RAPID SHELTER ASSESSMENT AFTER TROPICAL STORM SENDONG IN REGION X, PHILIPPINES

SHELTER CLUSTER – INITIAL REPORT

REACH

Is a program of

IMPACT Initiatives

In partnership with

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EUROPEAN COMMISSION
Humanitarian Aid

Tropical Storm Sendong 2011
ShelterCluster.org
Coordinating Humanitarian Shelter

XU ENGINEERING RESOURCE CENTER

MORMON HELPING HANDS
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

CRS CATHOLIC RELIEF SERVICES

ALL HANDS VOLUNTEERS

XAVIER UNIVERSITY 1933 ATENEO DE CAGAYAN

IOM • OIM

UN HABITAT

IMPACT *Initiatives* & REACH

REACH was born in 2010 as a joint initiative of two INGOs (IMPACT and ACTED) and one UN program (UNOSAT). Based in Geneva, REACH operates through global advocacy and country-level deployments.

REACH's **purpose** is to promote and facilitate the development of information products that enhance the humanitarian community's decision making and planning capacity.

REACH's **overall objective** is to enhance the effectiveness of planning and coordination by aid actors in countries that are in crisis or at-risk of crisis.

REACH's **specific objective** is to contribute to filling information gaps before, during and in the aftermath of a crisis. This is achieved by promoting and facilitating the implementation of best practices in the collection, processing and dissemination of data to inform aid delivery.

Training of 54 enumerators in Cagayan de Oro at Xavier University Gymnasium conducted by an ACTED staff member. Volunteers would go on to undertake simulations and field trials to practice technical assessments.

EUROPEAN COMMISSION
Humanitarian Aid

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REACH AROUND THE WORLD

In 2010 and 2011 REACH focused most of its attention on country level interventions in Kyrgyzstan and Libya. Leveraging on the success of these country-deployments, since 2011 REACH has promoted global partnerships with clusters and other inter-cluster initiatives. In turn, this has laid the foundations for the planned set up of an advocacy platform and a resource centre in 2012.

REACH in Kyrgyzstan

In June 2010 REACH teams were deployed to Kyrgyzstan to support the humanitarian response that followed ethnic clashes in the South of the country. In the course of the humanitarian response REACH produced over 80 humanitarian maps, as well as facilitating interagency assessments and related databases and interactive web-maps for the shelter, protection and community restoration clusters. These played an important role in interagency planning and coordination, as well as supporting the drafting of the revised flash-appeal for the crisis.

Following the end of the humanitarian phase, REACH has continued its work in Kyrgyzstan in order to contribute towards informing aid action for the reconstruction, recovery and stabilization of the region. Among the activities conducted by REACH are a socio-economic assessment and mapping exercise in the provinces of Osh, Jalalabad and Batken. These resulted in a widely disseminated reference report and interactive web-map of the region, combining macro- and micro-level analyses of the history as well as the potential sources and locations of volatility in the south of Kyrgyzstan.

REACH in Libya

REACH was deployed in Libya in May 2011 to help filling such information gaps among humanitarian actors through the facilitation of interagency assessments and provision of mapping services. In partnership with a number of clusters, REACH has produced humanitarian maps on conflict affected areas which have been widely used by aid agencies and aid coordination structures. To facilitate dissemination of key information REACH has set up since May 2011 dedicated information and mapping centers in Benghazi and Misrata as well as, more recently, in Tripoli.

In parallel to supporting humanitarian action, REACH has promoted the availability of data to inform reconstruction efforts. In partnership with the shelter cluster, REACH has engaged in an assessment of all shelters damaged by conflict in Libya, the findings of which are to be highlighted in a dedicated report and interactive web-map. In late 2011

REACH and the IFRC-led Global Shelter Cluster

In 2011 REACH formalised a partnership with the IFRC-led 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 aftermath of future 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.

REACH's partnership with the GSC is directed by a dedicated Steering Committee including representatives from ACTED, IFRC (as GSC co-lead), IMPACT, the European Commission's Joint Research Centre and UNOSAT.

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Figures and Tables

Acronyms

3W	Who What Where
CCCM	Camp Coordination and Camp Management
CRS	Catholic Relief Services
DSWD	Department of Social Welfare and Development
ECHO:	European Commission Humanitarian Office
ERC	Early Recovery Cluster
FGDs	Focus Group Discussions
GIS	Geographic information systems
HLP	Housing Land and Property
IFRC	International Federation of the Red Cross
IOM	International Organization for Migration
KKKP	(Xavier University) Kristiyanong Kabataan sa Pilipinas
LDS	Church of Latter Day Saints
MIRA	Multi-cluster Initial Rapid Assessment
NGO	Non-governmental organization
NHA	National Housing Authority
SEP	Socio-Economic Profile
UNHCR	United Nations High Commissioner for Refugees
UNOCHA	United Nations Office of Coordination of Humanitarian Affairs
UNOSAT	United Nation's Operational Satellite Applications Program
WASH	Water Sanitation and Hygiene Promotion
XU	Xavier University
XU-ERC	Xavier University Engineering Resource Centre

A house partially damaged by a falling tree in Bayug Island Iligan where 2,500 people are displaced.

