Unlined drainage ditches were also installed on the site with the intention that these could be upgraded to more permanent, lined drainage as future site development continued.

## Strengths

- ✓ Project relocated households in the no-build zone to safe location.
- ✓ Project included robust designs, included steel straps tied from foundation over roofing and double member trusses.
- ✓ Shelters included special features for persons with disabilities (PWDs), such as access ramps instead of stairs.

## Challenges

- Beneficiaries noted that water passed through the amakan walls when it rained, resulting in most placing plastic tarps over walls, reducing ventilation.

- Installed septic tanks failed within the first 2 months of use due to poor soil conditions and inadequate sizing.
- Untreated coconut lumber showed significant deterioration from termites within the first 2 years on most shelters.
- Water infrastructure went unused as a result of conflicts in payment collection and concerns over mosquitos following a dengue outbreak.

Left: Basketball court and social enterprise center.

Right: Interior of shelter.

Bottom: Shelter with beneficiary adaptations.





The use of large windows, amakan, and other features improved the ventilation of shelter solutions implemented after Haiyan.





Repair & Retrofit	Transitional	Core/Progressive	Rental	Hosting	Resettlement
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## Case 19: Cantahay, Guiuan, Eastern Samar

### Overview

Situated inland within the Municipality of Guiuan, Cantahay's population of 1,118 is a sparsely populated community that relies on farming for its primary source of income. To address immediate and pressing shelter needs, organizational assistance focused on providing core shelters.

The shelters were designed to last an expected 10 years, easing transition to self-recovery and household driven initiatives. Shelters were constructed of amakan walling and coconut lumber, similar to other shelter designs seen across the response. The use of concrete footings, metal strapping, and a hipped roof design are features that contributed to safer structures. Latrines were not included initially, but later added during a second project phase.

### Material Procurement

Beneficiaries were asked to contribute the coconut lumber for their shelter in order to expedite the construction. The organization shouldered the costs associated with cutting the lumber. Within Cantahay this approach was found to be an effective strategy to make use of the large number of downed coconut trees on-site and reduced transportation costs. In



Map of project location

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105

Households



P56,000  
Materials

P14,000  
Labor



12

Months

other mountain communities where the organization was working, procurement through this method provided challenging in some cases because of few available coconut trees.

Aside from coconut lumber, roofing materials and steel reinforcement for the footings were procured either nationally or internationally. These materials were unavailable at the volumes required for the program, however attempts were made at local procurement prior to opting for import.

## Orientation and Training

Prior to the start of construction several orientation sessions were held for beneficiaries. These outlined the construction process and responsibilities and basic principles of safer building. A large of households reported not attending these sessions, partly due to the timing of meetings. Future programs should seek to select appropriate times and hold these orientations in clusters closer to households.

Given a severe construction labor shortage, the organization facilitated a 10-day training for individuals interested in construction employment. The organization provided a short lecture followed by on-site supervision for the remainder of the training period. The practical component was overseen by a more experienced carpenter who led a team of 4-5 individuals. This strategy was effective in attracting individuals to fill the labor gap; however, retention rates were low because of competing wages from other shelter organizations working in the area.



Strapping was one of several design features emphasized in training sessions.

Upon turnover, the organization provided a pictorial operations manual for maintenance and guidance on expansions. While these were well intended, few beneficiaries actually read the manuals and verbal instructions could have potentially better conveyed this information.

## Phased WASH

During ongoing construction, it was determined that there was also a significant

need for WASH assistance in the community. Following completion of shelters, a partner organization returned to provide latrines for those initial households who received assistance but lacked access to sanitation facilities. In most cases, even existing septic tanks and toilets were deemed inadequate (either full or partially functional) and replaced. Hygiene promotion sessions also accompanied the delivery of provided 'hard' infrastructure.

## Strengths

- ✓ Shelters were rapidly constructed, a result of a replicable design used across multiple communities.
- ✓ Shelters had large interior living space and were well ventilated.
- ✓ Procurement of coconut lumber by beneficiaries expedited construction and reduced transportation costs.

## Challenges and Lessons

- Two shelters collapsed during Typhoon Hagupit in 2014 due to inadequate lateral bracing.
- Skilled labor was difficult to acquire and turnover rates of carpenters were high, impacted by wage differences between shelter organizations in the region. This could have been addressed through improved coordination and standardized wage rates.



Shelter materials show signs of wear.



The background image shows a row of modern, single-story houses with reddish-brown roofs and walls. A dirt path leads from the foreground towards the houses. The sky is blue with scattered white clouds. In the foreground, there are some plants, including a banana plant, and a pile of sticks or debris on the dirt path.

# Themes in Shelter

## Learning from the Haiyan Experience

Urban Sheltering: Evidence from Rental Subsidies and Hosting Support

Assessing the Impact of Shelter Cluster Key Messages

Re-Envisioning Evacuation: Reducing Mortality Through Social Development and Community Sheltering

Lessons for Integrating WASH into Shelter Programs

Humanitarian Considerations for Long-Term Resettlement

Surviving Survival: The Limits of Bayanihan and Disaster Solidarity after Typhoon Haiyan in Tacloban City



## Urban Sheltering: Evidence from Rental Subsidies and Hosting Support

By Aaron Opdyke, Phoebe Tabo, and Amy Javernick-Will

Shelter is more than just four walls and a roof. Ask a family what a shelter provides and their first responses likely won't be protection from the elements. Instead, you will generally hear about its value in supporting their storefront and livelihood or its function as a social gathering place. While we typically think about shelter as a physical asset, to families, it's really an *economic* and *social* asset.

