



**Philippines Shelter Cluster**  
ShelterCluster.org  
Coordinating Humanitarian Shelter

# SHELTER SECTOR RAPID ASSESSMENT

## EARTHQUAKE OCTOBER 2013

### IN BOHOL, PHILIPPINES

FINAL REPORT

23 NOVEMBER 2013



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## EXECUTIVE SUMMARY

### CONTEXT

At 08:12 on 15th October 2013 an earthquake with a magnitude of 7.2 occurred in Region VII of the Philippines, the epicentre of which was located in the eastern part of Bohol Province. According to governmental data a total of 3,158,009 individuals have been affected by the earthquake. The Department for Social Welfare and Development (DSWD) and the National Disaster Risk Reduction Management Council (NDRRMC) recorded a total of 54,646 houses having sustained damage as a result of the earthquake and aftershocks.

Through a stand-by partnership with the Global Shelter Cluster, REACH deployed a team to the Philippines on 23<sup>rd</sup> October in order to facilitate a rapid shelter assessment in Bohol, the province most affected by the earthquake according to government data. The assessment aims to contribute to an adequate and timely shelter response for populations affected by the impact of the earthquake in Bohol province. To achieve this objective, the assessment team was tasked with the collection, analysis and dissemination of data on key indicators for the shelter as well as other sectors of humanitarian assistance over a geographic area of twelve municipalities.

An interim assessment report was released on 11<sup>th</sup> November presenting initial findings for three out of the twelve targeted municipalities. This final report presents in more details the methodology as well as the findings for the overall assessment, which was funded through a global grant from the European Community Humanitarian Office.

### KEY FINDINGS

- The level of total and major damage is significantly less than initial estimates. Only a small proportion of shelters were identified by enumerators as being totally destroyed. Partially damaged shelters account for half of the overall shelter damage resulting from the earthquake across all municipalities, with the highest proportion of partially damaged shelters reported in municipalities which are not currently considered as high priority in the response. As a result, there is a need for broader based support rather than targeting shelter assistance based on the highest level of shelter damage.
- Masonry and mixed timber-masonry type of housing sustained more major and partial damage than timber-based houses and huts. Shelter actors should promote a 'build back better' approach with households who decide to build a different type of shelter or to repair masonry and timber-masonry mix houses to make them more resilient. More generally, the shelter response should aim to help affected households to reduce the risk and mitigate the impact of future disasters through the provision of technical support and capacity building on Disaster Risk Reduction (DRR) applied in shelter design and construction.
- While half of the assessed households reported sleeping inside their house at the time of the assessment, a quarter was sleeping outside with the majority located in the municipalities where the highest level of shelter destruction and damage were reported. Households sleeping outside their houses are predominantly resorting to makeshift shelter and a third are sleeping under tents. In order to meet emergency shelter needs, a transitional shelter programming should be implemented and this is further confirmed by findings on the type of assistance identified by households for shelter recovery.
- The main reasons cited by households reporting sleeping outside is the fear of aftershock, even in municipalities where the lowest level of shelter damage were reported. The psycho-social impact of the earthquake on the population cannot be understated as this was the strongest earthquake to hit Bohol in nearly 25 years. There is a need to investigate further in order to identify and ensure psycho-social assistance is available for households who may require this type support.

- The vast majority of households had not begun the process of repairing or rebuilding or relocating at the time of assessment. This lag in the process, along with the lack of households able to recover with their own resources, suggests a low capacity for self-recovery. Households identified designs, materials, and labour as primary needs in terms of shelter assistance. Particular attention should be given to the specific needs of vulnerable households, including female-headed households, in terms of shelter assistance.
- The three main coping strategies of affected populations are first to engage in alternative livelihoods, second to sale household assets and third to borrow from family and/or friends. While alternative livelihoods and support from relatives and social networks are common coping strategies for households in disaster settings, the sale of assets to address immediate emergency needs will undermine the longer term capacity of households to recover fully from the impact of the earthquake. Coping strategies of affected populations should be further explored in order to inform the shelter response, notably to address households' most urgent needs and to mitigate the risk of shelter assistance being diverted from its intended purpose.
- Food, financial support and access to water were reported as the top three priority needs by affected households. Combined with findings indicating a low need for emergency shelter support and a high need for permanent housing, the prioritisation of financial support by affected households underlines the importance of integrating a strong focus on early and longer-term recovery in the ongoing response across all municipalities. This approach should build upon pre-earthquake development programming.

#### GEOGRAPHIC CLASSIFICATIONS

- Province:** Primary political and administrative division subdivided into component cities and municipalities
- Region:** Administrative organisation of provinces; 17 regions in total
- City:** Independent Component City (independent of the province, population over 150 000) and Component City (part of the province); both composed of barangays.
- Municipality:** A collection of barangays govern by a Mayor, that can become a city under specific requirements of population and minimal annual revenue.
- Barangay:** An area formed of 10,000 voters; the lowest administrative boundary
- Sitio / Purok:** Neighbourhood or area that is informal and not classified for administrative purposes

#### SHELTER DAMAGE CATEGORIES

This assessment uses the Shelter Cluster's definition and categorization of shelter damage, which are compatible with and can be compared to the categories used by government agencies in the Philippines.

Damage category (Shelter Cluster)	Damage category (Government)
1 = No damage	Not damaged
2 = Minor damage	Partially Damaged
3 = Moderate damage	
4 = Significant damage	
5 = Completely collapsed <u>roof</u> Collapsed or twisted <u>frame</u> Missing or collapsed <u>walls</u> Missing or incomplete <u>foundation</u>	Totally destroyed

## ACRONYMS AND ABBREVIATIONS

<b>4Ps</b>	Pantawid Pamilyang Pilipino Program
<b>CCCM</b>	Camp Coordination and Camp Management
<b>CCT</b>	Conditional Cash Transfer
<b>CFW</b>	Cash for Work
<b>CGI</b>	Corrugated Galvanised Iron
<b>DRR</b>	Disaster Risk Reduction
<b>DSWD</b>	Department for Social Welfare and Development
<b>EC</b>	Evacuation Centre
<b>FGD</b>	Focus Group Discussion
<b>GSC</b>	Global Shelter Cluster
<b>IFRC</b>	International Federation of the Red Cross and Red Crescent Societies
<b>HLP</b>	Housing Land and Property
<b>KII</b>	Key Informant Interview
<b>NDRRMC</b>	National Disaster Risk Reduction and Management Council
<b>ODK</b>	Open Data Kit
<b>WASH</b>	Water, Sanitation and Hygiene

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## INTRODUCTION

### CONTEXT

At 08:12 on 15th October 2013 an earthquake with a magnitude of 7.2 occurred in Region VII (Central Visayas) of the Philippines, the epicentre of which was located in the eastern part of Bohol Province. As of 2<sup>nd</sup> November 2013 a total of 3,189 aftershocks had been recorded. According to governmental data a total of 3,158,009 individuals have been affected by the earthquake and more than 1.2 million people were evacuated. Assessments conducted by the Department for Social Welfare and Development (DSWD) and the National Disaster Risk Reduction Management Council (NDRRMC) have recorded, as of 3<sup>rd</sup> November 2013, a total of 222 fatalities and 976 injuries, and 8 individuals still missing. A humanitarian action plan was launched on 25 October, seeking \$46.8 million to cover aid delivery to 344,300 people. The Central Emergency Response Fund allocated (15 November) a rapid response grant of US\$4,997,324 targeting 217,130 people for relief assistance.

DSWD leads the Shelter Cluster in the Philippines and coordinates the response provided by local, national and international responders, with support from the International Federation of the Red Cross and Red Crescent Societies (IFRC). Within the ten days following the earthquake, the DSWD and NDRRMC had already estimated that a total of 56,047 houses (13,021 destroyed and 43,026 damaged), 41 bridges, and 18 roads had sustained damage as a result of the impact of the earthquake and aftershocks. In addition, seaports, airports, churches, government buildings, schools, and hospitals in the affected area also sustained major and partial damages.

By early November, critical infrastructure damaged by the earthquake has been largely repaired with 38 bridges and 16 roads made passable. However, with regards to housing more than 344,300 people had been displaced, of whom 71,400 people were staying in 99 evacuation centres and the remaining and vast majority (80 per cent) were living in makeshift shelters built in open spaces near their damaged homes<sup>1</sup>. As reported by the UN Office for the Coordination of Humanitarian Affairs, many displaced families returned home where they set up emergency shelters using salvaged material from their houses and distributed relief items such as tents and tarpaulins.

### ASSESSMENT OBJECTIVES

Through a standing partnership with the Global Shelter Cluster, REACH<sup>2</sup> was deployed to Bohol on 23<sup>rd</sup> October in order to facilitate a rapid assessment in Bohol, the province most affected by the earthquake according to government data and preliminary assessments indicating high levels of shelter and infrastructure damage.

The overall objective of the rapid shelter sector assessment is to contribute to an effective and timely humanitarian response in Bohol province by informing the humanitarian community in line with key humanitarian milestones. In order to achieve this, the global Shelter Cluster deployed an assessment team comprised of 8 team leaders, 31 enumerators, and 6 focus group discussion facilitators. This team was tasked with the collection, analysis and dissemination of data on key indicators for the shelter as well as other sectors of humanitarian assistance over Bohol province.

Within two days upon arrival the assessment tools were developed and endorsed by Shelter Cluster partners. Subsequently, two full days were dedicated to training and field testing with all participants in the assessment, including one-day training for assessment team leaders and one-day training for enumerators. Data collected was conducted during a 10 day period, between 29<sup>th</sup> October and 7<sup>th</sup> November 2013.

<sup>1</sup> Bohol Earthquake Action Plan October 2013 (accessed 23 November): <http://reliefweb.int/organization/hct-philippines>

<sup>2</sup> REACH is an interagency program of IMPACT Initiatives, ACTED and UNOSAT. Since 2011 REACH has formalized a partnership with the Global Shelter Cluster (GSC) to support the strengthening of its coordination and planning capacity. Dedicated REACH teams (including assessment, database and mapping experts) are available to be rapidly deployed to the field in the emergencies in order to facilitate interagency assessments and mapping activities on behalf of the shelter cluster. Resulting information products are used to enable better planning and coordination by the cluster, and are widely disseminated. For more information, see: [www.reach-initiative.org](http://www.reach-initiative.org)

## I. ASSESSMENT METHODOLOGY

This section describes the methodology that was developed and implemented during the rapid shelter sector assessment in Bohol province. The assessment methodology below outlines (a) the multi-stage sampling strategy designed specifically and used for the assessment, including final sample size by municipality; (b) the data collection process, including an overview data collection methods and tools; (c) the representativeness and limitations of the data collected; and (d) a demographic overview of the assessed population.

### 1. MULTI-STAGE SAMPLING STRATEGY

In order to give a complete picture of the situation on Bohol Province in the aftermath of the 15th October earthquake, REACH utilised a multi-stage cluster sampling methodology, which is briefly outlined below. This sampling methodology was chosen in order to avoid a sampling bias and to provide the Shelter Cluster, and other humanitarian actors responding to the crisis, with a complete and representative picture of the situation rather than focusing solely on areas that have sustained the most damage according to initial assessments.

#### 1.1. SELECTION OF MUNICIPALITIES FOR ASSESSMENT

A secondary data review was used to better understand the overall situation in Bohol before the earthquake, as well as a way to incorporate government findings on household damage and displaced population. Poverty incidence, number of damaged houses, the ratio of totally to partially damaged houses, affected population, and number of displaced individuals were combined with equal weight to create a single priority score, with a greater total score being higher priority.

REACH assigned each municipality in Bohol province high, medium, or low priority category. A group of 4 municipalities from each category were randomly selected for assessment, for a total of 12 municipalities. In each of these municipalities, a representative sample of households was calculated with a 95% confidence interval and 5% margin of error. This sample size was then distributed across a random selection of Barangays. The categorization of municipalities was reviewed during data analysis, as a result of updated government data regarding damage to shelters, and there was almost no change of the selected municipalities compared to the initial list of municipalities identified as low, medium and high priority with the exception of the medium priority municipality of Guindulman which was re-categorised as low-priority.

#### 1.2. SELECTION OF BARANGAYS WITHIN MUNICIPALITIES

In selected municipalities with fewer than 20 Barangays, all Barangays were assessed. In municipalities with greater than 20 Barangays, a maximum of 20 Barangays were selected at random, with equal distribution across three population classes for the municipality. The representative household sample for each municipality was distributed across Barangays based on stratified sampling using population, with a higher number of households targeted for assessment in Barangays with larger populations. A total of 214 barangays were assessed at the household level, complimented by 182 key informant interviews with Barangay officials (see below section on key information interviews).

#### 1.3. SELECTION OF HOUSEHOLDS WITHIN BARANGAYS

In each of the targeted Barangays, enumerators randomly selected households for assessment. Households were assessed in each Barangay until the target sample size for the municipality had been reached. Households were selected by enumerators through a randomised field walk, assessing 1 households out of every 3 in urban areas, and every household in rural areas in the geographical location they were assigned. Due to approximately 30% of households not being present at the time of assessment, field teams were instructed to oversample from each Barangay to ensure that a representative sample size of present households was reached at the municipal level. The maximum target number for this assessment in Bohol Province was 4,800 households, based on a maximum sample of 400 households in each municipality (385 households with a buffer of 15 additional households).

Table 1 below provides a list of the 12 municipalities selected for assessment, the assigned priority category, and representative sample size. All municipalities initially targeted for assessment were assessed. Additionally, through the random household selection 859 shelters were assessed where no household members were present at the time of assessment.

**Table 1:** Sampled locations (target municipality, target small size, assessed households and shelters)

Priority Category	Municipality	Target sample size	Assessed Households	Assessed shelters with no household present
High	Carmen	369	410	134
	Catigbian	355	371	169
	Maribojoc	352	401	30
	Tubigon	370	459	25
Medium	Candijay	361	458	10
	Duero	347	343	43
	Guindulman	363	316	34
	Sevilla	325	325	114
Low	Baclayon	346	346	80
	Batuan	333	340	39
	Loay	344	458	22
	Sikatuna	296	306	159
<b>TOTAL</b>		<b>4161</b>	<b>4533</b>	<b>859</b>

#### 1.4. DATA REPRESENTATIVENESS, EXTRAPOLATION AND LIMITATIONS

The combination of stratified, cluster, and random sampling methods ensures equal representation of relevant categories of administrative units and households while avoiding sampling bias at each level. Thus, the dataset provides the Shelter Cluster and other humanitarian actors responding to the crisis with a complete and representative picture of the situation. The methodology used in this assessment is representative at the municipal level with a 95% confidence interval and 5% margin of error. Regarding, other categories of households, including but not limited to housing type, damage level, and vulnerability, the data presented is not representative and conclusions should be drawn carefully.