Geographic Classifications

English Name Used in Report	Meaning
Region	Highest form of governance below the national level
Province	Sub division of a region where many government agencies reside
Municipality	A collection of Barangays that comprise a broader 'city'
Barangay	An area formed of 10,000 voters, lowest administrative boundary
Sitio / Purok	Neighborhood or area that is informal and not classified for administrative purposes

1. Executive Summary

1.1.Context of Topcial Storm Sendong

According to the NDRRMC, Tropical Storm Sendong (a.k.a. Topic Storm Washi) entered the Philippine Area of Responsibility as a tropical depression on 15 December 2011 and shortly intensified into a tropical storm. As it crossed the Philippines, the storm affected seven regions: IV-B (MIMAROPA), VII (Central Visayas), IX (Zamboanga Peninsula), X (Northern Mindanao), XI (Davao), XIII (Caraga) and ARMM (Autonomous Region in Muslim Mindanao). Region X includes the most heavily affected areas of Cagayan de Oro City and Iligan City.

As of 24 January 2012, the Department of Social Welfare and Development (DSWD) estimates that the total number of affected persons from Sendong in Region X is 384,857 people or 69,755 households. Specifically, around 284,515 people are displaced – with capacity in the evacuation centers being stretched to 21,862 people or 4,738 families. The remaining displaced persons remain in makeshift shelters, with host families, renting of properties, or without access to any shelters. A total of 39,400 households were damaged in Region X, mainly in Cagayan de Oro and Iligan cities (Totally – 11,427 /Partially – 27,973).

1.2.Assessment Methodology

The key objective of the assessment is be to **contribute towards the effective and equitable provision of emergency shelter assistance to the affected population by ensuring that shelter actors have adequate information for designing and funding programs**. Specifically, the assessment will identify the needs of those that are affected to enable contrasting of 3W (who, what where) to identify gaps and opportunities. Moreover, it will provide detailed information to operational staff to assist in designing and implementing emergency shelter and longer term recovery projects.

The shelter assessment includes four components of data collection and analysis. First, there are the secondary data sources of governments and agencies. Second there are the household surveys that serve as the backbone of the assessment. Thirdly, there was focus group discussions in each of the communities visited. And finally, there is the GIS and mapping component of all the aforementioned data collected, collated and analyzed.

This assessment focuses on Region X of the Philippines, the area where the majority of the impact of Sendong was experienced. The process for selecting the communities included reviewing the list of affected municipalities by DSWD in their Disaster Reports (December-January 2012).

Throughout this process, **two municipalities were completely removed due to existing statistics not reflecting the on-ground reality**. Specifically, in Malitbog and El Salvador City municipalities, both administrations noted that there was no shelter damage within their area. The Macasandig Barangay was excluded from home-based surveys, and only evacuation centres and temporary shelters were included. This was because CRS had undertaken an assessment in Macasandig, and as the only implementing agency there it was not required to be reassessed.

Full Sets of Data and Maps from the Project

All of the research's raw data, including databases, reports, web-maps, static maps, government and other secondary data, questionnaires, fact sheets and more can be accessed through the REACH portal of IMPACT Initiative: http://www.reach-initiative.org. All static maps, reports, fact sheets and other articles can be accessed through the Shelter Cluster at https://www.sheltercluster.org/Asia/Philippines/TropicalStormSendong2011/Pages/default.aspx

Security and transportation challenges unfortunately rendered some areas inaccessible to the assessment team, particularly in Iligan City. Mainit, Lanipao, Dulag and Kalingangan barangays were simply inaccessible due to roads being washed out, bridges collapsing, fear of kidnapping, and the like.

1.3.Assessment Results

Demographic and Vulnerabilities

A total of 3,945 households were surveyed as part of this assessment, over 10% of families with houses that had been affected. This represents over 19,000 individuals. The age profile of respondents highlights the relative young nature of the Philippines in general, but also the number of children that have directly been affected. This includes 11% being children under the age of five and 3% being infants. Moreover, the vast majority of those affected are working-age people, highlighting the intricate relationship of livelihoods needs as well as shelter needs. **A large number of those affected are considered vulnerable households**.

It is worthwhile noting that this assessment has a larger proportion of those in evacuation centres and temporary shelters (approximately 27% of respondents). This means that the sample has particularly focused on vulnerable households. Firstly, they are most likely to have had their houses completely destroyed or at least unlivable even if it may be possible to rehabilitate. **Moreover, those in temporary shelter arrangement, they are less likely to have alternative coping mechanisms such as being able to rent, live with relatives, etc.** It is these households that have the greatest need as well as being less capable of self-managed support.

Socio-Economic Profile

The primary livelihoods of those that have been affected and surveyed is agriculture and skilled / unskilled labour. Moreover 13% of all respondents claim to have no income. Of the households surveyed, 77% claim to be living below the poverty threshold. The extreme levels of poverty of those affected are contributed to by the fact that many households have lost income as a result of the displacement. **Specifically, 64% of households who reported an income stated that their income had declined by over 50%, while only 11% reported that their income remained unaffected.**

The above information is supported and emphasized by **the significant number of affected households that stated they are not completely able to meet the family's basic needs**. While before Sendong 554 households noted that they could only partially cover basic family needs, this number has almost tripled to 1430 after Sendong, reflected by the fact that incomes have been severely affected.