If we reframe what shelter means to families, we can start to better understand how to provide shelter assistance that can support those using it. Following a disaster, there is a range of options available to deliver shelter assistance. Core shelters, materials, and technical assistance are a few of the commonly used modalities. Two less frequently used options, rental subsidies and hosting support, are often overlooked and largely misunderstood.

Unlike other shelter approaches, rental subsidies and hosting support seek to use, and potentially upgrade, the existing housing stock of a community. These approaches have been used successfully to shelter refugees fleeing conflict as well as in select natural disasters, such as following the 2010 Haiti earthquake<sup>1</sup>.

The majority of renters returned to 'no-dwell' zones, such as this one, before rental contracts expired because of lacking access to their livelihoods and social ties.

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<sup>1</sup> Setchell, C. (2012). "Hosting support: an overlooked Humanitarian shelter solution." *Monthly Developments*, 30 (12), 17–18.

Despite growing best practices on managing hosting support<sup>1</sup> and rental subsidies<sup>2</sup>, there is little documentation of what becomes of beneficiaries of rental subsidies and hosting support. Do these families transition to more permanent shelter or do they return to vulnerable locations and poor living conditions? Further, what factors impact the success of these modalities?

## **The Philippine Context and Haiyan**

Despite past evaluations that noted the missed opportunity for more rental and hosting support in Haiti<sup>3</sup>, rental subsidies and hosting support represented only a small part of shelter assistance following the response to Typhoon Haiyan in the Philippines in 2013. While the Shelter Cluster tracked temporary shelters, repairs and retrofits, core shelters, and permanent shelters after Haiyan, neither rental subsidies nor hosting support were included in organizational reporting – a byproduct of their limited presence.

In the aftermath of Haiyan, 7% of households across affected regions were hosting families<sup>4</sup>. In Eastern Samar, where the typhoon first made landfall, 30% of households were being hosted (without support). Further, hosting rates were two times higher in urban areas than in rural areas. So was this another missed opportunity?

We looked at two communities where rental subsidies and hosting assistance were provided by two different organizations to investigate the impact of these modalities. Both communities lived in dense urban areas in Tacloban City. Rental subsidies constituted 13% and 18% of total shelter assistance in the communities, respectively, and hosting constituted 11% and 9% of total shelter assistance, respectively. Following the third anniversary of the typhoon, we conducted interviews with beneficiaries of both types of assistance, as well as organization staff, to gain insights into how the shelter assistance had helped or hindered recovery.

## **Lessons from the Field**

While the two communities studied were different – one was located in a government designated ‘no-dwell’ zone and the other was not – there

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<sup>1</sup> Vitale, A., and D’Urzo. (2012). [Assisting Host Families and Communities after Crisis and Natural Disaster: A Step-by-Step Guide](#). International Federation of Red Cross and Red Crescent Societies.

<sup>2</sup> Créac’h, Y.-K. (2014). “[Evaluating Cash-for-Rent Subsidies](#).” Shelter Projects 2013-2014, J. Fowler and J. Kennedy, eds., 101–102.

<sup>3</sup> Grünewald, F., and Binder, A. (2010). [Inter-Agency Real-Time Evaluation in Haiti: 3 Months After the Earthquake](#). Urgence Réhabilitation Développement and Global Public Policy Institute.

<sup>4</sup> REACH. (2014). [Shelter and WASH Response Monitoring Typhoon Haiyan, Philippines, 2013 Final Report](#). Philippines Shelter Cluster and WASH Cluster.

were common themes that emerged in contract flexibility, occupancy, and location.

### **Contract Flexibility**

The length of rental and hosting assistance had a significant impact on the continued sheltering of families in safe homes. One program required 2-year fixed contracts, the other provided assistance on a monthly basis, typically for 6 to 12 months. The majority of beneficiaries receiving 2-year fixed contracts had abandoned the units before the end of the first year.

As recovery progressed, families needed greater flexibility in their shelter – this was particularly important given the large percent of families being relocated within Tacloban City. Households frequently expressed that 6 to 12 month contracts, for both rental and hosting support, were more effective in meeting their needs.

### **Occupancy and Family Ties**

Continued occupancy was also affected by whether the property owner was a family member. All of the beneficiaries living in family owned units were still living in the supported shelter at 3 years. This support commonly laid the foundation to evolve into permanent housing arrangements.

In contrast to hosting, rental subsidies were typically issued to those with land tenure conflicts, with the most complex of these being the designated ‘no-dwell’ coastal zones. Those receiving rental assistance weren’t required to rent from family and often were forced into properties outside of their original community. Significantly lower rates of continued occupancy were observed for these households.

### **Localized Economies and Social Networks**

The vast majority of renters and hosted families that returned to unsafe shelter were driven by an inability to assimilate into new economic markets and social networks, even when the location was a few neighborhoods away. In many cases, households forfeited an entire year of pre-paid, safe shelter to return for economic opportunities.

Despite some shortcomings, both modalities were largely successful at achieving safe, *short-term* sheltering in a complex, urban context. A strength of both rental subsidies and hosting support was the ability of households to leverage organization assistance. In the case of rental subsidies, families were commonly able to negotiate rental rates down by 25-50%, a product of supporting shelter within familiar markets and social ties. The excess rental savings were put toward livelihood opportunities, educational and medical expenses, and household items.