The methodology was designed for the extrapolation of findings based on municipal categories. Therefore, findings for the municipalities in a given category can be considered indicative of the situation in municipalities that are also members of that category. For instance, the level and types of damage recorded across Maribojoc, Catigbian, Carmen, and Tubigon give a good indication as to the range of level and types of damage to be expected in Antequera, Calape, or other municipalities of the high category priority.

#### 1.5. GEOGRAPHIC INFORMATION SYSTEMS AND MAPPING

The maps listed below were created using primary data collected through the assessment and secondary data made available by the Government of the Philippines and humanitarian actors operating in response to the Bohol earthquake to visualise findings presented in this report. The maps are not included in the report but available upon request. The maps are intended to be used as coordination and planning tools to inform the ongoing response. Additionally, maps were critical in training the enumerators and conducting the field assessments. Each team was given a set of maps for the targeted municipality for each day's data collection with target areas and sample sizes highlighted as guidance.

**Map 1:** Level of shelter damage per municipality

**Map 2:** Alternative emergency shelter situation per municipality

**Map 3:** Shelter recovery intentions of earthquake affected households.

**Map 4:** Status of shelter repair per municipality

**Map 5:** Shelter Assistance received by level of damage (by source of assistance)

**Map 6:** Change in Water Access and prioritization by the affected households.

**Map 7:** Primary income source sufficiency and poverty incidence

## 2. MIXED-METHOD DATA COLLECTION

The rapid shelter assessment included four components of data collection and analysis: (a) review of secondary data made available by national and regional government bodies and humanitarian agencies; (b) household level assessments; (c) key informant interviews (KIIs); (d) focus group discussions (FGDs); and (e) Geographic Information Systems (GIS) and mapping of all collected and analysed data.

### 2.1. SECONDARY DATA REVIEW

The assessment team reviewed data on the impact of the earthquake made available by DSWD, NDRRMC and a range of other national and international sources. The Secondary Data Review (SDR) informed the design of the data collection tools presented below. The SDR was also used during the data analysis phase to triangulate and contextualize data collected by enumerators in the field.

### 2.2. HOUSEHOLD ASSESSMENTS

The primary method of data collection was a representative random sample of individual households. The assessment tool, designed by REACH in close collaboration with the Global Shelter Cluster, was built to contain a combination of enumerator observations (particularly regarding shelter damage in order to ensure standardisation of categorisations) and responses from the households themselves. In cases where the household was not present at the time of the assessment, the household's shelter itself was assessed based only on enumerator observations regarding the extent of the damage sustained.

While the household assessment tool was designed primarily to collect detailed shelter data, core indicators covering early recovery, protection / housing land and property, and water sanitation and hygiene were integrated following consultation with the inter-cluster coordination forum.

Household assessments were conducted using an assessment tool built on the Android smartphone based Open Data Kit (ODK) platform which significantly improves data quality as a result of: (a) reducing human error as a result of loss of forms, data collection mistakes, and data entry mistakes thus improving the accuracy of collected data; (b) increasing the speed at which mapping products and analytical reports can be produced through reducing data cleaning time and removing the need for data entry; and (c) ensuring the protection of data as a result of completed forms being removed from the data collection tool upon upload to the centralised database.

Data collected by enumerators was subsequently validated by the team leader before being uploaded to the central database, after which a final data quality check was conducted by the GIS/Database Manager.

### 2.3. FOCUS GROUP DISCUSSIONS

At the time of the assessment, significant populations were reported by government data as being displaced from their homes. These individuals were classified into 3 groups: those living in formal evacuation centres (ECs) set up by the local or provincial government, those living in community-based or informal evacuation centres, and those living directly outside their homes. While the latter group would be covered by the household assessment, the former two groups needed to be covered by other means. To this end, focus group discussions (FGDs) were conducted in formal and informal evacuation centres.

Initially, the methodology sought to conduct focus group discussions in 1 formal and 1 informal site in each municipality targeted for household assessment. However, in the pilot phase of the assessment, it was discovered that evacuation centres were not necessarily present in all municipalities that available government data indicated. Targeting was revised to cover evacuation centres in as many municipalities as possible, with municipalities reporting higher levels of damage prioritized. In each municipality covered by focus group discussions, an informal and formal evacuation centre was targeted for assessment, though ultimately this was not possible in all cases.

Within each evacuation centre, a separate FGD was conducted with a small group of men, women, and youth. In very small evacuation centres where three separate FGDs were not possible, 1 or more FGD was conducted with each of the aforementioned groups.

A FGD guidance sheet and data collection form was designed by the REACH team in coordination with the shelter cluster and the Camp Coordination and Cam Management (CCCM) clusters. The FGD tool focused on the origin and demographic breakdown of persons within the evacuation centre. It also covered reasons for displacement, received assistance and needs, as well as the hygiene and sanitation situation in the evacuation centre. A total number of 107 FGDs were organised with single-sex groups of 2 to 5 individuals.

## 2.4. KEY INFORMANT INTERVIEWS

In each Barangay assessed under the household assessment, a single key informant interview (KII) was planned to be conducted to gain a broader understanding of the situation in the community. Due to the unavailability of appropriate interviewees (Barangay officials), this was not possible in all instances.

KIIs were designed to collect additional qualitative data from pre-identified local stakeholders with the view to refine the analysis of the data collected by enumerators through household assessments. The KII tool included questions to identify gaps in humanitarian assistance, presence and service of local government and infrastructure, as well as community assets, such as heavy machinery, that could aid in recovery efforts. Overall economic health, including livelihoods and markets, were also assessed.

Field teams conducted interviews with Barangay Captains, where available, and other Barangay officials or local non-governmental organisations (NGOs). Field teams completed a total number of 182 KIIs.

## 2.5. DEMOGRAPHIC OVERVIEW OF THE ASSESSED POPULATION

### Sex and age disaggregated household data

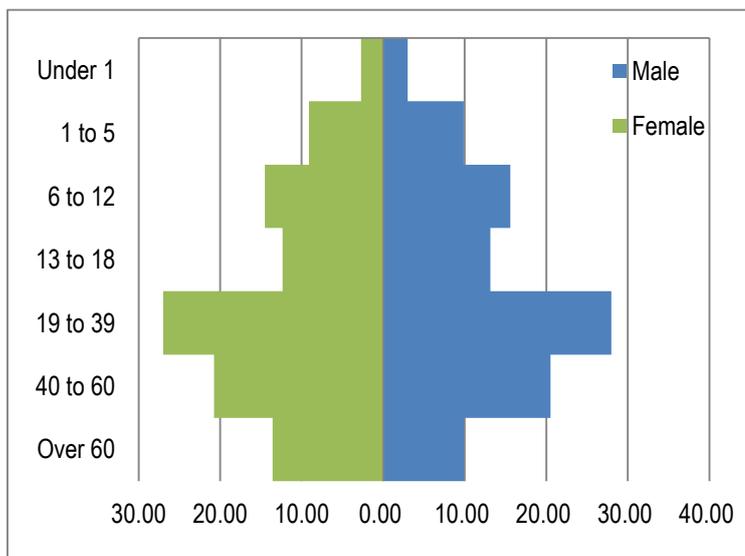
Field assessment teams assessed a total number of 4533 households across the 12 targeted municipalities. An average household size of 5 individuals, with a roughly equal gender split, was reported. The 19-39 years age-group was the largest population cohort, making up 30% of the total assessed population. The combined cohorts for individuals under 18 years old bring the proportion of children to 36% of the assessed population. The dependency ratio across the twelve municipalities is roughly the same, approximately 49%; considerably lower than the national average of 62%<sup>3</sup>.

### Categories of vulnerable households

The Shelter Cluster in the Philippines has identified categories of households particularly vulnerable during emergencies and which should be prioritised in the shelter sector response as they may face particular difficulties accessing relief and recovery assistance, notably when rebuilding their homes.

The Shelter Cluster applies these categories of vulnerable households in all its strategies for responding to disasters in the Philippines with the aim to ensure they have an equal, safe and dignified access to assistance, and to provide specialist support as required.

Figure 1: Age groups within assessed population



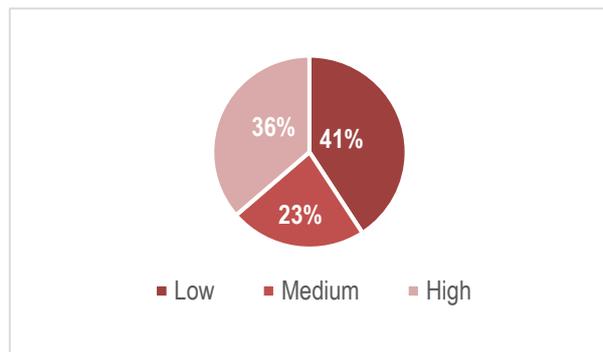
<sup>3</sup><http://data.worldbank.org/indicator/SP.POP.DPND/countries/JP-PT-DE-US-BR-CN-PH?display=graph>, retrieved 03/11/13

The following two categories of vulnerable households have been used in the post-earthquake shelter assessment in Bohol province:

- Single heads of households, and in particular women-headed households; and
- Households including member(s) with specific needs: pregnant and/or lactating women; persons living with a physical disability; seriously ill, or members with special needs; persons living with a chronic illness; and separated children.

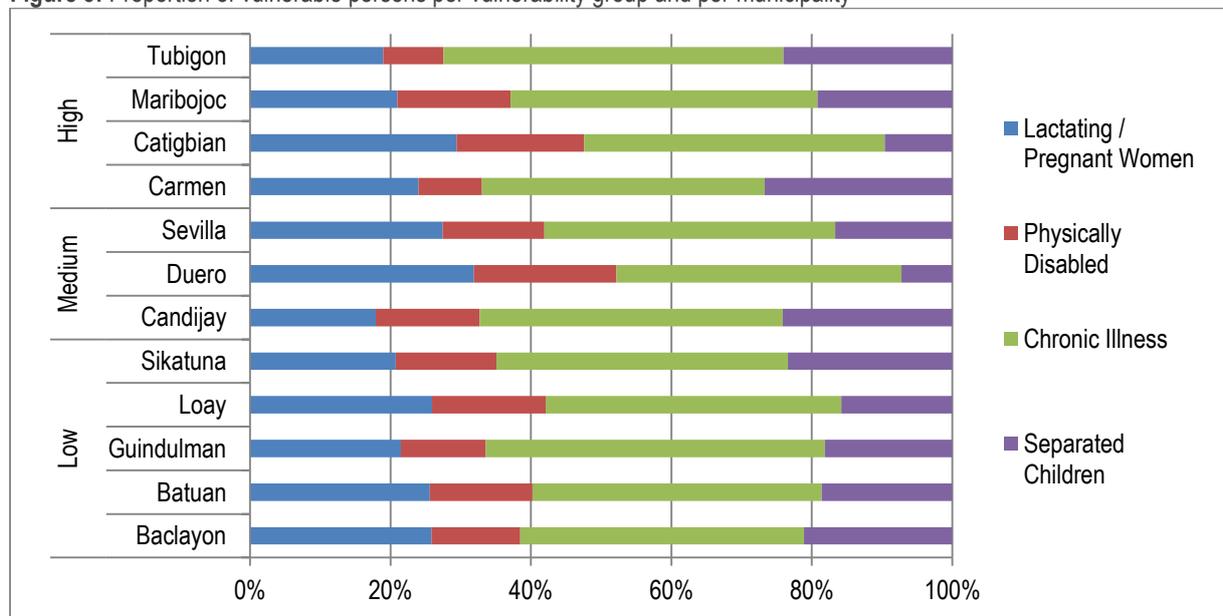
Across all municipalities, 10% of the population was identified as female single-head of households with over one third (36%) in high-priority municipalities.

**Figure 2:** Female headed households per priority category of municipality



Across the twelve assessed communities, 17% of assessed households included one or several persons with specific needs. The highest proportion of households including persons with specific needs were identified in Tubigon Municipality, 19%, followed by Sikatuna, 14%. In the remaining municipalities, an average of 7% to 12% households reported including one or several members with specific needs.

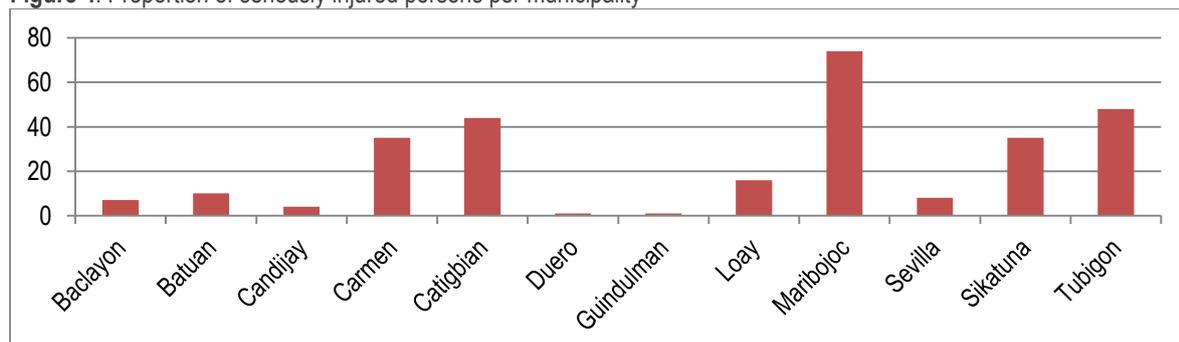
**Figure 3:** Proportion of vulnerable persons per vulnerability group and per municipality



### Seriously injured persons

Across the twelve assessed municipalities, 1% of the population was reported has a household member that was injured during the earthquake. The municipalities in which the highest proportion of the population had been injured during the earthquake were the high-priority municipalities of Maribojoc (26%), Tubigon (17%), Catigbian (16%).