Technical assessment

It is clear that as of 20th of January there are approximately 4,700 households in evacuation centres or about 12% of those with affected houses. While reports have indicated that many families have opted to live with family and friends, the findings of this assessment is that **there is a significant portion that are living in temporary shelters or damaged houses on their own property**. This is often due to informal property rights resulting in families unwilling to leave their land for fear of not being able to return, or because they have no alternative coping mechanism.

Sendong created significant floods and mud flows in particularly urban areas of Cagayan de Oro and Iligan, as well as impacting on remote and rural communities – including those in higher altitudes that were more likely to be affected by flash floods or landslides. **The most significant impacts were felt by those that did not have adequate housing, such as wooden shacks (57%) and wooden shacks typically with concrete foundations / bottom floors (29%).**

This assessment has identified that most of the partially damaged houses have relatively minor impacts, requiring smaller levels of support. This typically includes cleaning of mud damage, small repairs of flooring and roofing (where the water has been extremely high), and rehabilitation of fixtures such as doors and windows. **Only 13% of partially damaged houses were assessed as requiring major rehabilitation**, such as walls, floors, roofs, and potentially support structures. There is also significant variation of the type of damage based on the type of house.

One of the defining aspects of the Sendong shelter challenge is the Government-declared No Build Zones[1]. Government calculations state that there are approximately 2700 households in Cagayan de Oro within the No Build Zones. The assessment asked respondents whether their houses are located in the No Build Zone. Unsurprisingly, a very low number of respondents in Iligan stated that their houses were in No Build Zones as they have not been clearly demarcated nor have households been made aware of their locations[2].

The **presence and scale of debris** was included in the assessment on the behest of those involved in the cleaning, as well as the Early Recovery Cluster to highlight the nature and location of cash for work opportunities. The main type of debris that is creating a significant challenge for the recovery and relief effort is mud, 'other' debris typically included corpses that have not been able to be located among other debris, causing significant concerns for nearby families.

Finally, over half of those affected currently do not have access to electricity, largely due to damage to household networks but also because of damage to public networks.

Support Need and Provided

The level of support requested was particularly high (over 95%), unsurprising considering the number of households in evacuation centres and the fact that 77% of those surveyed are at or below the poverty line. **The type of support requested by households provides a greater reflection of the immediate needs,** such as food as well as water. In addition, health, sanitation and hygiene kits were also requested and are areas where significant provisions have been provided by the relief efforts. Moreover, livelihood support seems underwhelming relative to the level of requests placed by households.

With regards to shelter needs, the financial requests were considerable as a result of household income having been highly affected (64%). This is coupled however with the need for materials for their houses. Those that noted 'other' support required were typically focused on land for relocation, a significant concern for those in No Build Zones.

Conclusion and Recommendations

1. The incidence of poverty not just in the region but in the directly affected areas is considerably high - 77% of those affected. This has been exacerbated by Sendong, with up to 64% of households' income being highly affected. Therefore any effective program needs to target the potential income-generating activities of beneficiaries.
2. Debris removal and clearing is of utmost importance to ensure access to houses and communities, while also preventing public health issues from worsening – such as the current Leptosorosis outbreak. Solid waste management plans are recommended where necessary. This can incorporate a livelihood component through cash or food for work programs, providing livelihood opportunities for the most vulnerable within communities.

[1] These have been referred to incorrectly in some publications as No Go Zones.
[2] At the time of writing, a protest in Iligan City was underway in relation to demands to rebuild houses on their existing sites. This has culminated in households setting up temporary shelters on a bridge into the city with signs.

3. A common understanding of the definition of damage to houses, and coordinated approaches to designing rehabilitation and reconstruction packages to ensure equitable distribution of support.
4. Those in temporary shelters and evacuation centres ought to be prioritised for relocation, reconstruction and rehabilitation projects. This is for two reasons. Firstly, they are the more vulnerable and less capable of those affected. And secondly, the sites are typically schools which should return to their normal operations as soon as possible for the sake of the children.
5. The No Build Zones need to be clearly demarcated and communicated to those affected. Moreover, any program that addresses reconstruction and rehabilitation ought to adhere to these boundaries in an effort to improve disaster risk reduction and resilience to future water-related events.
6. Programs ought to prioritise households that are below the poverty line with rehabilitation needs, and all totally destroyed houses. This should happen in a timely manner as individuals are willing to work and build their own homes (if possible), though lack the materials and financial resources to implement their own reconstruction and rehabilitation projects.
7. Reconstruction and rehabilitation works should as best as possible incoroporate disaster risk reduction components. This may involve 'building back better' and including concrete foundations; supporting early warning mechanisms to reduce the likelihood of significant impact from floods or other disasters in the future (baring in mind that origin of the disaster for many areas were in faraway places upstream); and include community mobilization within the construction programs for sustainable outcomes.
8. Coordination across Clusters is essential to a holistic program that benefits the household and the community, including food, livelihood, shelter and other support. This should be coordinated at the overall level as well as within regions. It is worthwhile noting that by and large this seems to be well underway.
9. Further assessments in currently inaccessible areas needs to be undertaken to ensure a comprehensive set of information is used for planning and prioritisation.
10. Disaggregation of existing data at the Barangay level is necessary to provide greater guidance to those implementing programs – be it through formal reports or informally through data-mining of the extensive data sets generated through this assessment.