**Rental units, such as the one shown above, were commonly used for households in the ‘no-dwell’ zone because of land tenure conflicts.**

## Recommendations for Practice

While urban centers, such as Tacloban City, were the media focus of the Haiyan response, 80% of households within 50km of the storm path were in rural areas<sup>1</sup>. The faster recovery speeds observed in rural regions were poorly aligned with rental subsidies and hosting support, explaining the absence of these modalities. Despite the suitability of these approaches in urban contexts, few organizations sought to support these shelter activities.

Shelter support often ignored the role of former sharing agreements and the rental market. Household savings of 25-50% on rental subsidy and hosting cash-transfer programs demonstrate remarkable success of these approaches. Further, these modalities have provided greater mobility for households that face uncertain resettlement by government programs.

Our findings point to two recommendations for organizations seeking to use rental subsidies or hosting: (1) create flexible, 6-12 month contracts that can be renegotiated and (2) leverage family ties whenever possible in selecting units. Organization staff reflected that month-to-month contracts would be ideal, but require significant staffing resources that may not always be available. It is also important to recognize the hyper-localized nature of economic and social ties when selecting rental subsidies or hosting support as shelter modalities. Used effectively, rental units and hosting provide safe shelter for short periods and can provide valuable upgrades to local housing stock.

*Note: This section was originally featured in a blog article on the Overseas Development Institute Humanitarian Practice Network on January 17, 2017. The original article can be found on the [HPN blog](#).*

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<sup>1</sup> REACH. (2014). [Shelter and WASH Response Monitoring Typhoon Haiyan, Philippines, 2013 Final Report](#). Philippines Shelter Cluster and WASH Cluster.





Trusses and roofing take shape during shelter construction, applying key messages emphasized by shelter partners

## Assessing the Impact of Shelter Cluster Key Messages

By Aaron Opdyke and Amy Javernick-Will

In the *Recovery Shelter Guidelines*<sup>1</sup>, the Shelter Cluster summarized the goal of shelter assistance programs as follows:

The aim of shelter assistance programs is to ensure that families have adequate appropriate and safe shelter supporting them to transition along the pathway to permanent durable housing, prioritizing the needs of the most vulnerable, ensuring participation, freedom of choice, and access to basic services to ensure a life of dignity. (p. 1)

A key parameter of shelter assistance was the ability to provide safe solutions that incorporated the widely distributed ‘8 key messages’<sup>2</sup>. Through the platform of the Shelter Cluster, technical guidance was narrowed down to the following 8 themes in the *Recovery Shelter Guidelines*:

1. **Foundation:** Hold the building up, down, and from toppling over, resistant against pests and rot.
2. **Tie-down:** From the bottom up: ensuring continuous tie-down though all elements of the construction from the earth to the top of the building.
3. **Bracing:** In both directions in each plane of the building, from strong point to strong point, designed to act in both tension and compression.

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<sup>1</sup> Humanitarian Shelter Working Group. (2014). “[Recovery Shelter Guidelines](#).” Global Shelter Cluster.

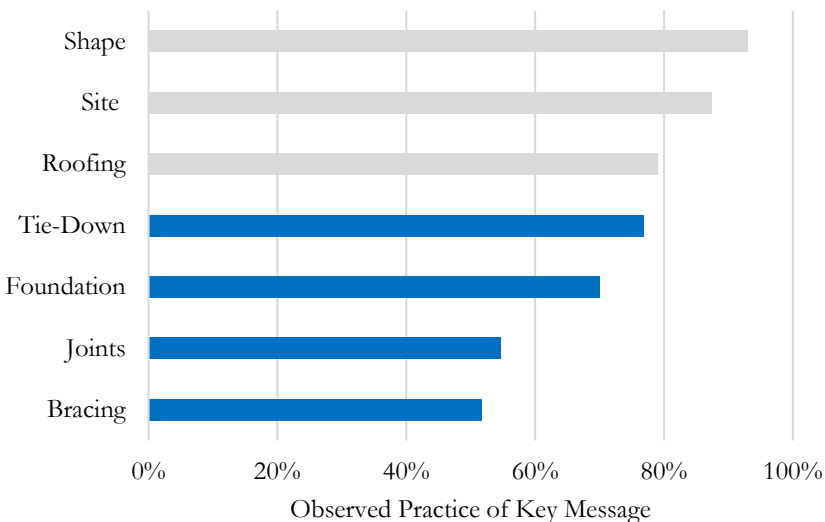
<sup>2</sup> See [8 Build Back Better Key Message](#) posters

4. **Strong joints:** Resist being pulled apart or crushed under tension or compression
5. **Roofing:** Wind resistant shape, of adequate strength and fastenings.
6. **Site:** Built in a location or manner that is site specific for the risks.
7. **Shape:** Simple strong geometrical shapes will better resist earthquakes and typhoons.
8. **Preparedness:** Communities and families are prepared for future hazards.

These messages aren't new to humanitarian shelter, but they represent one of the first clear and compressive sets of shelter standards and technical guidance. So the question arises, were these messages actually followed and used by implementing partners?

Using the cases included in this book, we conducted a field assessment from January to March 2015 to investigate which messages were implemented. Our assessment was based on field observations and interviews with 167 NGO staff, beneficiaries, and government officials.