**Figure 4:** Proportion of seriously injured persons per municipality



## 2. ASSESSMENT FINDINGS

This section of the report presents the main findings from the rapid shelter assessments and is comprised of:

- a series of shelter specific findings, including shelter types, level of shelter damage, emergency shelter options and needs of households, as well as their intentions and needs in terms of shelter recovery; and
- a series of findings which cut across shelter and other sectors of humanitarian assistance, notably in regards to tenure security and access to land (Protection/Housing Land and Property – HLP), access to sanitation facilities (Water, Sanitation and Hygiene – WASH), livelihoods and income sources (Early Recovery), and displaced households in evacuation centres (Camp Coordination and Camp management – CCCM).

### 2.1. SHELTER SPECIFIC FINDINGS

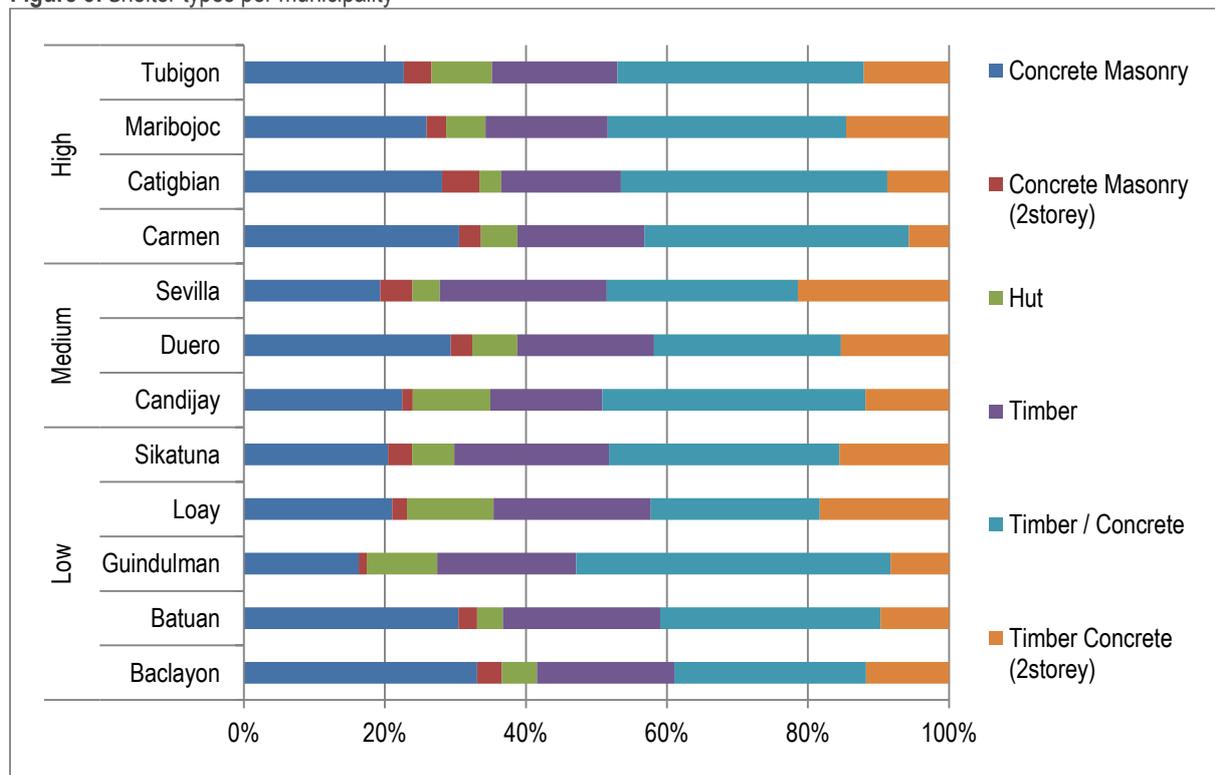
This sub-section outlines assessment findings related to shelter types, level of shelter damage, emergency shelter options and needs of households, as well as their status, intentions and needs for shelter recovery.

#### 2.1.1. SHELTER TYPES BY MUNICIPALITY

Across assessed municipalities, the most common shelter types identified were mixed one-storey timber-masonry dwellings, accounting for a third (33%) and one-storey masonry structures, accounting for a quarter (25%) of all shelters. The least common shelter types identified during the assessment were two-storey mix timber-masonry structures (13%), nippa huts (7%), and two-storey masonry buildings.

The twelve municipalities selected for assessment have relatively similar shelter profiles, with each shelter type represented in relatively similar proportions across all selected municipalities. Nonetheless, some municipalities have higher proportion of masonry structures. The high-priority municipalities of Carmen and Catigbian have the highest proportion of concrete dwellings, 10% of all shelters.

Figure 5: Shelter types per municipality



The lowest proportion of masonry dwellings was reported in Guindulman (5%). There are also greater differences between municipalities in regards to huts with the highest proportions of huts identified in the municipalities of Loay (16%), Candijay (15%) and Tubigon (12%). The lowest proportions of huts are reported in the municipalities of Batuan (4%), Catigbian (5%), and Sevilla (5%).

The municipalities with the highest proportion of mixed timber-concrete shelters were Candijay, Carmen, Catigbian, and Tubigon (9%-10%); however on the whole this type of shelter was reported to roughly the same level, between 7% and 10%, across all municipalities. This similar proportion of mixed timber-concrete shelters across municipalities is important to note, as this shelter type emerged as the most affected by partial damage.

### 2.1.2 LEVEL OF SHELTER DAMAGE

**Overall, the highest level of damage identified across the selected municipalities was ‘partial damage’.** Partially damaged shelters make up half (49%) of all shelters in the selected municipalities, whereas shelters with major damage account for 15%. Only a small proportion of the housing stock, 5%, was identified as being totally destroyed, additionally 31% were identified with no damage. This finding points to the need for broader based support and prioritisation according to a range of vulnerabilities, rather than targeting shelter assistance solely according to levels of shelter damage.

Table 2: Average level of shelter damage by shelter damage category and priority category of municipality

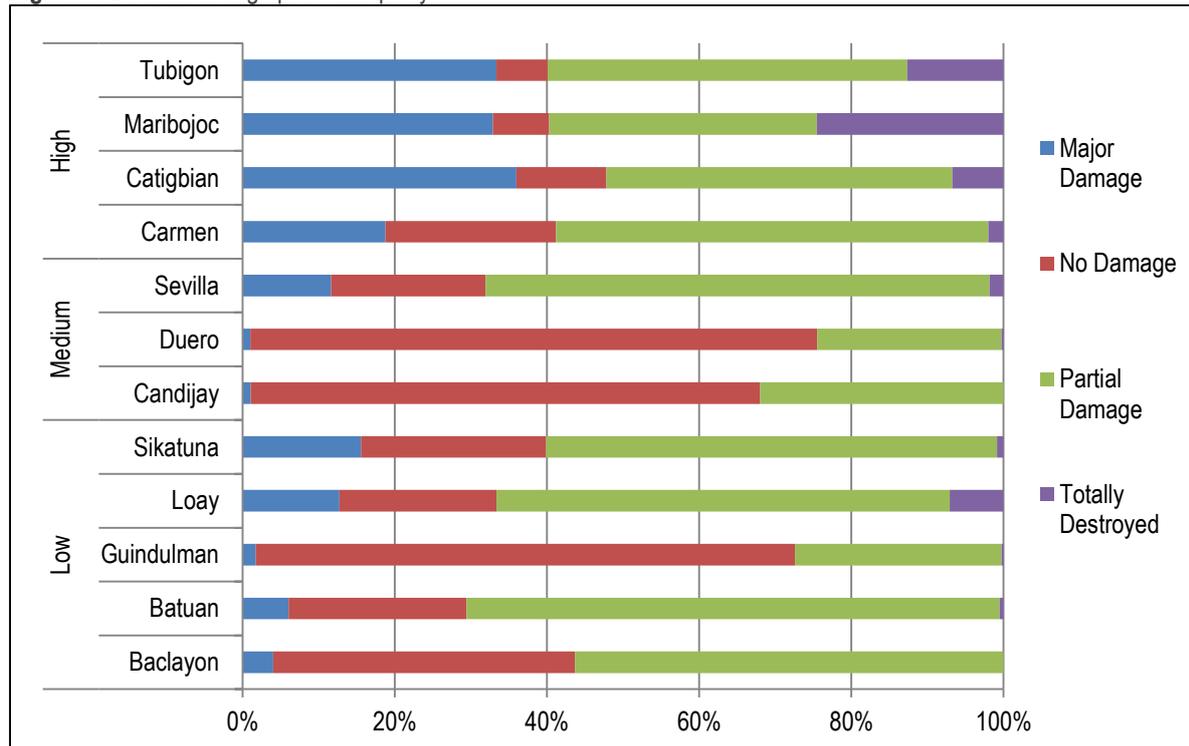
	SHELTER DAMAGE CATEGORY			
	Totally damaged	Major damage	Partial damage	No damage
TOTAL	5%	15%	49%	31%
Low priority	2%	10%	61%	27%
Medium priority	1%	4%	38%	57%
High priority	11%	30%	47%	12%

**Across all municipalities, the highest proportion (11%) of totally destroyed shelters were identified within high priority municipality category,** in particular in the municipalities of Maribojoc and Tubigon, where 24% and 13% respectively of the housing stocks were identified as totally destroyed.

**Similarly, the highest proportions (30%) of shelter with major damage were identified within the high priority municipality category,** in particular in Catigbian and in both Maribojoc and Tubigon where respectively 36% and 33% of the housing stock sustained major damage. Overall, the findings from households’ assessment data on level of shelter damage in regards to total and major damage confirm the prioritisation applied for the assessment. This finding also confirms findings on households’ intentions for shelter recovery and shelter assistance needs as described further in the report.

**One key finding from the assessment is that the highest proportion (61%) of partially damaged shelters - accounting for half of the overall damage to housing stocks across the twelve municipalities - were identified within the low priority municipality group.** Among the low-priority municipalities, 70% of the housing stock in Batuan was identified as partially damaged, 66 % in Sevilla, and 59% in Loay and Sikatuna. As underlined above, these is a need to target shelter assistance based on the proportion of the population affected rather than highest degree of shelter damage, and the type of shelter assistance should also be informed by the largest need of the population affected by partial damage to their shelters

Figure 6: Level of damage per municipality



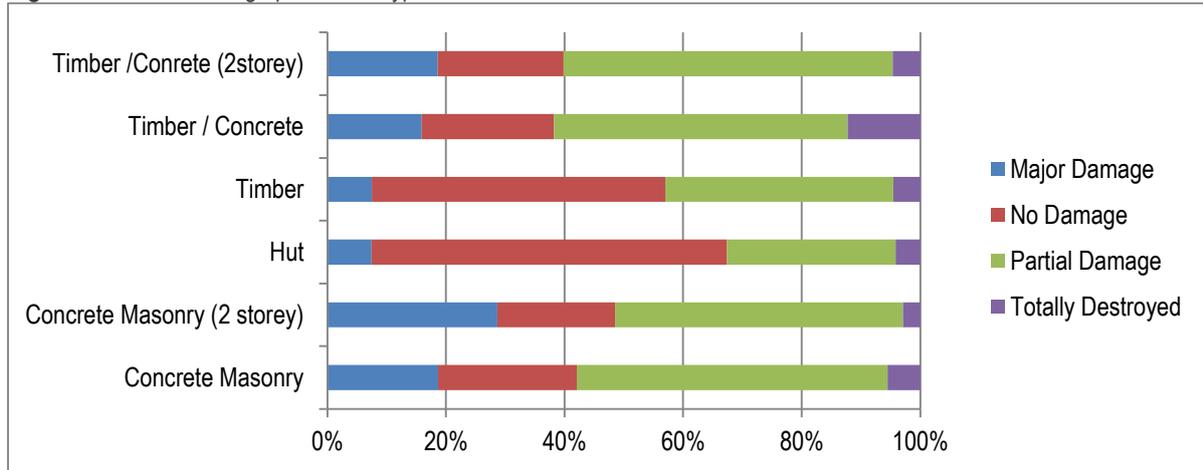
**Overall huts or timber-based structures were the least affected by the impact of the earthquake, with 60% huts and 50% timber houses reported as not damaged at all across assessed municipalities.** There were significantly fewer destroyed and severely damaged huts and timber houses out of the total number of this type of shelters than for concrete/masonry dwellings across all assessed areas. Huts proved to be the most earthquake-resistant type of shelter with only 4% destroyed, 8% showing major damage, and 28% showing partial damage. While few timber houses were reported as destroyed or with major damage, nearly 40% of the total assessed timber houses had sustained partial damage, a slightly higher proportion than for huts.

**One-storey houses built using timber and concrete have sustained the highest level of destruction, accounting for 34% of the total number of shelters identified as destroyed; and it is important to recall that this shelter type accounts for a third of all reported shelters (33%) across assessed municipalities.** Combined with findings for two-storey mixed timber-masonry houses, this type of structure account for almost half of the overall number of shelters identified as having sustained across the twelve municipalities. Over half (54%) of timber-concrete dwellings in the target municipalities were identified as partially damaged; between 17% (one-storey) and 19% (two storey) have majorly damaged, and 5% (both one and two storey) totally destroyed.

**One-storey houses built entirely in concrete were the second most affected type of shelters in terms of destruction, accounting for 28% of the destroyed housing stock in the target municipalities.** This is directly correlated to the higher proportion (25%) of this shelter type in the overall assessed shelters. In regards to the level of major damage, one-storey masonry dwellings were identified to have been less affected (20%) than two-storey buildings of the same type (30%). While one quarter (26%) of concrete dwellings were identified as undamaged, this type of housing structure was significantly impacted by the earthquake, accounting for almost one third (30%) of the overall partially damaged housing stock across assessed municipalities.

The disparities in the proportions of partial and major damage for each shelter type can be partly explained by the inability for rigid masonry structures to withstand the increased lateral and vertical forces placed on them during earthquakes. Additionally the recent earthquake occurred on a newly discovered fault line, thus housing in Bohol province was on the whole not built with earthquake resilience in mind.