2. Context of Tropical Storm Sendong

According to the NDRRMC, Tropical Storm Sendong (a.k.a. Topic Storm Washi) entered the Philippine Area of Responsibility as a tropical depression on 15 December 2011 and shortly intensified into a tropical storm. As it crossed the Philippines, the storm affected seven regions: IV-B (MIMAROPA), VII (Central Visayas), IX (Zamboanga Peninsula), X (Northern Mindanao), XI (Davao), XIII (Caraga) and ARMM (Autonomous Region in Muslim Mindanao). Region X includes the most heavily affected areas of Cagayan de Oro City and Iligan City.

The Cagayan, Agus and Mandulog rivers rose rapidly in the early hours of 17 December 2011, with fast flowing muddy waters surging over riverbanks and sweeping away buildings from a swathe of land on either side. The rivers' rapid speed and rise - in some areas rising by 3.3 meters in less than an hour - caused devastation more commonly seen from tsunamis, with entire neighborhoods and villages swept away. The flash floods struck in the early hours of the morning, giving residents little warning and killing many people as they slept. Compacting the physical nature of Sendong, in many areas nobody had seen floods to anywhere near this scale in their entire lives, which are more commonly experienced north of Mindanao on other islands exposed to greater risks of tropical storms.

According to Department of Social Welfare and Development (DSWD), as of 24 January 2012, the totals number of affected persons from Sendong in Region X is 384,857 people or 69,755 households. Specifically, around 284,515 people are displaced – with capacity in the evacuation centers being stretched to 21,862 people or 4,738 families. The remaining displaced persons remain in makeshift shelters, with host families, renting of properties, or without access to any shelters. A total of 39,400 households were damaged in Region X, mainly in Cagayan de Oro and Iligan cities (Totally – 11,427 /Partially – 27,973).

Therefore, the Shelter Cluster has become a priority for international organizations responding to Sendong, with the Government of Philippines (DSWD) playing a particularly active role. The Shelter Cluster was initially led by the International Organization for Migration (IOM), though the International Federation of the Red Cross (IFRC) provided support and became the lead as of 7th of January 2012.

In response to this, IMPACT Initiatives on the 11th of January 2012 was requested by IFRC to provide support in undertaking assessments and providing GIS support to the Shelter Cluster. Specifically, REACH was deployed by IMPACT Initiatives to undertake an assessment of the scale, type and location of shelter damage. The Agency for Technical Cooperation and Development (ACTED) implemented REACH in the field and had an Assessment Manager on the 13th of January 2012 and a GIS / Database Manager on the 17th of January 2012 in Cagayan de Oro. In addition, oversight and support was provided by IMPACT Initiatives in Geneva. Additional capacity and technical support was provided United Nations Office of Satellite Imagery (UNOSAT) within the United Nations Institute of Training and Research (UNITAR).

The purpose of the deployment and this assessment was to provide agencies with information to inform the Flash Appeal, and to better plan and prioritize shelter related programs across Sendong affected areas. Household level surveys were undertaken to verify and provide additional detail (particularly in terms of technical assessments) to information that had been collected through various government agencies and international organizations; focus group discussions were held with communities to understand broader issues; static maps were created based on requests from humanitarian agencies needs to support their programming; and a webmap with interactive functions was developed to enable any interested parties to get a better picture of the scale and location of damage, the relief assistance being provided, and various other baseline social, economic and technical information.

3. Assessment Methodology

This section describes the methodology developed and implemented in undertaking the shelter assessment. The short timelines due to the emergency resulted in there being significant capacity for short periods of time to get the most comprehensive understanding of shelter related issues. However, not all households could be included. It is the belief of the authors that the approach used here provides the greatest level of directive and informational support for key stakeholders, and confirms to best practice methodologies across the range of tools used and the process undertaken.

This section highlights the overall objectives of the research; coordination in planning and implementing the assessment; the general methodology of the assessment including the use of focus groups and household surveys; the coverage of the assessment in terms of households and effected areas; and the scale of the assessment such as the number of household surveys and focus groups undertaken.

3.1. Objectives of the Research

The key objective of the assessment is be to **contribute towards the effective and equitable provision of emergency shelter assistance to the affected population by ensuring that shelter actors have adequate information for designing and funding programs**. Specifically, the assessment will identify the needs of those that are affected to enable contrasting of 3W (who, what where) to identify gaps and opportunities. Moreover, it will provide detailed information to operational staff to assist in designing and implementing emergency shelter and longer term recovery projects. While focusing on shelter needs, this interagency rapid assessment also aims to inform other clusters, particularly where shelter is inter related such as early recovery (ERC), water sanitation and hygiene promotion (WASH), camp coordination and camp management (CCCM) and housing land and property (HLP). Finally, the information contained within this report and throughout the research has and will continue to be used for informing the Flash Appeal coordinated by UNOCHA.

3.2. Coordination with Clusters, Agencies

Throughout the planning and implementation of the shelter assessment, coordination has remained a focus. The author and the Shelter Cluster have contributed directly to the Multi-cluster Initial Rapid Assessment, such as informing the shelter component as well as partaking in the analysis. Furthermore, questions that could not be addressed were incorporated into the shelter assessment where appropriate, such as scale of debris and requirement of cleaning services to assist the ERC.