Using components outlined in the 8 key messages, we rated the level of adhering to standards, aggregating any sub-messages (e.g. truss bracing, roof bracing, silt bracing, wall bracing, and brace angle). We excluded the last message, preparedness, as evidence was found for all programs. Below is a summary of messages that were found to be most prevalent in shelter across the studied programs.



New foundations and post straps were several improvements laid out in the Shelter Cluster '8 key messages.'

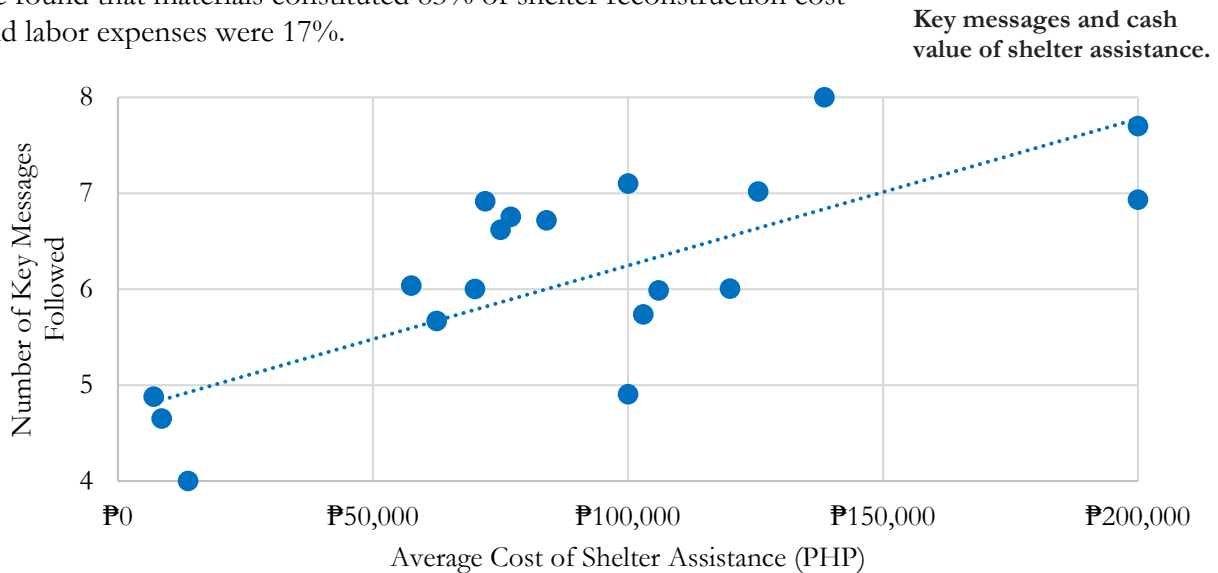
Evidence of improved shelter construction ranked by key message themes.

Shape, site, and roofing recommendations were largely followed by beneficiaries and organizations. These building principles were widely understood before Haiyan and were easy to leverage in build back better messaging.

The use of improved tie-downs was limited by the absence of pre-cut metal strapping from construction suppliers. The cost of straps was also prohibitive for many programs. It was found that post straps alone would have increased the average core house<sup>1</sup> cost by 5%. Similarly, concrete foundations were a significant cost for some homeowners; however, a significant number of homeowners were able to reuse pre-existing concrete footings.

Improved joints were limited, primarily due to not wanting to extend joints for architectural reasons, and lack of angled nailing. The least observed message but arguably the most important, was bracing. In 45% of programs, bracing was found to be absent from walls. Truss bracing, in contrast, was present in 85% of programs. Our assessment aligns with a final assessment conducted by the Shelter Cluster in 2014 which found that bracing was almost twice as likely to be seen between roof trusses compared to bracing in walls<sup>2</sup>.

In addition to comparing the documented rates of each theme, our evaluation also looked at the average cost of shelter packages provided in order to map cost vs. benefit. The average number of key messages followed within each studied shelter program are plotted against the average cash value of materials and labor assistance below. On average, we found that materials constituted 83% of shelter reconstruction cost and labor expenses were 17%.



From the plot, a clear relationship emerges between the number of key messages followed and value of shelter support provided. The programs at the bottom left were commonly repair and retrofit or temporary shelter assistance. Programs at the top right were permanent shelter.

<sup>1</sup> Core houses aim to provide households with the core of their future house: one safe room, or the frame of a permanent house with a safe room to inhabit.

<sup>2</sup> Shelter Cluster. (2014). [Final Analysis of Shelter Recovery](#).

Programs in the middle were a mix of core shelters, hosting support, rental subsidies, and temporary shelter assistance.

A notable takeaway from our comparison is that while cost certainly is a driver of the ability to improve safer building, it alone cannot explain adoption of better building practices, as evidenced by programs in the center of our plot. Further, this assumes that all of the key messages are equally important. Given that some messages, such as wall bracing, have more of an impact on the structural strength of a shelter, future guidelines should consider placing emphasis on building components that can maximize strength.

*For further reading on key message assessment please see the following reports and articles:*

Shelter Cluster. (2016). [Typhoon Haiyan \(Yolanda\) Shelter Response Outcome Assessment.](#)

Opdyke, A., Javernick-Will, A., Koschmann, M., and Moench, H. (2016). [“Characterizing Post-Disaster Shelter Design and Material Selections: Lessons from Typhoon Yolanda in the Philippines.”](#) Construction Research Congress, 1475–1485.