Figure 7: Level of damage per shelter type



The findings above aim to inform the ongoing shelter response in terms of promoting a **‘build back better’ approach with affected households who used to live either in concrete or in mix timber-concrete housing**. Shelter responders should help these households to rebuild a different type of structure or to repair their damaged timber-concrete shelters in a way to make them more resistant to earthquake.

More generally, the shelter response should aim to help affected households to reduce the risk and mitigate the impact of future disasters through for example the provision of technical support and capacity building on Disaster Risk Reduction (DRR) applied in shelter design and construction.

### 2.2.3. EMERGENCY SHELTER SITUATION AND NEEDS

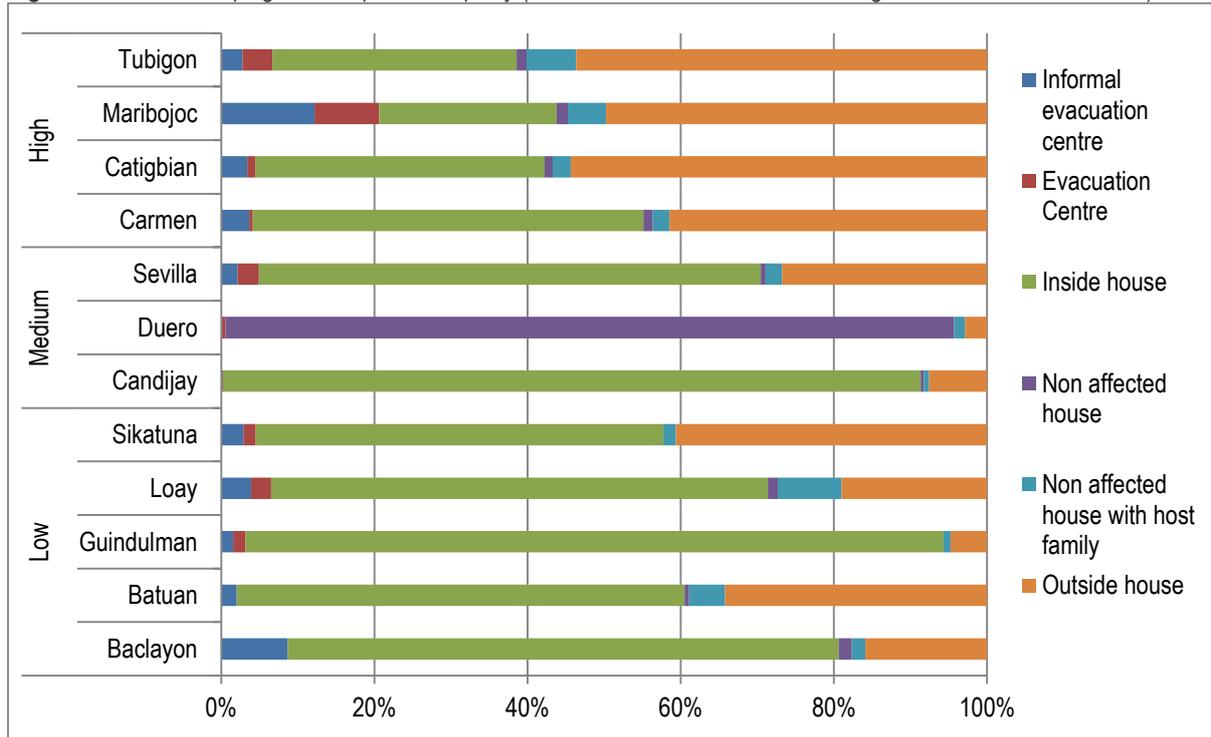
Overall, the majority (51%) households in the assessed municipalities were sleeping inside their house at the time of the assessment. However, **one in four assessed households (25%) reported sleeping in the immediate vicinity of their house** and there are significant differences regarding where households choose to sleep were identified amongst the twelve assessed municipalities.

**The highest proportion of households sleeping outside were found in high-priority category municipalities** of Catigbian (54%), Maribojoc (49%), Tubigon (42%) and Carmen (41%), which are also the municipalities where the highest level of destroyed shelters were identified.

**There is also an important proportion of households reporting sleeping outside their houses in the low-priority municipalities of Sikatuna (40%), Batuan (34%) and Loay (19%),** which is where the highest levels of partially damaged houses were reported. Much fewer households reported sleeping outside their house in the medium-level priority municipalities of Duero (1%) Guindulman (2%), and Candijay (2%), with the exception of Sevilla where almost one third of assessed households reported sleeping outside their house.

While assessed at the location of their usual residence, an important number of households reported not sleeping inside or outside their house but in formal an informal evacuations centres, with the largest proportion of them located in Maribojoc (20% out of the assessed households in this municipality). **Combined with the findings on households reporting sleeping outside their house, 70% households assessed in the high-priority municipality of Maribojoc were not sleeping in their house at the time of the assessment.**

Figure 8: Current sleeping location per municipality (note: 'inside house' refers to the original home of the household)

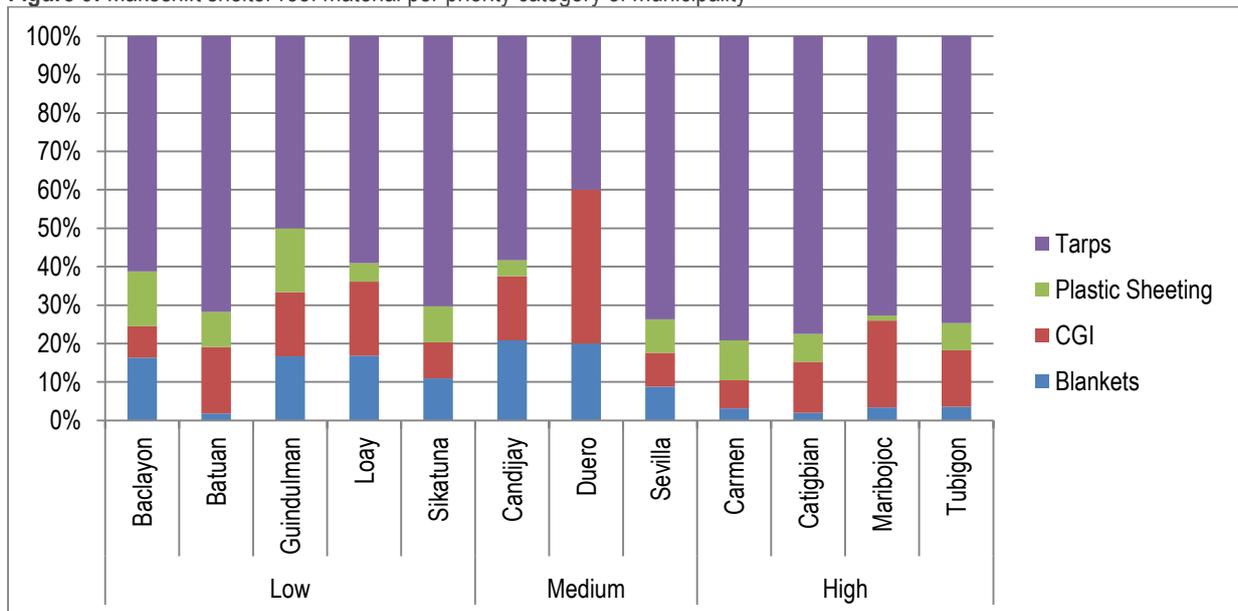


The primary alternative shelter solutions for households sleeping outside their house were makeshift shelters (71%) and the remaining are using tents.

Across all municipalities, the majority of assessed households used tarpaulins as roofing material for their makeshift shelters; tarpaulins being the principal form of emergency shelter assistance provided to affected households at the time of the assessment.

A minority of households in the affected areas used Corrugated Galvanised Iron (CGI) sheets to put a roof on their makeshift shelters, notably in Duero the only municipality where households used as much CGI (25%) as tarpaulins (25%) as roofing material for makeshift shelters.

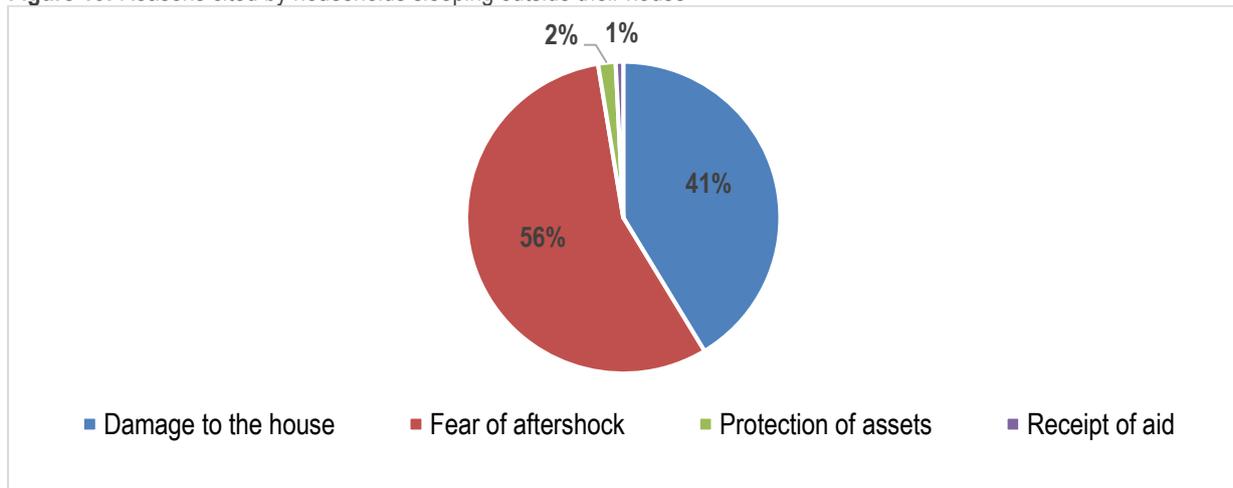
Figure 9: Makeshift shelter roof material per priority category of municipality



In municipalities where high proportions of households are sleeping outside their houses in makeshift shelters, **there is a clear need for the implementation of transitional shelter programming.** The need for transitional shelters for households reporting sleeping outside of their house is confirmed by findings on the type of assistance identified by households for shelter recovery, as described further in the following section.

**Overall, the two main reasons cited by households reporting sleeping outside were the fear of aftershock (56%) and the damage sustained by their housing (41%).** The fear of aftershocks cannot be understated as over 2,500 aftershocks were recorded in the weeks following the earthquake with 64 tremors strong enough to be felt. There was only a marginal number of households reporting sleeping outside their house for the purpose of protecting their properties or livelihood assets, and almost none of the assessed households across the twelve municipalities reported sleeping outside their houses while waiting to receive assistance.

Figure 10: Reasons cited by households sleeping outside their house

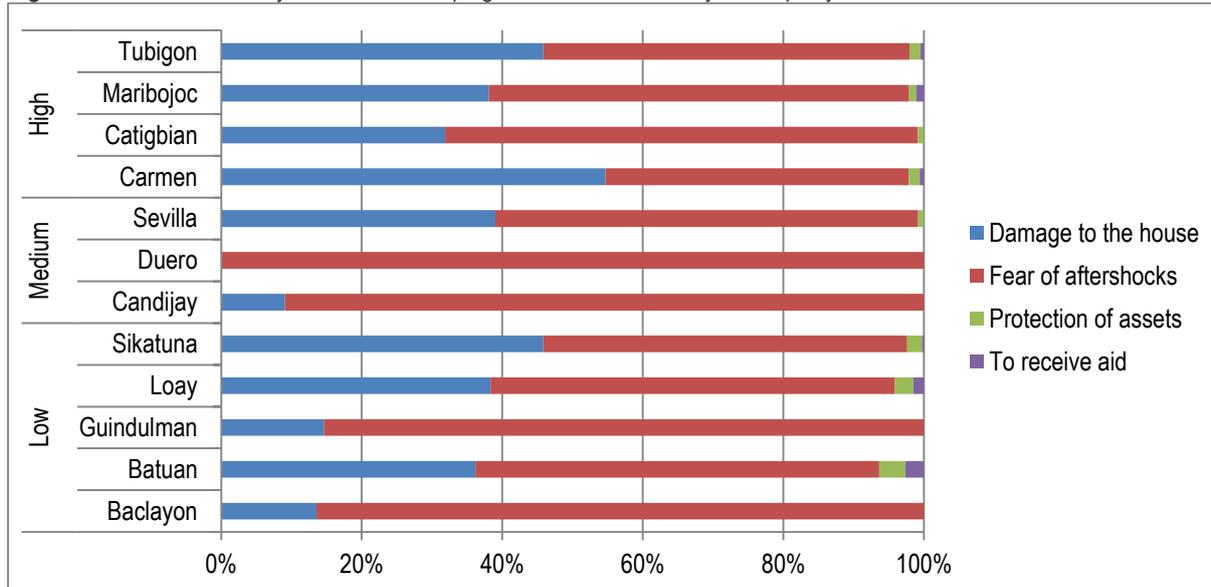


In line with the findings on the level of shelter damage as describe above, **the highest proportion of households citing the damage sustained by their housing as the reason for sleeping outside were located in the municipalities where the level of shelter destruction and major damage was the most important,** principally in the high-priority municipalities of Carmen, Tubigon, Maribojoc and Catigbian. A high proportion of households also cited damage to their house as the reason for sleeping outside in the low-priority municipalities of Sikatuna, Loay and Batuan and the medium-priority municipality of Sevilla, which are the municipalities where the highest levels of partial damage to housing were reported.

**With regards to fear of aftershocks, the medium-priority municipality of Duero stands out with all but one respondents citing this as the reason for sleeping outside,** followed by the municipalities of Candijay, Baclayon, and Guindulman. When triangulated with findings on the level of shelter damage, it is interesting to note that these four municipalities are also where households reported the highest levels of undamaged housing with respectively 74% in Duero, 71% in Guindulman, 67% in Candijay, and 40% in Baclayon of households reporting no damage to their shelters.

This rapid assessment was undertaken two weeks after the earthquake struck Bohol province, thus the reasons for sleeping outside cited by respondents may have changed since the time of the assessment. However, the fear of aftershocks may have lingered in the mind-set of affected populations as this was this was the strongest earthquake to hit Bohol in nearly 25 years, and most importantly it is said to be possibly caused by a fault line unknown until the disaster. **There is a need to investigate further in order to identify and ensure psychosocial assistance is available for households** who may require support to cope with the trauma caused by the earthquake.