Shelter cluster members have furthermore been directly engaged through various forums. Agencies have had opportunities to provide feedback and input on the design of household surveys and focus group discussions, input on training / simulations for improved technical assessments, as well as identify areas of interest for the assessment. This includes Department of Social Welfare and Development (DSWD), National Housing Authority (NHA), International Organization for Migration (IOM), UN Habitat, Catholic Relief Services (CRS), All Hands Volunteering, as well as Shelterbox, Plan International, and others.

Local based organizations have also been directly engaged to support the shelter assessment. Xavier University has provided logistics, volunteers and informational support through the Engineering Resource Centre (XU-ERC) and Kristiyanong Kabataan sa Pilipinas (KKKP). The Church of Latter Day Saints (LDS) has provided numerous volunteers to assist with the data collection in addition to logistics support.

Finally, the Government of Philippines and its agencies have provided access to secondary data sources to support the Shelter Cluster broadly as well as the mapping and shelter assessment more directly. This

includes but is not limited to: National Statistical Coordination Board (NSCB), National Economic Development Authority (NEDA), and the aforementioned DSWD and NHA.

Thanks go directly to all the organizations involved in this shelter assessment.

3.3.General Methodology

The shelter assessment includes four components of data collection and analysis. First, there is the secondary data sources of governments and agencies. Second there are the household surveys that serve as the backbone of the assessment. Thirdly, there was focus group discussions in each of the communities visited. And finally, there is the GIS and mapping component of all the aforementioned data collected, collated and analysed.

Secondary data: The project team reviewed the existing shelter related information from Cagayan de Oro and Iligan predominantly. This was collected directly from agencies and organizations, and includes information on shelter damage, environmental / flood related data, social economic context information, and whatever else was available considered of value.

Household surveys: The project team designed a household survey for affected households with the support of Shelter Cluster members. This includes demographic information on the households, technical assessment of the shelters they are currently residing / that have been affected, as well as identification of needs. *See Appendix 1*. The purpose was to generate specific data as to the type of projects required in different areas, to assess the level of vulnerability of households affected, and to be used to inform or support the verification of beneficiary lists for project operations.

Focus group discussions (FGDs): The focus group discussions were designed with support from the Shelter Cluster members. This includes information on how communities have been affected and how support can best be provided or targeted. *See Appendix 2.* The purpose was to generate information from key stakeholders within communities to garner a broader understanding of impacts and community needs. Gender balance of the FGDs has been taken in account during key informants' identification.

GIS and mapping: Multiple scales of mapping are being undertaken to inform the shelter assessment, to use the information from the shelter assessment, as well as to support the Shelter Cluster in large. In partnership with a team of technical experts from UNOSAT, satellite imagery has been used for incorporating into static and web based maps, as well as pre and post satellite imagery for identifying affected households and areas. Static maps have also been created within this report, and have been directly provided to agencies in the field. A web-based interactive map is also being made available for consolidating all data (see www.reach-initiative.org).

3.4.Assessment Area

This assessment focuses on Region X of the Philippines, the area where the majority of the impact of Sendong was experienced. While in Region VII there were up to 7,000 households affected (not necessarily shelters), this remains outside the scope of the coordinating groups as it is a different island with its own mechanisms in place.

The areas selected to be included in this assessment are based on three criteria.

2. Samples from all areas that were affected by Sendong;
3. Communities that are directly being engaged by members of the Shelter Cluster; and
4. Regions that have not been adequately assessed in a detailed manner.

The process for selecting the communities included reviewing the list of affected municipalities by DSWD in their Disaster Reports (December-January 2012). As the lowest level of administration is the Barangay level, it was noted that additional information would be required to identify specific Barangays of CDO and Iligan cities where the majority of the damage and impact of Sendong had occurred. Initially, every single Barangay of CDO and Iligan were included.

As part of the process, at least one day prior to assessments in the communities, members of the assessment team would visit the Barangay Captains within CDO and Iligan, and the Mayor's Office within ten other municipalities that were affected. This was supported directly by a local IFRC staff, as well as volunteers. The questions of the key contacts focused on:

- Most affected areas;
- Communities that have the least amount of support (Sitio / Purok level);
- Are considered to be the most vulnerable; and
- Communities that the administrators believe may require shelter or housing assistance.

Throughout this process, two municipalities were completely removed due to existing statistics not reflecting the on-ground reality. Specifically, in Malitbog and El Salvador City municipalities, both administrations noted that there was no shelter damage within their area. While an assessment team was still sent to Malitbog to confirm this, no assessment team was sent to El Salvador City.

In addition, members of the Shelter Cluster were asked which areas they would like prioritized as part of the assessment. All areas put forward were able to be included. The Macasandig Barangay was excluded from home-based surveys, and only evacuation centres and temporary shelters were included. This was because CRS had undertaken an assessment in Macasandig, and as the only implementing agency there it was not required to be reassessed. Despite this, a large number of surveys due to it being the most affected region within CDO were still undertaken – this was exacerbated by the fact that many residents of Macasandig were staying in evacuation centres, transitional shelters, and home-based shelter arrangements in other Barangays and were therefore indirectly included.

In Iligan City, all evacuation centres were approached for inclusion in the assessment due to the fact that the assessment team could achieve this within one day. However, the evacuation centre at the Upper Hinaplanon Elementary School was not accessible to the assessment team due to an ongoing dispute between the Barangay Captain and DSWD. Information on the inaccessibility for the assessment team as well as relief goods was passed on to appropriate organizations for follow-up, including IOM and United Nations High Commissioner for Refugees (UNHCR).