## Re-Envisioning Evacuation: Reducing Mortality Through Social Development and Community Sheltering

By **Aaron Opdyke** and **Amy Javernick-Will**

As Typhoon Hagupit (locally known as Ruby) approached the central Philippines in December 2014, over half a million people were evacuated. Still recovering from Typhoon Haiyan a year earlier, the country prepared for the worst. Despite the unprecedented number of evacuations, thousands of households chose not to flee and 18 people were killed during the typhoon, a number that could have been far higher had Hagupit maintained its intensity on landfall.

In surveys conducted with 336 homeowners across the affected provinces of Cebu, Leyte, and Eastern Samar following Hagupit, several lessons emerged that provide new insights for future disaster risk reduction strategies.

First, both formal and informal early warnings worked. 86% of households were warned of Hagupit's arrival by a neighbor, 82% by a community official, 76% by radio, and 70% by television. Fewer than 1% of households were not made aware of the approaching typhoon through one of these four methods.

Despite 99% of households being aware of Hagupit, 30% didn't evacuate and another 12% of households left at least one person behind. It's troubling that 65% of those that didn't evacuate, or left at least one person behind, did not have confidence that their home would survive the storm.

The newly constructed housing units above were used as a local evacuation center for residents following Typhoons Jangmi and Hagupit in 2014 and 2015, respectively, yet were not included in formal evacuation plans.

So, why were evacuations sparse? Overcrowded evacuation centers and long distances to evacuation sites were the most common answers, but another interesting answer emerged – lack of trust in their neighbors. Fear of looting was the primary reason for all households who left someone behind.

For those households that did evacuate, the scene was not one of systematic organization, but rather organic response. 39% of households evacuated to a private home other than their own (86% of these within their community). Another 36% fled to a school, 8% to a church, 3% to a commercial building, 3% to a community building, and 11% to other locations.

Schools, churches, and community buildings are all accounted for in pre-event evacuation plans. Houses, however, are often left out of disaster risk reduction plans. Despite the importance and widespread use of safe houses as evacuation sites, organizations and governments have largely ignored their role in providing shelter during evacuations.

As we formulate strategies to reduce mortality from disasters, it is critical that we take into account two lessons. First, we need to remember the social constraints of providing safety in the face of disasters. In the developing world, neighbors and community leadership are still the primary source of information for early warnings. Social connections, or the lack thereof, play a significant role in household decisions to seek safety. Technology should complement, not substitute, social development programs which have the potential to build trust in communities and thus indirectly influence movement to safety in times of crisis.

Secondly, there is a dire need to diversify risk reduction thinking to include alternative locations that provide safety. In many cases, existing infrastructure may already be in place to secure safety, yet we continue to exclude these sites, particularly selective housing, in the formal evacuation planning process. It is imperative that we plan for, and support, existing community sheltering approaches as a means to reduce disaster mortality.

*Note: This section was originally featured in a blog article for UNISDR's 2016 International Day for Disaster Reeducation on September 23, 2016. The original article can be found on [PreventionWeb](#).*



## Insights for Integrating WASH into Shelter Programs

By **Phoebe Tabo** and **Shaye Palagi**

Water, sanitation, and hygiene (WASH) assistance poured into affected communities after Typhoon Haiyan. A year after the storm, 2,007,873 people, 134% of the WASH Cluster target, had access to safe water. Sanitation was less successful, only meeting 56% of the WASH Cluster target, reaching 360,932 people<sup>1</sup>

Many shelter programs constructed sanitation facilities as part of housing but sanitation alone is not an integrated WASH program. Other WASH focus areas were ignored, such as access to reliable water sources and hygiene education. Some transitional houses had no access to safe drinking water which, when coupled with inadequate hygiene, contributed to diarrhea outbreaks. Often there was not even a nearby domestic water source for toilet maintenance. Perhaps most concerning is the continued practice of open defecation. Without the careful combination of water, sanitation, and hygiene interventions, sanitation facilities in numerous shelter programs have been abandoned or are not being used and maintained appropriately. For instance, in Leyte we witnessed some families sell the materials provided for sanitation facilities. In other households, toilets were converted to chicken coops. In post-Haiyan reconstructed and relocated homes, numerous households with toilets don't use them.

Despite extensive shelter and WASH construction efforts, integrated solutions were scarce.

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<sup>1</sup> UNICEF (2014). [One Year After: Typhoon Haiyan, Philippines](#).

There is a need to harmonize WASH and shelter programs so they collectively support holistic recovery. Integrating WASH with shelter programs can ensure families receive adequate WASH systems and are educated to use and maintain them properly.

One option is a community-driven approach to WASH. In the global WASH sector, bottom-up sanitation approaches are known as Community-Led Total Sanitation (CLTS). Developed in the early 2000's in Bangladesh, CLTS relies on behavior change communication and participatory rural appraisal methods to engage community members in assessing their local sanitation habits. To induce awareness, CLTS facilitators ask community members to give them a tour of the community. When the tour procession stumbles along feces a facilitator pauses in brief soliloquy. As she talks on, the proximity of a guest so close to waste agitates a growing discomfort among community members. She may collect a sample of the discovered feces and set it near a plate of food. While she leads additional activities, flies casually travel to and fro the food and feces. Later, the facilitator may ask everyone to contribute to a large map laid out on the ground. Once everyone's determined the placement of the school, church, and households, she asks them to mark where they go to the bathroom. With each passing activity, collective shame and disgust build until participants are *triggered* to self-initiate sanitation solutions in their community.