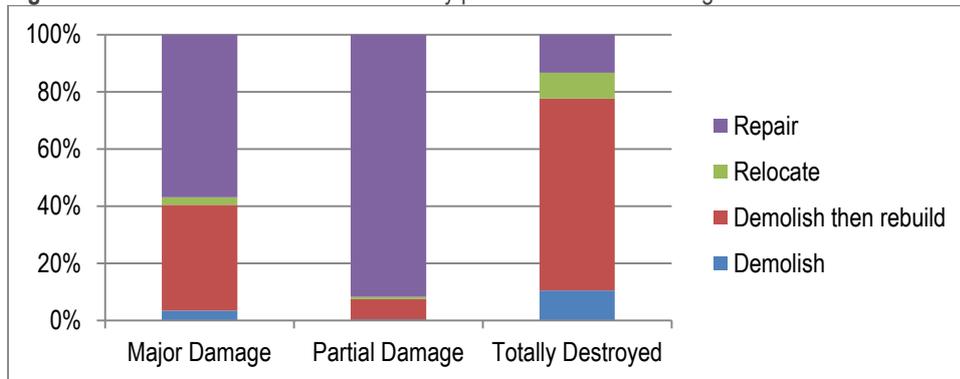
Figure 11: Reasons cited by households sleeping outside their house by municipality



### 2.2.4 INTENTIONS OF HOUSEHOLDS FOR SHELTER RECOVERY

Overall, the future plans of households in the target areas regarding their shelter is corollary of the level of damage sustained to the housing stock within each municipality. **For partially damaged shelters, the majority (80%) of the population across target municipalities was planning to carry out repairs at the time of the assessment.**

Figure 12: Households' intentions of recovery per level of shelter damage



**For households who reported major damage sustained by their shelters, much fewer had planned to carry out repairs (46%) and one third was planning to demolish and rebuild their houses.** Only few households reported planning to demolish (3%) and to relocate (2%).

**For totally destroyed shelters, the majority of the households (53%) reported that they planned to demolish their house then rebuild it.** The remaining households with destroyed shelters are split almost equally between those who will undertake repairs (10%), those who will demolish (8%) and those who will relocate (7%).

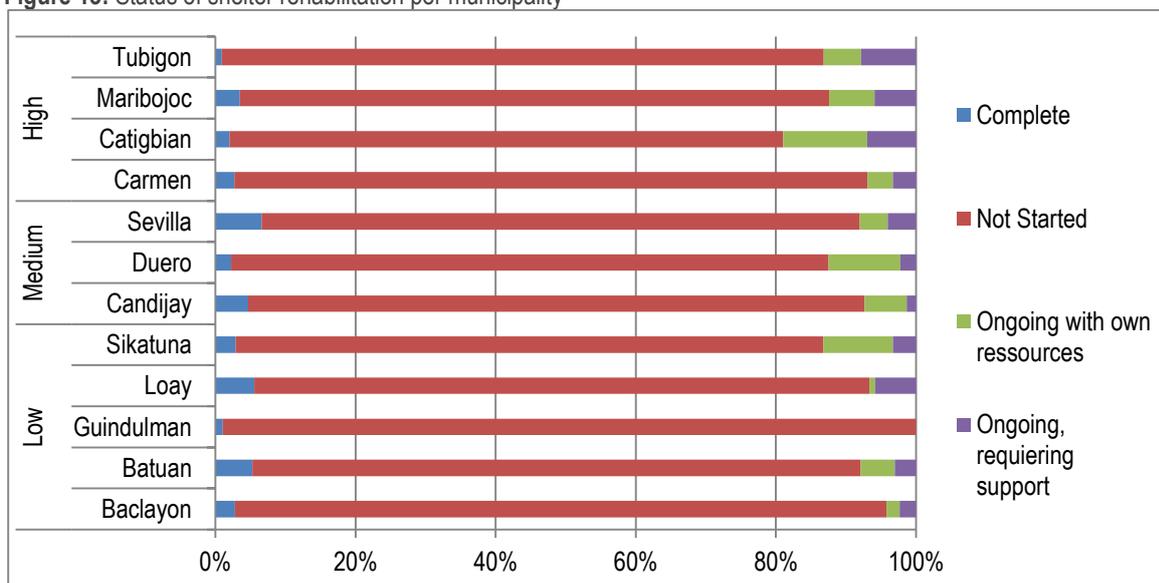
When organised according to the three priority categories of municipalities, the plans of households for shelter recovery are also corollary to the level of shelter damaged they sustained as a result of the earthquake. **In the municipalities ranked as low-priority, the vast majority of households (73%) reported planning to carry out repairs and a small proportion was planning to demolish and rebuilding their houses.** At the time of the assessment, only 1% of the households in the low-priority municipalities were planning to relocate and about 10% households has not made any plans yet in regards to their shelters.

In the medium-priority municipalities, the highest proportion of households (80%) reported planning to carry out repairs as in the low-priority municipalities, and only 5% reported planning to demolish and rebuild. There was a much larger proportion of the assessed population (22%) was planning to demolish and rebuild in high-priority municipalities, where fewer households (56%) were planning to repair their homes.

### 2.2.5. HOUSING RECOVERY STATUS AND REQUIREMENTS

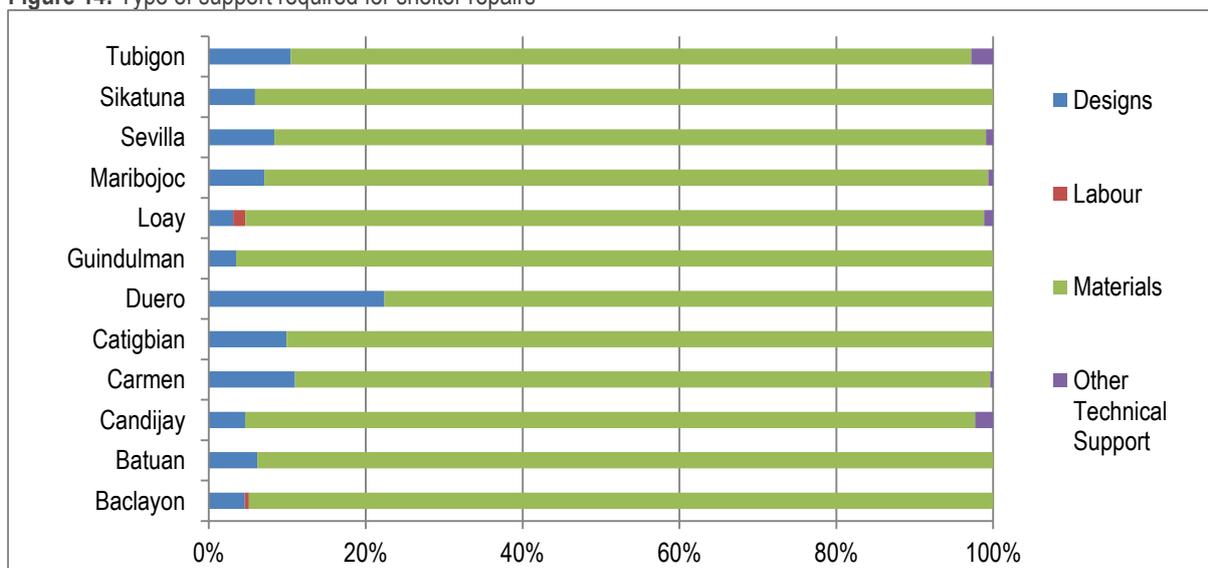
The vast majority of households (86%) whose shelters sustained partial, major, or total damage during the earthquake reported that they had not started any repairs or rehabilitation at the time of assessment. With regards to the capacity for self-recovery, at the time of the assessment only a very small proportion of households had been able to complete repairs (3%), were carrying out repairs using their own resources (5%) or repairing their houses with external support (4%).

Figure 13: Status of shelter rehabilitation per municipality



For households planning to repair their houses, the majority (56%) reported that they needed designs. Additionally, technical support ranked second (32%) in terms of support required for shelter repairs.

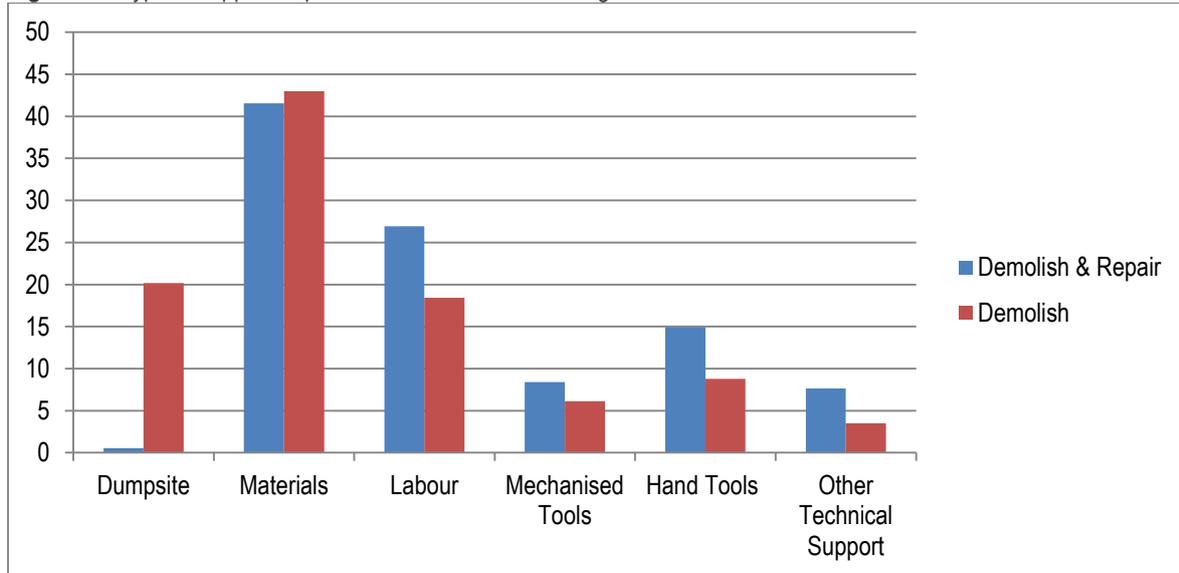
Figure 14: Type of support required for shelter repairs



**For households planning to demolish their destroyed shelter then rebuild in the same location, a majority of support is required in the form of materials (42%) and labour (27%).**

The support requirements related to materials clearly highlights the need for mass distributions of shelter inputs to affected households. Similarly, the need for labour presents an opportunity for large scale cash for work programmes to meet needs. In regards to support for shelter repairs and construction, particular attention should be given to the specific needs of vulnerable households, in particular targeted support with labour may be required for women single-heads of households as they may resort to selling a portion of the shelter inputs they receive to cover the cost of contracted labour for the repairs or construction of their house.

**Figure 15:** Type of support required for demolition / rebuilding



## 2.2. CROSS-CUTTING FINDINGS

This sub-section presents the shelter assessment findings which cut across other sectors of humanitarian assistance, notably in regards to

- Displaced households in evacuation centres (Camp Coordination and Camp management – CCCM);
- Tenure security and access to land (Protection / Housing Land and Property – HLP);
- Access to sanitation facilities and water (Water Sanitation and Hygiene - WASH); and
- Livelihoods and income sources (Early Recovery).

These findings will be proactively shared with others clusters to identify possible joint strategy for addressing the needs and response gaps outlined below.

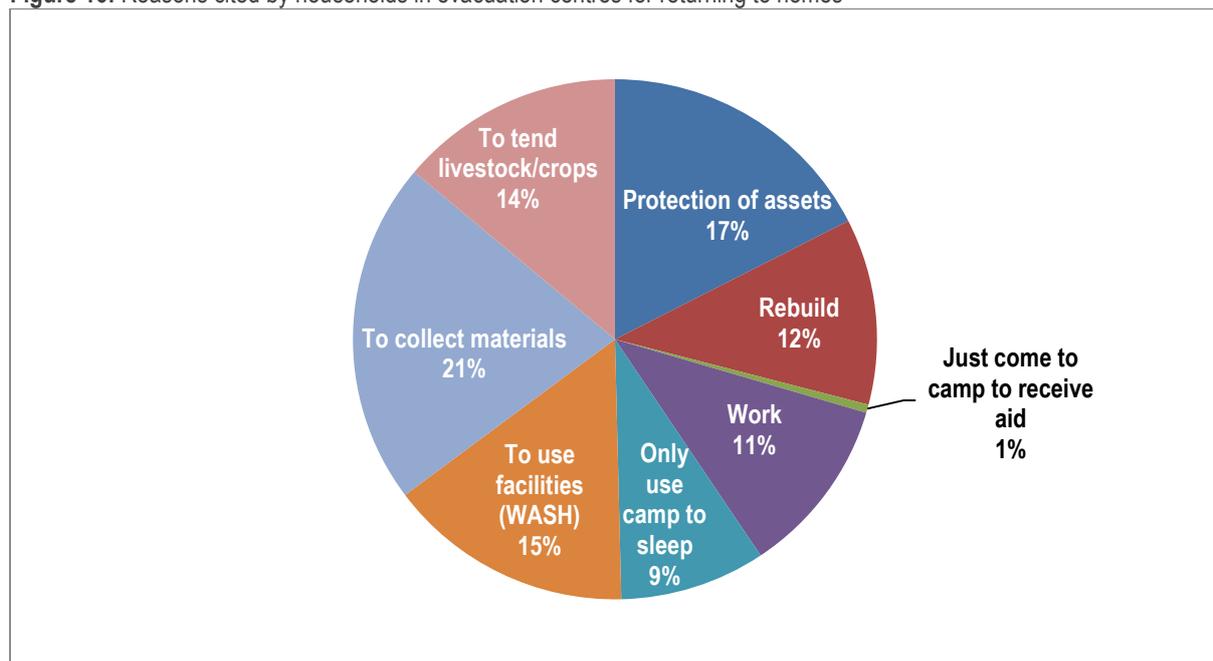
### 2.2.1. DISPLACED HOUSEHOLDS IN EVACUATION CENTRES

**Overall, there were few differences in responses between formal and informal Evacuation Centres (EC).** Additionally, the line between formal and informal centres was much less clear on the ground than in the government dataset. One case had one formal and one informal centre immediately next to each other, causing confusion over where one centre ended and another began, as well as who belonged to which centre. One notable difference between informal and formal centres was the size. Formal evacuation centres were significantly larger both in terms of their peak (114 families) and current (57 families) populations compared to informal evacuation centres (39 and 24 families respectively).