Security and transportation challenges unfortunately rendered some areas inaccessible to the assessment team, particularly in Iligan City. Mainit, Lanipao, Dulag and Kalingangan were simply inaccessible due to roads being washed out, bridges collapsing, and the like. Alternative methods of transportation were considered – such as a scouting team on motorcycles to see if that would be better than four wheel drives – however, efforts proved futile. Moreover, Panoroganan was considered insecure after advice from UN security agencies and field based staff due to ongoing tensions between Catholic low-land and Muslim hinterland communities. It is worthwhile noting that these Barangays had very limited damage reported from Sendong, and while verifying this data is valuable for future assessments the impact on the value of this assessment is considered minimal.

Generalising Results and Statistical Analysis

A non-random sampling method was used to identify households and communities that were included (see above for how communities were selected). Therefore, it is important to note that the results are not able to accurately be generalised across all affected communities. This was a strategic decision to better support the Shelter Cluster members that are currently planning or implementing in specific areas. Moreover, without a comprehensive beneficiary list available at the time of the rapid shelter assessment, it was not possible to randomly select survey respondents. Therefore, this assessment does not include a statistical analysis. In total, over 10% of affected households were surveyed. This is sufficient for results to be considered indicative – particularly for those in evacuation centres and transitional shelters where a greater sample size was collected – and for general issues, challenges and opportunities to be identified. Agencies are encouraged to verify all information.

3.5.Training, Logistics and Human Resourcing of Rapid Assessment

The shelter assessment formally began on the 14th of January 2012. Initially, planning and designing was undertaken in a collaborative manner as mentioned above. During this time, the logistics of fleet management and recruitment of enumerators was also undertaken. The use of Shelter Cluster resources was utilized, particularly linking with paid-volunteers to assist in the assessment.

The first training was conducted on the 20th of January 2012 at Cagayan de Oro. A total of 54 paid-volunteers participated in the day long training session. This included the first half of the day going in detail through the household survey and the focus group discussions. A brief training session was also conducted on using GPS enabled cameras, and the requirements of photography for the web based map. The afternoon session included a simulation exercise at an All Hands Volunteers site known as Emily Homes. This included separating the enumerators into three groups and providing hands-on technical training of how to assess houses, as well as practice on conducting the surveys. Teams of three were also formed, and on the 21st of January the first data collection began. This included pairing teams of three (six in total) to attend evacuation centres, ensuring that they can learn from each other and better understand the data collection tool.

On the 23rd of January, and further 52 paid-volunteers were trained in the above manner in Iligan City. However, additionally one team from CDO attended the training to provide tips and lessons as well as to support the group. The simulation exercise was supported by IOM at a site nearby to Villaverde. Again, on the following day data collection began (and again supported by a team from CDO) at evacuation centres.

On the 23rd of January in CDO, training was also provided to encoders at Xavier University. This was able to be provided on an ongoing basis so that surge capacity could be added later to ensure that all encoding would be completed in a timely manner. In total, 20 persons were trained in encoding. A further individual was trained in encoding FGDs, and another individual was trained in cataloguing all photographs.

Moreover, on the 20th of January a further three individuals who had experience in using GPS were trained for data collection to inform the mapping. All three were engineers at XU-ERC, who spent their times visiting resettlement sites and No Build Zones.

Data collection was completed on the 27th of January. Data encoding was completed on the 28th of January.

3.6.Scale of Assessment

The table below shows the areas that were assessed.