Over two decades of CLTS practice, numerous variations and critiques have emerged. While we recognize the rich deliberation around CLTS in general, we note that the Philippine government has officially adopted a variant of CLTS to eradicate open defecation throughout the country – specifically the Philippine (or Phased) Approach to Total Sanitation (PhATS). With CLTS-inspired methods, PhATS galvanizes the community to participate in the design and construction of water and sanitation facilities (sinks, pipes for the water, water sources, septic tanks, water waste management) and also provides technical guidance and trainings on promoting good WASH practices. Through a community-driven approach, PhATS encourages continuity of improved practices and maintenance of constructed facilities. The program focuses on creating demand for improved water and sanitation and instilling a sense of ownership and responsibility, even before construction of facilities. After Typhoon Haiyan, the first author facilitated numerous PhATS interventions and witnessed transformation in community WASH practices.

Given the government endorsement of PhATS – and the gnawing fact that many households provided with toilets through reconstruction aid continue to practice open defecation – it is valuable to explore opportunities to integrate PhATS into shelter programs. Future shelter

**The Philippine Approach to Total Sanitation (PhATS) adapted the globally recognized Community Led Total Sanitation (CLTS) approach to trigger behavior change.**





programs should mindfully blend community-driven approaches – the PhATS method – into post-disaster shelter and WASH facility construction because community involvement ensures beneficiaries intrinsically value the infrastructure, increasing the likelihood of its proper use and maintenance of facilities into the future. In our experience, organizations that implemented non-PhATS approaches suffered from a lack of facility maintenance – rotting materials, unused toilets, and broken faucets – or WASH related diseases despite available sanitation facilities.

To realize sanitation benefits, we see opportunities for shelter practitioners to integrate PhATS philosophy by involving community members in decision making, hard and soft (technical construction and hygiene) capacity building, and implementation.

However, we acknowledge that while shelter programs could benefit from a PhATS approach, CLTS and traditional shelter programs are very different: CLTS is about social mobilization and most shelter programs traditionally focus on simply building infrastructure. In a standard CLTS approach, techniques such as community mapping highlight shameful practices around sanitation and motivate people to build their own latrines in addition to holistic changes to their WASH habits. Obviously, conceding toilet construction to households would not work in all reconstruction scenarios and would have to be tailored. For one, shelter programs that traditionally build in-home latrines (like the permanent relocation homes) are not going to stop investing resources into toilets and we are not advocating they should.

Regardless, there are opportunities to adapt. For instance, PhATS would work particularly well with self-recovery focused shelter programs. Because self-recovery households are not relocating, location-based triggering activities – the tour, community mapping – are still viable. Furthermore, families could benefit from technical guidance on the proper design, construction, and maintenance of latrines.

Another option, particularly for permanent relocation, may be to blend PhATS exercises into the pre-move beneficiary training. Most all post-Haiyan relocations featured a version of beneficiary education intended to illuminate and adjust old habits that may not be appropriate for new relocation sites. Often trainings focus on skills such as saving to pay for electricity, but old sanitation habits – many families have never had access to a latrine before or lack awareness about the harm of open defecation—may also need to be addressed. In addition to triggering activities, families could benefit from an orientation to proper latrine maintenance. Constructing organizations can display a septic tank above ground, describe how to keep it functioning, and – in a PhATS like manner – *trigger* appropriate maintenance.

PhATS techniques could work in a wide range of shelter options. Triggering tools targeted at exposing the financial burden of WASH-related illnesses, such as household income versus expenses while sick with diarrhea, could be integrated into increasingly common financial planning advocacy of shelter organizations. Alternatively, children could be asked to envision their dreams of life in their new or reconstructed home and guided towards responses inclusive of WASH and shelter aspirations. Reconstruction projects could be dotted with drawings of shelter+WASH and electrified with children's songs about strong, safe, and healthy homes. Inspired children are often the most powerful advocates of change.

When shelter and WASH programs are disaggregated, recovery potential is stifled. We see opportunities for the Philippine government-endorsed community-driven WASH philosophy, PhATS, to link with shelter programs. From donor-driven construction of full households to self-recovery interventions, triggering techniques could be implemented to encourage long-term improved practices and care for WASH facilities. In particular, location-based community tours and mapping are promising for in-situ recovery and pre-move trainings provide windows to discuss sanitation for relocated households. In all shelter programs, conversations about finances and children's' futures can use PhATS trigger techniques to inspire better shelter *and* WASH outcomes.

*For further reading on PhATS please see the following report and website:*

UNICEF (2015). [PhATS Demand Creation in Communities](#).

[Philippines WASH Resources Website](#)



## Humanitarian Considerations for Long-Term Resettlement

By **Shaye Palagi, Roos Groen, and Amy Javernick-Will**

Addressing thousands of Taclobanons three years after Typhoon Haiyan razed the city, President Rodrigo Duterte rebuked the pace of relocation and set in motion a plan to move 8,000 families before Christmas. Even with the President’s blessing, including concomitant resources and smoothed bureaucracy, the mass transfer was a bold plan. In comparison, only ~2,000 families had been transferred within Tacloban in the three years following the storm. With too few nearby schools, a severe lack of water infrastructure, and an abundance of construction defects in relocation houses, the transfer stalled at just over 10%.