**The reduction in overall size of the centres from peak to current population suggests an understandable trend of families returning home** for a variety of reasons. There was a significant government policy of asking people to return to their homes from evacuation centres around the time of the assessment, which may offer some explanation. High levels of trauma in the immediate aftermath of the earthquake may also explain the difference, with families having moved into evacuation centres to feel safer being surrounded by their community.

**Roughly 41% of families in evacuation centres chose to return home either during the day or night** for a variety of reasons explored in Figure 17 below. This may also help explain the discrepancy between peak and current EC populations, showing household needs near their shelter (such as work or WASH facilities) continued on in spite of shelter damage.

Figure 16: Reasons cited by households in evacuation centres for returning to homes



The vast majority (74%) of IDPs arrived in the ECs in the immediate aftermath of the earthquake, with another 17% arriving within 1-3 days. This shows that households were unlikely to evacuate their homes due to aftershocks in the following days and weeks, if they had not evacuated immediately after the 15th October earthquake. EC demographics showed a slight leaning toward female population, with 56% of current residents being female. Given the prevalence of households returning home to work, protect their assets, or tend livestock, men preferring to sleep near these tasks may explain the difference.

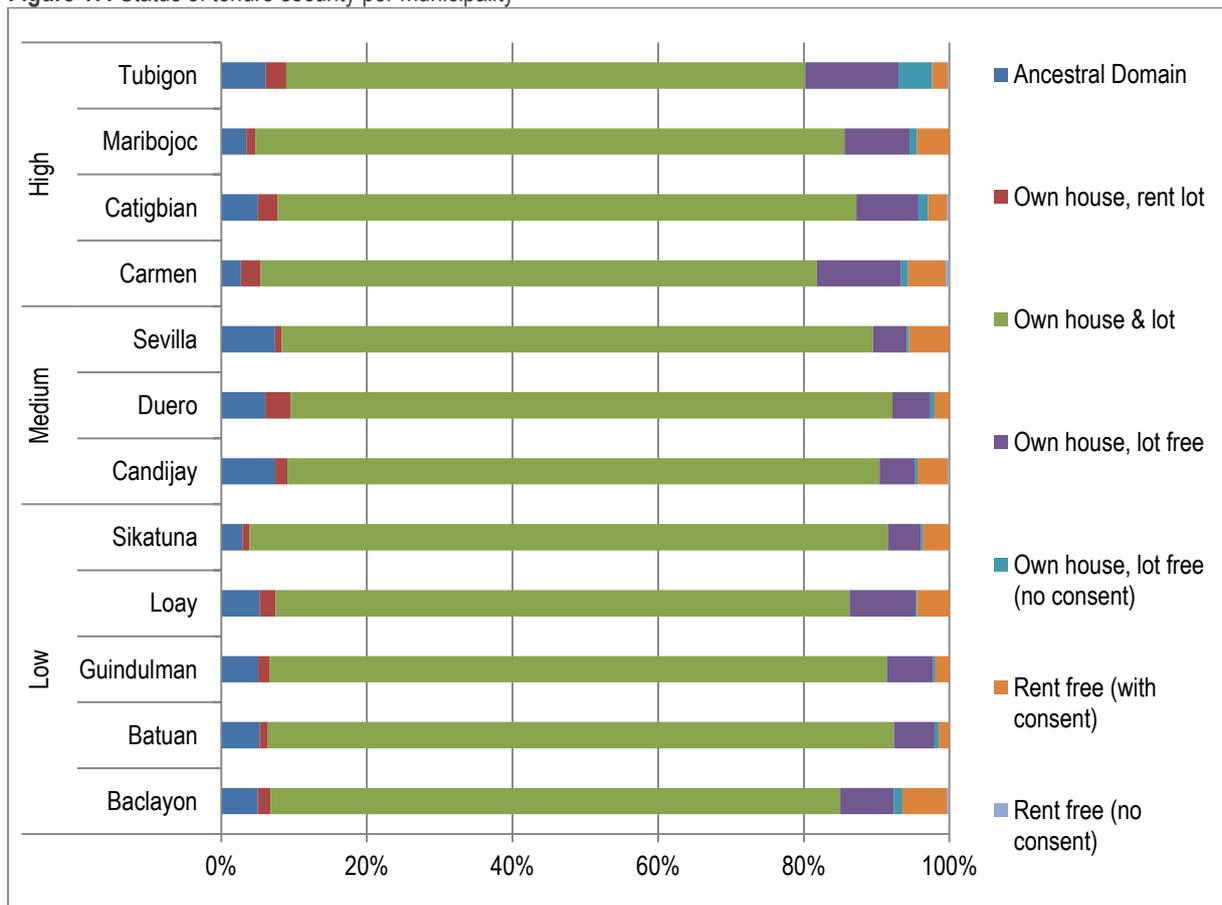
All evacuation centres had population based almost entirely in the same Barangay (89%) or the same municipality (10%), with less than 1% of members originating from outside the municipality. This, combined with household findings of high numbers sleeping outside their homes suggest extremely localized displacement.

Hygiene and sanitation facilities were by in large not gender segregated and the average number of toilets (1.32) and washing facilities (.61) suggest extremely inadequate coverage. That being said, a large number of people are returning home to use their WASH facilities (15%) and there were also qualitative reports of people using facilities in nearby homes that were only partially damaged.

### 2.2.2. TENURE SECURITY AND ACCESS TO LAND

Regarding land tenure status, the vast majority of households (80%) reported that they owned both the house and the property on which it was situated. Only a very small proportion, less than 2%, reported that they were resident on land without the permission of the landowner<sup>4</sup>. The high levels of property ownership in Bohol province will facilitate shelter interventions as there is a lesser risk of conflict between tenants and landowners.

Figure 17: Status of tenure security per municipality



<sup>4</sup> Due to land tenure being a sensitive topic in the Philippines, the validity of property ownership findings should be considered carefully

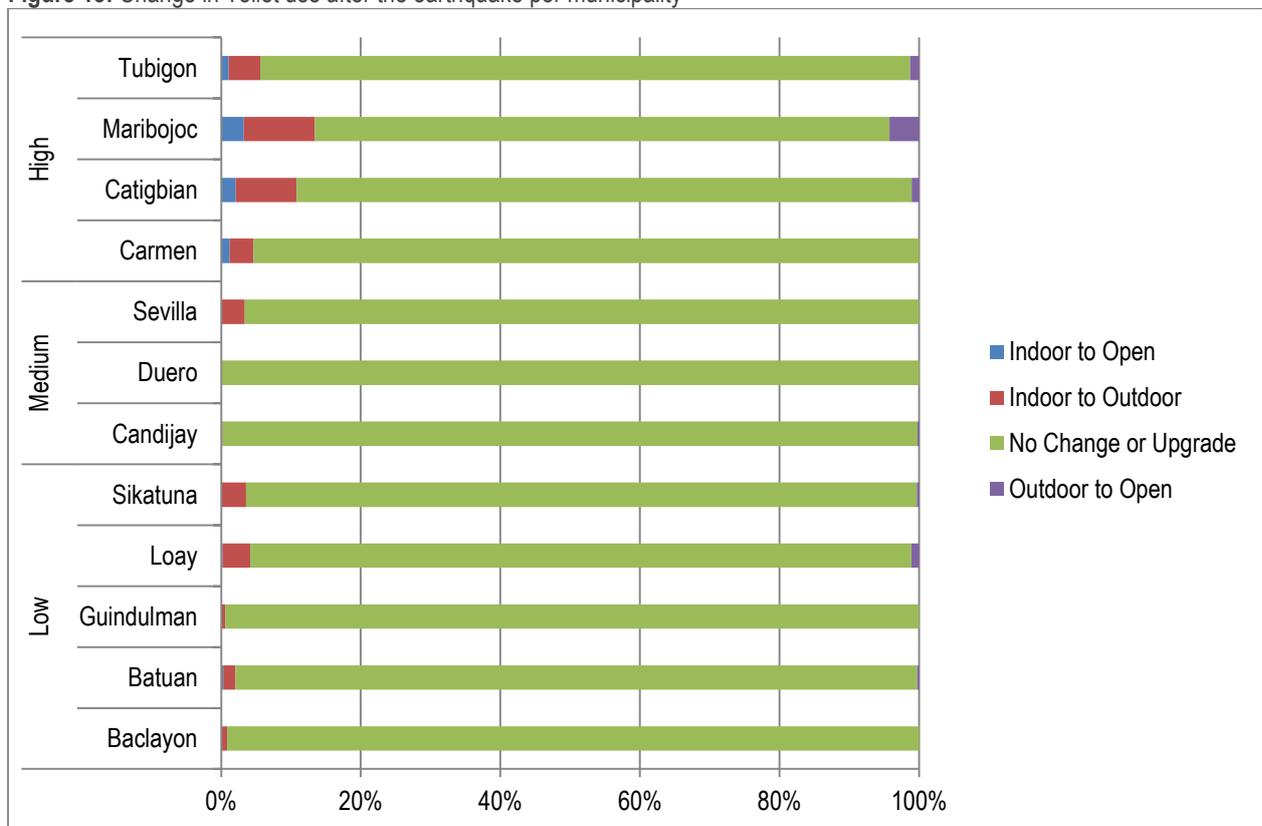
### 2.2.3. ACCESS TO SANITATION FACILITIES AND WATER

**Overall, toilet usage remained largely unchanged for most households**, with 95% of households across all municipalities reporting no change in access to toilet facilities (i.e. they used outdoor facilities both before and after). Only 4% households reported changing from indoor to outdoor toilet facilities. The majority of households changing from indoor to outdoor toilet facilities were identified in the high-priority municipalities.

Almost all households reporting a change from outdoor to open defecation live in the high-priority municipalities of Maribojoc (4%), Catigbian (1%), Carmen (1%), Tubigon (1%). Similarly the highest proportion of households changing from indoor to outdoor toilet facilities were identified in the high-priority municipalities of Maribojoc (10%), Catigbian (9%), Tubigon (5%) and in the low-priority municipality of Loay (4%).

Community level hygiene promotion activities should be considered in municipalities where there has been a decrease in sanitary practises.

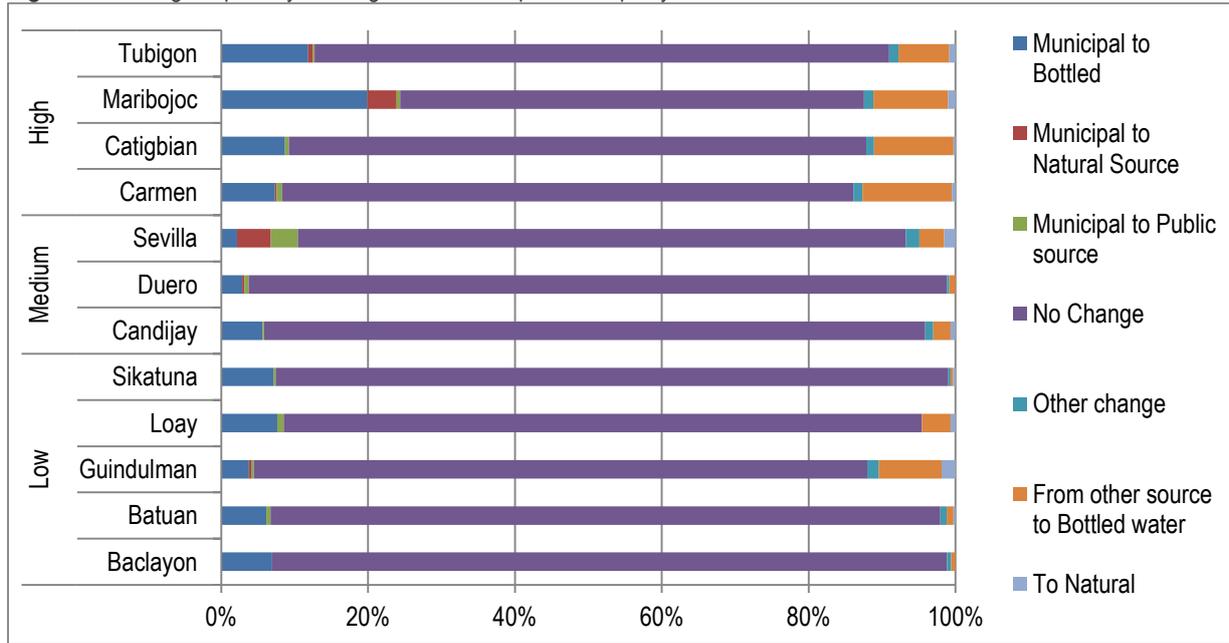
Figure 18: Change in Toilet use after the earthquake per municipality



The earthquake caused a high level of damage to private and communal water sources; pipelines, pumping stations and the electricity supply. This resulted in difficulties for affected populations to access safe drinking water. **There was a significant shift away from municipal water sources, even in medium and low priority areas, suggesting the need for further investigation into the status of municipal water systems.**

There is a strong correlation between the impact of the earthquake on access to water and the priority level of the municipalities. All four high-priority category municipalities of Maribojoc (59%), Catigbian (39%), Carmen (37%) and Tubigon (36%) were the most affected in regards to the number of households reporting a change from their usual source of water. **These four high-priority municipalities concentrate the highest proportion of households who are now depending on bottled water.**