Region	Municipality	Barangay	Estimated # of Sub-Districts	# of Surveys	# of FGD
X	CAGAYAN DE ORO CITY	AGUSAN	1	25	X
X	CAGAYAN DE ORO CITY	BAGONG SILANG	1	2	X
X	CAGAYAN DE ORO CITY	BAIKINGON	1	10	X
X	CAGAYAN DE ORO CITY	BALULANG	11	188	X
X	CAGAYAN DE ORO CITY	BARANGAY 1 (POB.)	2	10	X
X	CAGAYAN DE ORO CITY	BARANGAY 10 (POB.)	1	7	X
X	CAGAYAN DE ORO CITY	BARANGAY 13 (POB.)	3	163	X
X	CAGAYAN DE ORO CITY	BARANGAY 15 (POB.)	2	22	X
X	CAGAYAN DE ORO CITY	BARANGAY 17 (POB.)	2	27	X
X	CAGAYAN DE ORO CITY	BARANGAY 6 (POB.)	1	24	X
X	CAGAYAN DE ORO CITY	BARANGAY 7 (POB.)	3	27	X
X	CAGAYAN DE ORO CITY	BARRA	1	15	X
X	CAGAYAN DE ORO CITY	BONBON	4	88	X
X	CAGAYAN DE ORO CITY	BULUA	3	48	X
X	CAGAYAN DE ORO CITY	CANITO-AN	3	48	X
X	CAGAYAN DE ORO CITY	CARMEN	8	510	X
X	CAGAYAN DE ORO CITY	CONSOLACION	7	256	X
X	CAGAYAN DE ORO CITY	CUGMAN	3	58	X
X	CAGAYAN DE ORO CITY	DANSOLIHON	2	17	X
X	CAGAYAN DE ORO CITY	GUSA	3	38	X
X	CAGAYAN DE ORO CITY	IPONAN	5	168	X
X	CAGAYAN DE ORO CITY	KAUSWAGAN	3	149	X
X	CAGAYAN DE ORO CITY	MACABALAN	2	70	X
X	CAGAYAN DE ORO CITY	MACASANDIG	7	377	X
X	CAGAYAN DE ORO CITY	NATUMOLAN	1	2	X
X	CAGAYAN DE ORO CITY	NAZARETH	1	17	X
X	CAGAYAN DE ORO CITY	PAGALUNGAN	1	16	X
X	CAGAYAN DE ORO CITY	PAGATPAT	3	47	X
X	CAGAYAN DE ORO CITY	PIGSAG-AN	1	1	X
X	CAGAYAN DE ORO CITY	PUNTOD	3	94	X
X	CAGAYAN DE ORO CITY	SAN SIMON	1	5	X
X	CAGAYAN DE ORO CITY	TABLON	1	24	X
X	CAGAYAN DE ORO CITY	TIGNAPOLOAN	2	0	X
X	CAGAYAN DE ORO CITY	UBALDO LAYA	1	1	X
X	ILIGAN CITY	ABUNO	1	20	X
X	ILIGAN CITY	BAGONG SILANG	3	43	X
X	ILIGAN CITY	BONBONON	3	74	X
X	ILIGAN CITY	DIGKILAAN	5	90	X
X	ILIGAN CITY	HINAPLANON	6	240	X
X	ILIGAN CITY	MAHAYAHAY	3	57	X
X	ILIGAN CITY	MANDULOG	2	35	X
X	ILIGAN CITY	PALAO	2	47	X
X	ILIGAN CITY	POBLACION	1	20	X
X	ILIGAN CITY	PUGAAN	2	40	X
X	ILIGAN CITY	ROGONGON	2	31	X
X	ILIGAN CITY	SAN ROQUE	3	42	X
X	ILIGAN CITY	SANTA FILOMENA	2	56	X
X	ILIGAN CITY	SANTIAGO	1	79	X
X	ILIGAN CITY	TAMBACAN	3	96	X
X	ILIGAN CITY	TIBANGA	1	-38	X
X	ILIGAN CITY	TUBOD	2	38	X
X	ILIGAN CITY	UBALDO LAYA	2	53	X
X	ILIGAN CITY	UPPER HINAPLANON	2	48	X
X	ILIGAN CITY	VILLA VERDE	1	25	X
X	LANAO DEL NORTE	DIGKILAAN, HINAPLANON, UPPER HINAPLANON	3	9	X
X	LIBONA	CROSSING, PONGOL	2	28	X
X	LUGAIT	POBLACION	1	80	X
X	MANOLO FORTICH	AGUSAN CANYON, DALIRIG	2	18	X
X	MANTICAO	POBLACION	1	26	X
X	NAAWAN	LINANGKAYAN, PATAG, TAGBALOGO	3	38	X
X	TAGOLOAN	NATUMOLAN, SANTA ANA	2	15	X
X	VALENCIA CITY	BATANGAN, CATUMBALON, POBLACION	3	65	X
X	CAGAYAN DE ORO CITY	AGUSAN	1	25	X
X	CAGAYAN DE ORO CITY	BAGONG SILANG	1	2	X
Total	**10**	**62**	**158**	**3949**	**185**

Table 1: Data Collected by Location

4. Assessment Results

This section includes the results from the household surveys and the FGDs. Firstly, the household survey results will be presented, followed by the FGDs. The analysis will highlight the summary level information, with detailed breakdowns accessible through the database subject to the removal of any confidential information.

The results will highlight the summary information, with Barangay / Municipality specific analysis to be done in the near future. It is worthwhile noting that the information included here has some significant variations across sites. This is for a range of reasons, such as:

- The nature of the damage in Cagayan de Oro (floods and mud flow) differs significantly to areas of Iligan City (predominantly floods);
- The urban-rural nexus means that the scale of impact on communities differs – while an urban setting may have more damage in aggregate numbers and cost of impact, a rural setting may be more affected as a proportion; and
- Those in evacuation centres or transitional shelters differ in their needs significantly from those that are home based, either on their own properties or being hosted by others.

This section will first consider demographic information of those surveyed and affected, including identification of vulnerable groups. This is followed by socio-economic information of affected people and respondents, a considerable influence on households' coping mechanisms. Technical assessments and the scale and type of impact is summarized, highlighting the variation within existing statistics on 'partially damaged' as well as providing information on mud, flood, debris and cleaning related issues. The type of support needed and being provided is highlighted. Finally, community based issues from the FGDs are summarized to support the quantitative analysis with qualitative information.

The assessment has collected a significant amount of information across a range of data sources. Moreover, as a rapid assessment the amount of time available for in depth analysis and reporting is limited.

This report provides a synopsis of the key issues and summary of the data that has been collected. It is not intended or able to provide detailed programmatic information in its current form. This is designed to make it useful for a broader audience. Where it is of value, specific case studies are identified as well as the Top / Bottom 5 Barangays which may differ from the summary information.

In addition, the database of information is available to interested parties, with confidential information removed where necessary. This includes Barangay specific data as well as information at the Sitio / Purok level.