Relocation of thousands of families requires establishing a new town: mindful urban planning, support infrastructure, and the cultivation of local industry. Led by the government, it’s an extraordinarily complex task. Unsurprisingly, creating a new town takes time and, in the interim, families endure uncertainty. One survivor, still living in transitional housing as of late 2016, voiced: “[recently transferred households] have new hope, we have no hope, our only hope is Duterte”. Humanitarian actors often feel equally restrained by uncertainty, with little agency over long-term development or little duty to plan a new city. However, emergency and temporary actions have long-term impacts and opportunities exist for humanitarian agencies to not only provide

Ongoing resettlement construction in Northern Tacloban.

Photo by Shaye Palagi

transitional housing but also facilitate the transition to permanent homes.

### **Standardize and Share MOAs**

First, memorandums of agreement (MOAs), when wielded properly, can become tools for community members to pressure formal government structures, which could both facilitate the transition process and improve the basic public and social services in transitional relocation sites. In one permanent relocation community, the community-elected leader keeps a copy of the agreement between the NGO, contractors, and government on her desk. She's highlighted deficiencies that were legally agreed upon, like access to water, and uses the document when she strikes out to advocate needs in various government agencies.

Humanitarian organizations can increase the agency of community members and strengthen accountability by improving MOAs.

Humanitarian agencies should implement standardized MOAs for their transitional sites in close coordination with the local government. To increase the agency of soon-to-be relocated communities, MOAs need to be made publically available and easily accessible: we suggest families receive a copy (in their local dialect) when they move into the shelter.

### **Maintain Communication Ties**

Next, humanitarian agencies play a critical facilitation role in communication between the local government and communities affected by relocation. In most Tacloban transitional sites, no humanitarian agency has maintained a long-term and embedded support role. In contrast, in one transitional site with a partnering agency, the community disclosed their concerns and in-turn the agency pressured the relevant government actor. The community felt the organization was more accessible than the government. However, the organization was not always transparent about the outcome of local government decisions, which led to stress among community members. Especially in the first two years of recovery, humanitarian agencies can facilitate communication between the local government and communities, which can empower community members to advocate for their interests and concerns.

### **Plan Medium (Not Short) Term Infrastructure**

Finally, most of the transitional sites were designed for a brief 1-2 years of livability, reflecting faith in the pace of permanent relocation. Instead of the old adage 'trust but verify,' transitional housing in Tacloban City could have benefited from a 'trust but fortify' strategy; trusting the government to hit permanent housing targets on time, but fortifying transitional site drainage, structural integrity, and water and sanitation infrastructure for medium-term use. In private conversations and public forums about relocation, Tacloban City leaders are championing the

medium-term message and advocating extending the transitional timeframe to 3-5 years to provide time for thoughtful planning. In addition to increasing site durability, a longer timeframe must be matched with extensive and open communication.



**A transitional relocation site floods after heavy rains.**

Photo by Roos Groen

## **Conclusions**

In Tacloban City, the impact of humanitarian agencies has and will continue to linger throughout long-term relocation and recovery. The city's experience highlights opportunities for agencies to improve the transition into permanent homes. First, publically-shared transitional site MOAs would support displaced communities' ability to pressure governments. In addition, agencies should continue to facilitate communication between communities and governments for 2-3 years after disasters. Lastly, designing transitional sites with medium-term services and infrastructure builds in buffer time for competent long-term planning. Ultimately, these recommendations could reduce the vulnerabilities and uncertainties displaced communities face in transitional relocation sites.

Transitional housing site  
in Tacloban.

Photo by Shaye Palagi





## Surviving Survival: The Limits of Bayanihan and Disaster Solidarity after Typhoon Haiyan in Tacloban City

By Yvonne Su and Ladylyn Mangada

“They climbed the broken wall [of the warehouse]... and jumped down to fight it out with a hundred other thieves. Sardines, water, whatever they could carry. It was not the stealing that was dangerous. It was protecting what they had stolen.” – Patricia Evangelista<sup>1</sup>

Reporter Patricia Evangelista describes the dangerous conditions immediately after Typhoon Haiyan struck Tacloban City. Similar hostile conditions were observed at evacuation sites but such crude accounts of human nature are rarely highlighted. Instead, the focus is on resilience and *bayanihan*, known as “the ancient Filipino custom of group work”<sup>2</sup> and “toiling on another’s behalf and assuming another’s burden”<sup>3</sup>. *Bayanihan* was credited as a source of resilience for Filipinos after Haiyan. When Typhoon Haiyan struck, President Obama affirmed, “I am confident the spirit of *bayanihan* will see you through this calamity”.

On the surface, for the population that “goes the extra smile,”<sup>4</sup> the idea of survivors working collectively fits the narrative. But our research on

Without their belongings washed out by the storm surge, Typhoon Haiyan survivors loot for food in local grocery stores and supermarkets in Tacloban City.

Photo by Janry Inot

<sup>1</sup> Evangelista, P. (2013). The Land of the Mourning. *Esquire Magazine Philippines*.

<sup>2</sup> Ang, G.R. (1979). The Bayanihan Spirit: Dead or Alive? *Philippine Quarterly of Culture and Society*, 7(1/2).

<sup>3</sup> Bankoff (2007) Living with Risk; Coping with Disasters. Hazard as a Frequent Life Experience in the Philippines. *Education About Asia*, 12(2): 26-30.