Figure 19: Change in primary drinking water source per municipality

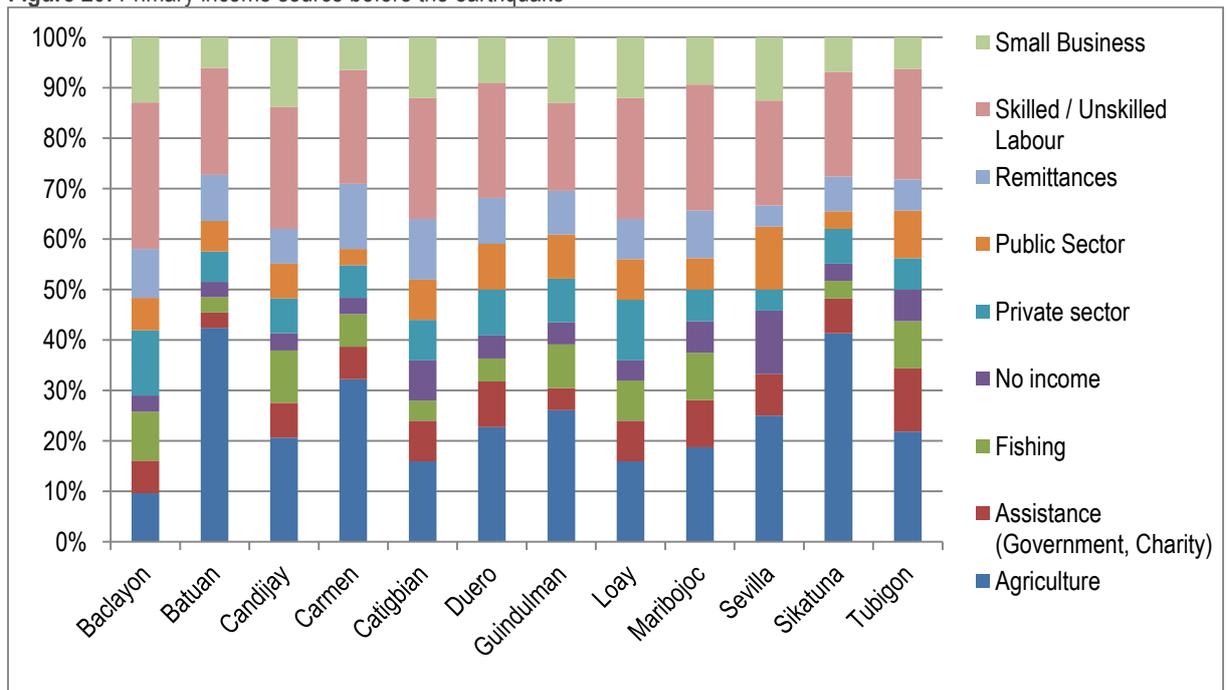


### 2.2.4. LIVELIHOODS AND INCOME SOURCES

Across the twelve municipalities, a relatively similar livelihood profile was identified, with the most prevalent form of income generation (27%) being agricultural work as the primary source of income, including 11% of the assessed population who reported working as agricultural labourers for other producers.

A bit less than a third (27%) of the assessed population reported owning agricultural land, of whom a vast majority, 88%, reported there was no damage caused by the earthquake on their agricultural land. The municipalities of Batuan and Sikatuna host the highest proportions of households who reported agriculture as their main livelihood activity (including agricultural labourers and activities associated with livestock).

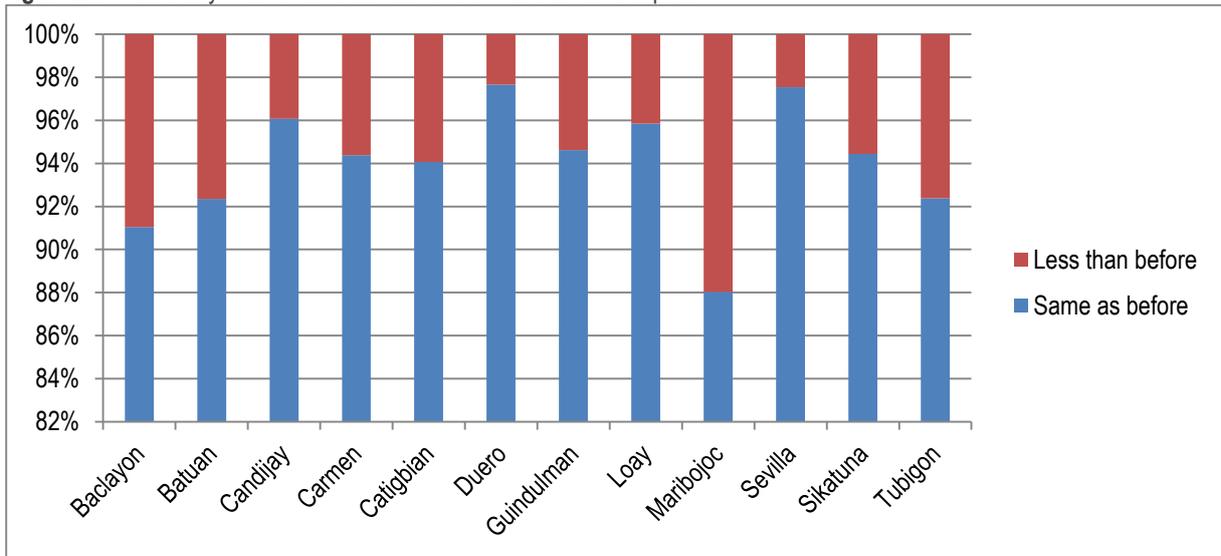
Figure 20: Primary income source before the earthquake



Labour is the second most common type of livelihood amongst assessed households with a similar proportion across all 12 municipalities – between 15% and 36% - of households reporting skilled or unskilled labour as the primary source of subsistence. The third type of income source varies greatly between target municipalities.

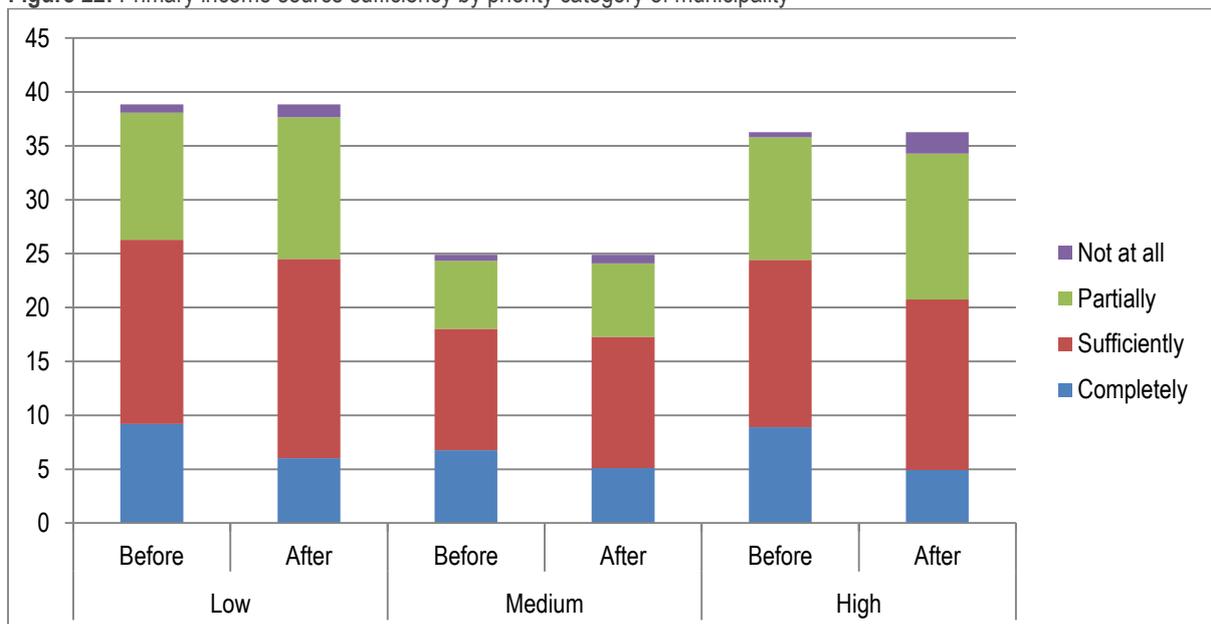
**Overall, the primary source of income of households in the 12 targeted municipalities was not affected, by the earthquake.** The majority of respondents (94%) across assessed municipalities reported that the sufficiency of their income to meet the basic daily needs of their household remained the same after the earthquake. The remaining 6% reported that they were less able to cover their household needs with their income than they were before the earthquake. The highest proportion of households reporting their primary income source was less sufficient now than prior the earthquake was identified in the high priority municipality of Maribojoc (12%).

Figure 21: Sufficiency of household income before and after earthquake



Across the high priority municipalities, the greatest reduction in the ability of the primary income source sufficiency was recorded at 20%, though the change was also significant for both low (18%) and medium (11%) priority categories as well. A map developed to show break-down of income sufficiency related to poverty levels in Bohol Province before the earthquake.

Figure 22: Primary income source sufficiency by priority category of municipality



## 2.3. PRIORITY NEEDS AND ASSISTANCE

### 2.3.1. NEEDS AS PRIORITISED BY AFFECTED HOUSEHOLDS

**Food, financial support and access to water were reported as the top three priority needs by affected households.** Combined with findings on low need for emergency shelter support and higher need for permanent housing, the high prioritisation of financial support underline the **importance of integrating a strong focus on early and longer-term recovery in the ongoing response provided across all municipalities.** This approach should build upon pre-earthquake development programming targeting poor and vulnerable households.

Table 3: Top 3 priority needs

	1st Priority	2nd Priority	3rd Priority
Emergency shelter	2%	3%	3%
Financial	18%	30%	28%
Food	66%	17%	12%
Health access	0%	2%	4%
Household items	3%	8%	6%
Hygiene items	0%	1%	1%
Livelihoods	3%	7%	13%
Medicine	1%	3%	11%
Permanent housing	5%	4%	9%
Toilets	0%	1%	1%
Water access	2%	24%	11%

Households selected for assessment were asked to rank their top three priority needs. **Overall, two third of the assessed households (66%) ranked food as their first priority need**, while an additional 17% ranked it as second priority need. This is in spite of food being largely the main type of relief assistance delivered to affected households after the earthquake. A map has been developed to show the level of food assistance and the prioritisation level of food support across assessed municipalities.

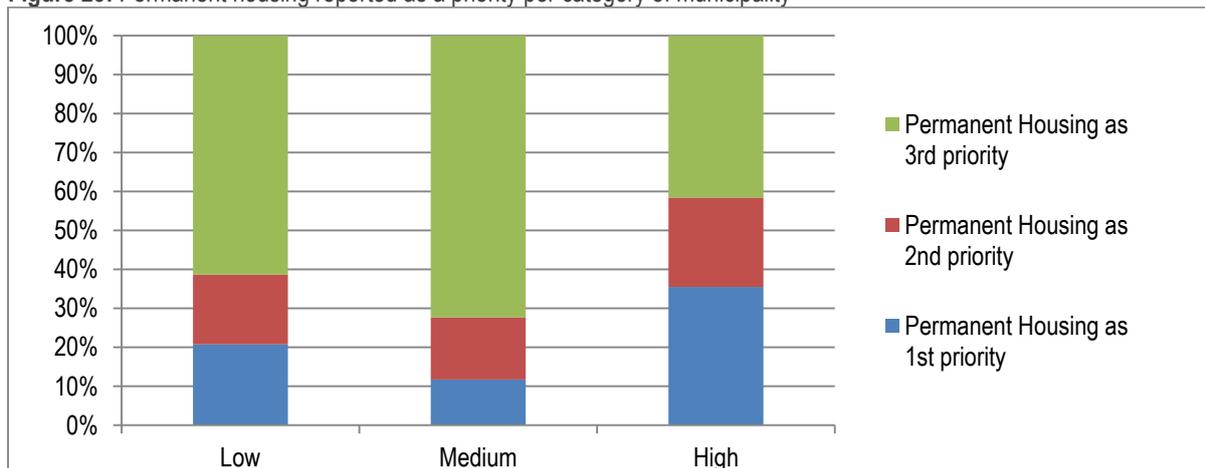
**Financial support is the second first top priority need (18%), and more importantly it is further reported as second (30%) and third (28%) top priority need across all municipalities.** Humanitarian responders should consider a variety of cash-based interventions which should support affected households in their efforts to restore fully their livelihoods. A differentiated approach may be considered for vulnerable households, such as single headed households or households including members with specific needs, which may need targeted specialist support in combination with financial assistance. A map has been developed to show the level of food assistance and the prioritisation level food support across assessed municipalities.

**24% households reported access to water as their second top priority.** Among assessed municipalities, access to water was reported as the top priority need (combined first/second/third ranking) by affected households living in Baclayon and Sevilla. A map has been developed to show how access to water was prioritised across assessed municipalities. At the time of the assessment, water and sanitation assistance included several water treatment units and water trucking but has not been sufficient to cover the needs of affected households. Households resorted to hand pumps and springs to get water which was likely to be contaminated and most of them did not have means to safely store collected water.

Needs in terms of emergency shelter do not emerge as a top priority among assessed population, instead a higher proportion of respondents reported a need to access permanent housing, in particular in high priority municipalities. Within the high priority municipalities, the households with severely damaged or destroyed shelters living in Maribojoc and Tubigan indicated permanent housing as their first top priority need.

These findings point shelter actors towards a relief shelter response which should aim to address longer-term recovery needs. A map has been developed to show the levels of shelter damage and the prioritisation of permanent housing across all assessed municipalities.