<sup>4</sup> “We go the extra smile” is the tagline of the Ninoy Aquino International Airport, so foreigners and nationals alike are greeting with this branding as they arrive in Manila.

post-Haiyan recovery in Tacloban found that, while *bayanihan* existed, disaster solidarity and *bayanihan* are short-lived experiences in the urban context. The study conducted 466 surveys across three heavily affected barangays (community) and found that only 73% of respondents said they witnessed *bayanihan*.

The clearest forms of *bayanihan* were witnessed immediately after Haiyan, when men in some communities formed security teams and small groups located food together. However, these types of activities raise the question: is this *bayanihan* or simply surviving survival?

This skepticism is underscored by how brief *bayanihan* was observed: 46% of respondents noted *bayanihan* camaraderie lasted one week to one month and 13% said less than one week. Previous research demonstrates that while disasters can present unique opportunities for change that encourages transformations in the social fabric of society, the change is often temporary and social divisions within the community return after the immediate danger passes<sup>1</sup>.

This is consistent with our findings as respondents often offered more examples of problems with their neighbors during the response and relief distribution period than stories of *bayanihan*. Immediately after Haiyan, looting, stealing from neighbors and hoarding relief were common survival tactics. Without a schedule for relief distribution, survivors were incentivized to cope with the instability through maximizing their family's portion of relief by withholding information on relief distribution from their neighbors and reporting middle class households to NGOs to exclude them from aid. Some of these same middle class households were the ones that opened their concrete homes for evacuation after Haiyan, but once relief came, they said their neighbors turned on them to deny them of relief. These middle class respondents felt such behavior, and the unequal distribution of relief by NGOs, acted to harm neighborhood relations<sup>2</sup>.

Most respondents complained that the selection of beneficiaries for shelter assistance from NGOs as well as Emergency Shelter Assistance (ESA) from the government were unfair. Some respondents felt NGOs wrongly categorized their homes as partially damaged when their homes were actually totally damaged. Others complained that while their neighbors received numerous programs of assistance ranging from core

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<sup>1</sup> Oliver-Smith, A. (1999). The Brotherhood of Pain: Theoretical and Applied Perspectives on Post-disaster Solidarity In Anthony Oliver-Smith and Susannah Hoffma (Ed.) *The Angry Earth: Disasters in Anthropological Perspective*. New York, NY: Routledge; Turner, R.H. (1967). "Types of Solidarity in the Reconstituting of Groups." *Pacific Sociological Review* 10: 60-68; De Alessi, L. (1975). "Toward an Analysis of Postdisaster Cooperation." *The American Economic Review*: 127-138.

<sup>2</sup> For more examples of the negative impacts of unequal distribution of aid following Haiyan see, [Does humanitarian aid mend communities or break them?](#)



homes, financial assistance and relocation, they were left off of the beneficiary list and unable to avail of any assistance despite their own experience of Haiyan. We observed that for some households it is ‘build back bitter’ not ‘build back better’<sup>1</sup>.

What do these observations mean for future humanitarian work?

The first lesson is more proactive communication with affected communities and not just beneficiaries. While the beneficiaries are the target of NGOs and aid, they cannot be treated in isolation from their communities. It is well known that in the Philippines, you cannot keep secrets from your neighbors because everyone lives in such close quarters. As a result, to reduce the number of complaints and manage expectations, NGOs should not overlook the significance of clearly articulating their criteria for selecting beneficiaries and the timeline of their projects.

The second lesson is to remind humanitarian organizations to avoid the temptation of romanticizing indigenous or local principles such as *bayanihan* as success stories. These stories contribute to the Filipino brand of resilience, which act to silence criticism of inadequate risk reduction and preparedness by government as well as slow response and recovery.<sup>2</sup> This was reflected in President Aquino’s request that the Association of Philippine Broadcasters feature stories that “move(d) others to action” and “uplift(ed) spirits of the Filipino people” six days after Haiyan. The president wanted stories of “resilience, hope, and faith” to show how strong Filipinos were during Haiyan.<sup>3</sup> The broadcasters’ complied uplifting stories of coping, relief, and returning to normalcy were on radios, TV and print media.

A similar trend can be observed with the new Duterte administration’s positive portrayal of the resettlement of displaced households to permanent shelters in Tacloban North. Despite the many social media posts and articles congratulating the president on his ability to resettle families three years after Haiyan via the hashtag #Dutertespeed, households in the north continue to lack water connections and livelihood options. Removed from their previous communities and networks of support, the prospects of *bayanihan* are even lower here and opportunities for community organizing to make demands to improve their situation are limited.

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<sup>1</sup> See Parreno, E.G. (2015). “[Yolanda: The disaster that lingers still](#),”

<sup>2</sup> See IBON Foundation, ‘Disaster Upon Disaster: Lessons Beyond Yolanda’, page 55 and Chaya Ocampo Go’s thesis “Kababayan-an Han Karak-an (Women of Storm Surges): A Feminist Ethnographic Research on Women Survivors of Super Typhoon Yolanda”

<sup>3</sup> See Seares, Pachico A, “[Where media shone, dimmed in coverage of Yolanda](#),” Sunstar Cebu, November 23, 2013.

Humanitarians can see from their everyday work that underneath the smiles, beneficiaries continue to suffer gravely from the effects of Haiyan. We must resist perpetuating myths of collective recovery in urban areas where such actions did not take hold. Sometimes surviving is just surviving.

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