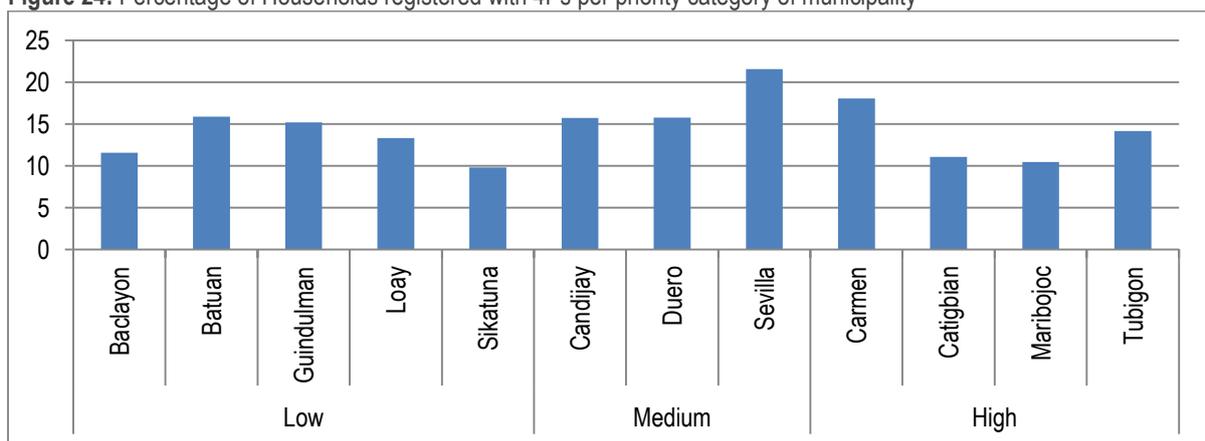
Figure 23: Permanent housing reported as a priority per category of municipality



### 2.3.2. ASSISTANCE RECEIVED BY AFFECTED HOUSEHOLDS

The Government of the Philippines runs through DSWD the *Pantawid Pamilyang Pilipino Program (4Ps)*, a conditional cash transfer (CCT) initiative which aims to eradicate extreme poverty through social assistance to the poorest households in the Philippines. Initiated in 2008, 4Ps is now being implemented in all 1,627 cities and municipalities in 79 provinces in all 17 Regions. As of October 2013, official report indicated that 805,672 households (20.5% of all registered households) are living in the Visayas island group.<sup>5</sup>

Figure 24: Percentage of Households registered with 4Ps per priority category of municipality

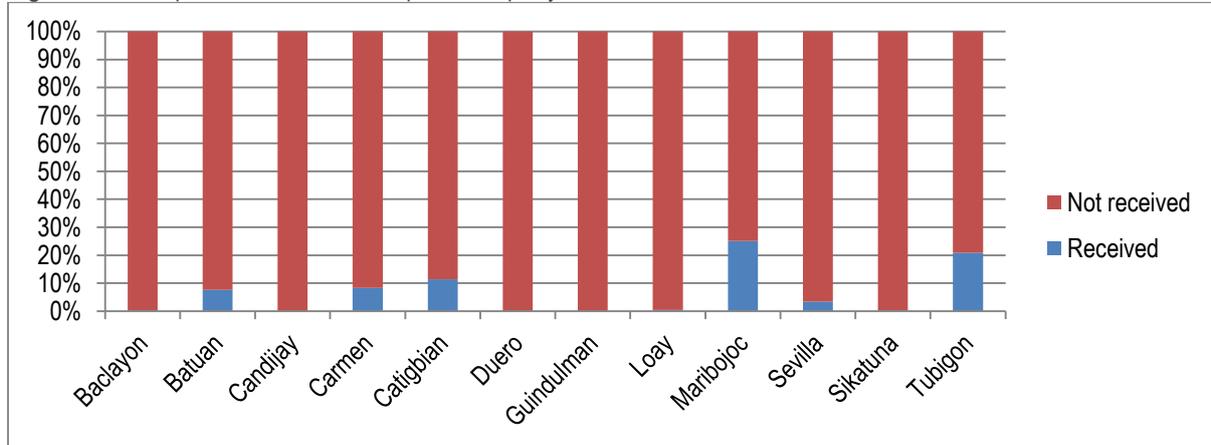


Overall 12% of the population across the twelve municipalities were registered in the 4Ps prior to the earthquake. Sevilla has the highest instance of 4Ps registration with 22% of its population receiving this type of government assistance, followed by Carmen 18%. Nonetheless, there is no significant discrepancy in regards to level of 4Ps' registrations across the twelve municipalities.

<sup>5</sup> DSWD – Program Coverage Update as of October 2013 released 12<sup>th</sup> November available at: <http://pantawid.dswd.gov.ph/> (accessed 23.11.2013)

Across all municipalities, only 19% of households with severely damaged or destroyed shelters had received shelter assistance at the time of the assessment, while 7% of the total assessed population has received shelter assistance. Households with severely damaged or totally destroyed shelters living in the four municipalities categorised as high priority have received the most shelter assistance in the following order: Maribojoc (32%), Tubigon (31%), Catigbian (14%) and Carmen (11%).

Figure 25: Receipt of shelter assistance per municipality

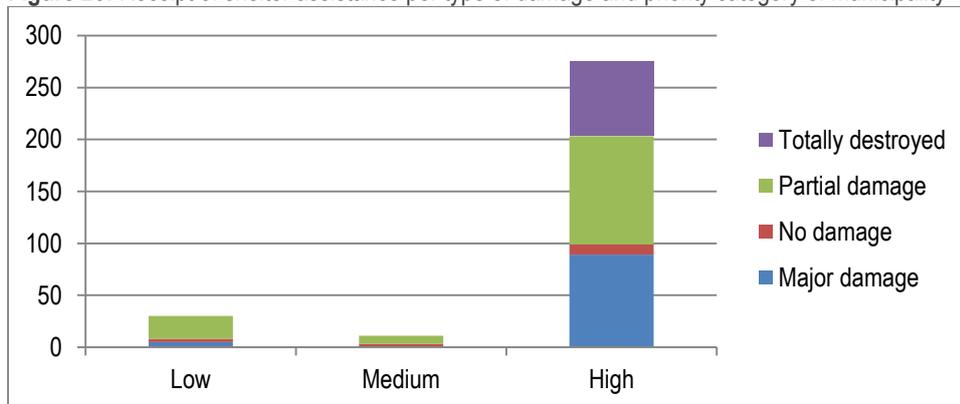


With the exception of Sevilla municipality, where households with severely damaged or destroyed shelters have received some relief shelter assistance, households in a similar situation living in the other three municipalities within the medium priority category (Duero, Guindulman, Candijay) reported receiving no relief shelter assistance at all. A map has been developed to show the proportion of households who reported having received no shelter assistance across assessed municipalities.

Within the low priority group of municipalities, Batuan stands out with a similar proportion than in Carmen (high priority category) of households (8%) reporting receipt of relief shelter assistance whereas households in the other three low-priority municipalities (Baclayon, Loay, Sikatuna) received much less of this assistance, though they face similar situations in terms of shelter damage and destruction.

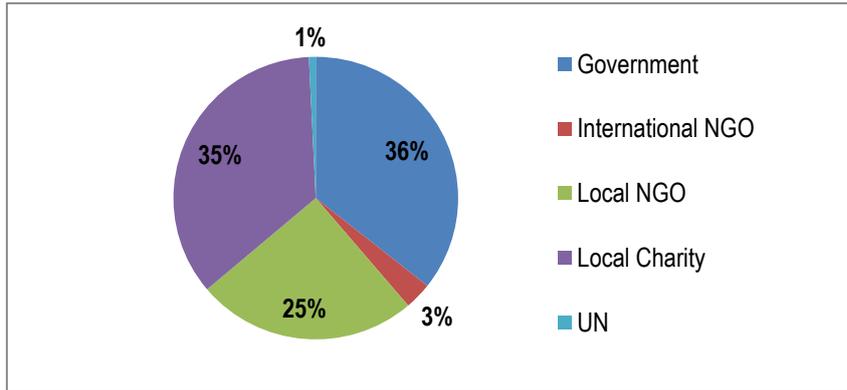
Overall there is no direct correlation between the priority category of each municipality and the level of relief shelter assistance delivered to households with severely damaged or destroyed shelters. There is a critical need to ensure affected areas and households are served proportionally by the shelter response, applying a needs-based prioritization approach.

Figure 26: Receipt of shelter assistance per type of damage and priority category of municipality



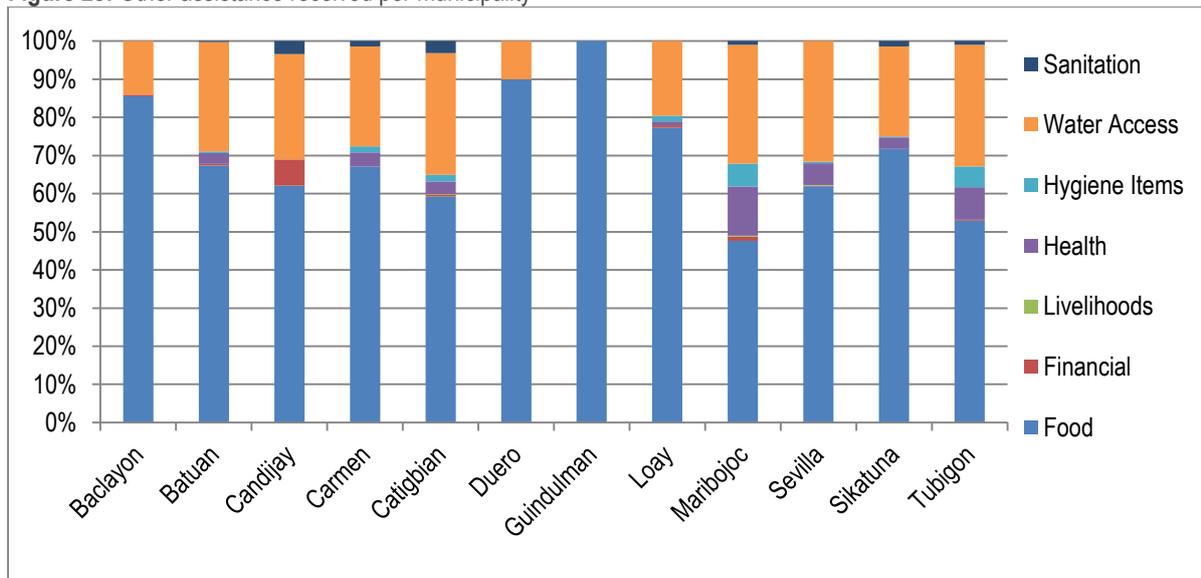
Emergency shelter assistance was first and foremost delivered by national and local stakeholders making up 96% of the support received by affected households. Among national/local responders, the government delivered 36% of the relief shelter assistance and all the rest was provided by local charity groups (35%) and local non-governmental organisations (25%). At the time of the assessment, very little shelter assistance had been delivered by international actors.

Figure 27: Origin of the shelter assistance received



In spite of the low proportion of affected households receiving emergency shelter assistance, 59% reported that they had received other types of relief support. All households who reported receipt of relief aid had received food at the time of assessment, due to the blanket food distributions carried out by DSWD in the weeks following the earthquake. **Food counted for at least half of the assistance received** by respondents, and in the ‘medium priority’ municipality of Guindulman, food was the only type of relief assistance received by the affected population. In addition to food, a high proportion of households reported receiving assistance to access water. Affected households in Guindulman did not receive any support at all in regards to water.

Figure 28: Other assistance received per municipality



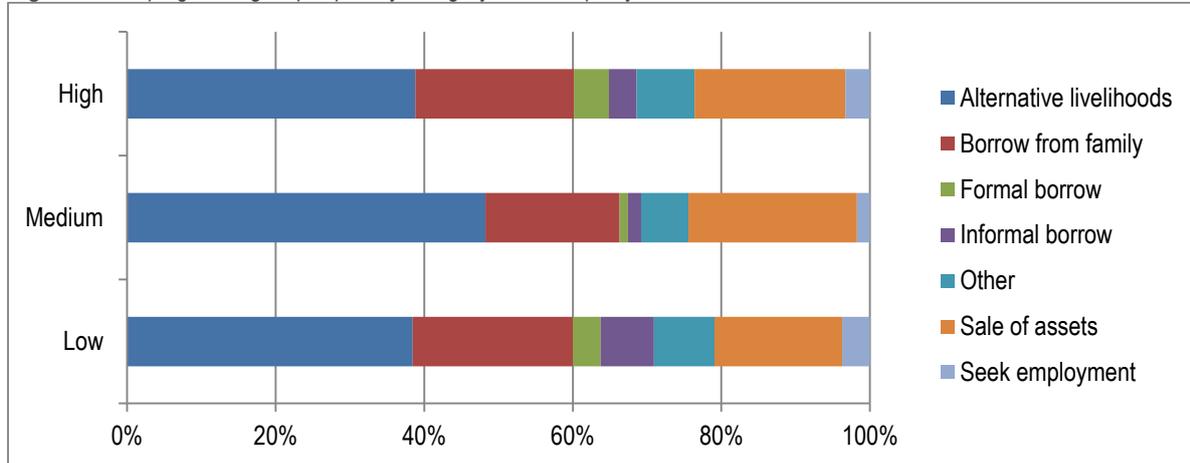
Overall, populations assessed in target municipalities reported using similar coping strategies, primarily by getting engaged in alternative livelihoods with the highest proportion of households (48%) using this strategy identified within the medium priority municipalities as indicated in the figure below.

Two other coping strategies of affected households are borrowing from relatives and the sale of assets. Across the three priority categories of municipalities, between 18% and 22% of affected households are borrowing money to relatives and through their immediate relationship network. Family ties and community solidarity have proven very strong at times of emergencies in the Philippines, and this is confirmed by the timely support provided to affected populations by local groups and charities, as described above in the section of the assistance delivered in assessed municipalities in the aftermath of the earthquake.

Across the three between 17% and 23% of the assessed population is resorting to the sale of assets, which may be considered as a negative coping method as it could undermine the medium/longer term capacity of households to recover fully from the impact of the disaster.

In low priority municipalities, where the highest levels of partial shelter damage was identified, a greater proportion of the affected population (11%) than in the other two priority categories is coping by borrowing money through formal and informal mechanism. Put together, **borrowing money from family and through formal or informal mechanisms is reported by up to a third (33%) of affected households in low-priority municipalities as their coping strategy**, and 30% in high-priority municipalities.

Figure 29: Coping strategies per priority category of municipality



These findings confirm that **financial support is a critical priority need, notably in low priority municipalities** where housing stocks sustained the highest level of partial damage and where households are planning to carry out repairs but are lacking means to do so. Targeted assistance should be provided to vulnerable households, such as female single-headed households, who may need to contract labour to carry out repairs of their shelters.

**The different coping strategies of affected households need to be further explored in order to inform the shelter response and mitigate possible risks of shelter assistance being diverted from its initial purpose** notably by households selling shelter items to access other relief items and services.

## ANNEXES [DISTRIBUTED SEPARATELY]

- Household assessment questionnaire
- Key Informant Interview questionnaire
- Focus Group Discussion questionnaire
- Guide on shelter damage categories for enumerators
- Maps