This can be accessed through:
www.sheltercluster.org
www.reach-initiative.org
direct from the author
byron.pakula@acted.org
direct from IMPACT Initiatives
vincent.annoni@impact-initiatives.org

4.1.Demographics

A total of 3,945 households were surveyed as part of this assessment, over 10% of families with houses that have been affected. This represents over 19,000 individuals. The age profile of respondents highlights the relative young nature of the Philippines in general, but also the number of children that have directly been affected. This includes 11% of children under the age of five and 3% of infants. Moreover, the vast majority of those affected are working-age people, highlighting the intricate relationship of livelihoods needs as well as shelter needs. No significant gender variation was identified.

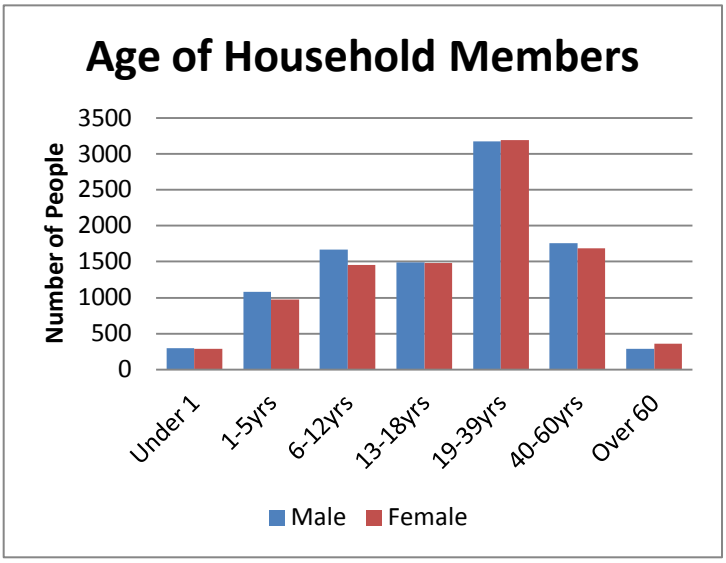

Figure 1: Age Profile of Affected Households Surveyed

It is worthwhile noting that this assessment has a larger proportion of those in evacuation centres and the like. This means that the sample has particularly focused on vulnerable households. Firstly, they are most likely to have had their houses completely destroyed or at least unlivable even if it may be possible to rehabilitate. Moreover, as they are in this sort of shelter arrangement, they are less likely to have alternative coping mechanisms such as being able to rent, live with relatives, etc. It is these households that have the greatest need as well as being less capable of self-managed support.

A large number of those affected are considered vulnerable households. There is a high number of single-headed households (**11% of all affected households**), pregnant and lactating women are present in 13% of all affected households as well as mentally or physically disabled (6.5%) or indigenous (8%). This highlights the need for shelter and other programs to cognoscente of vulnerable households, particularly those that would not be capable of constructing their own shelters and would require technical and labour assistance.

Women single-headed households seem to be slightly prevalent if compared to male single-headed household. It is likely that women single-headed households are more vulnerable than other households in the aftermath of the crisis and, therefore, their needs in terms of assistance should be ranked as high priority. Households with mental/physical disable members should also be closely monitored. If targeted by shelter interventions, these households should have the access to services and further assistance maintained or promoted according to pre-Sendong situation.

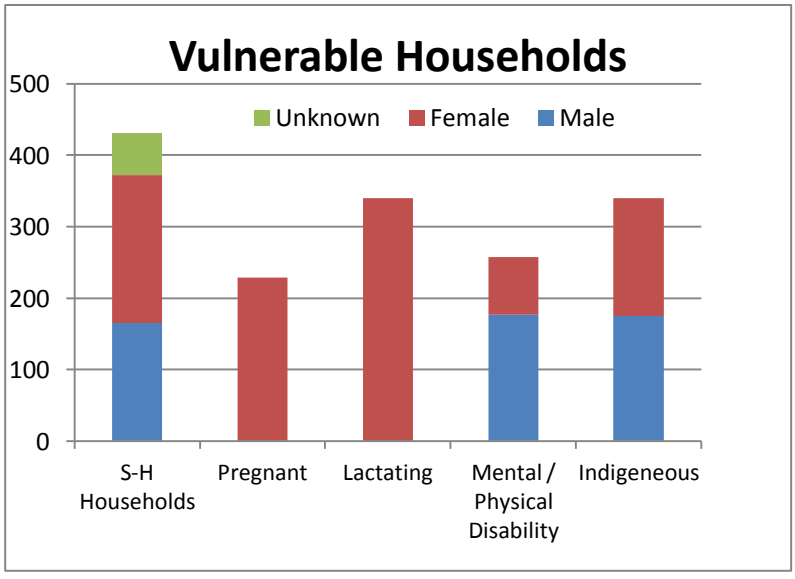

Figure 2: Vulnerable Households and Persons

4.2.Socio Economics

The primary livelihoods of those that have been affected and surveyed is agriculture and skilled / unskilled labour. Only 13% of all respondents claim to have no income. However, there are very few salaried jobs or formal sector jobs, with many working in what could be considered high risk industries (those where there could be significant latency or fluctuating incomes). This is exacerbated for many households that do not have a secondary source of income (93%).

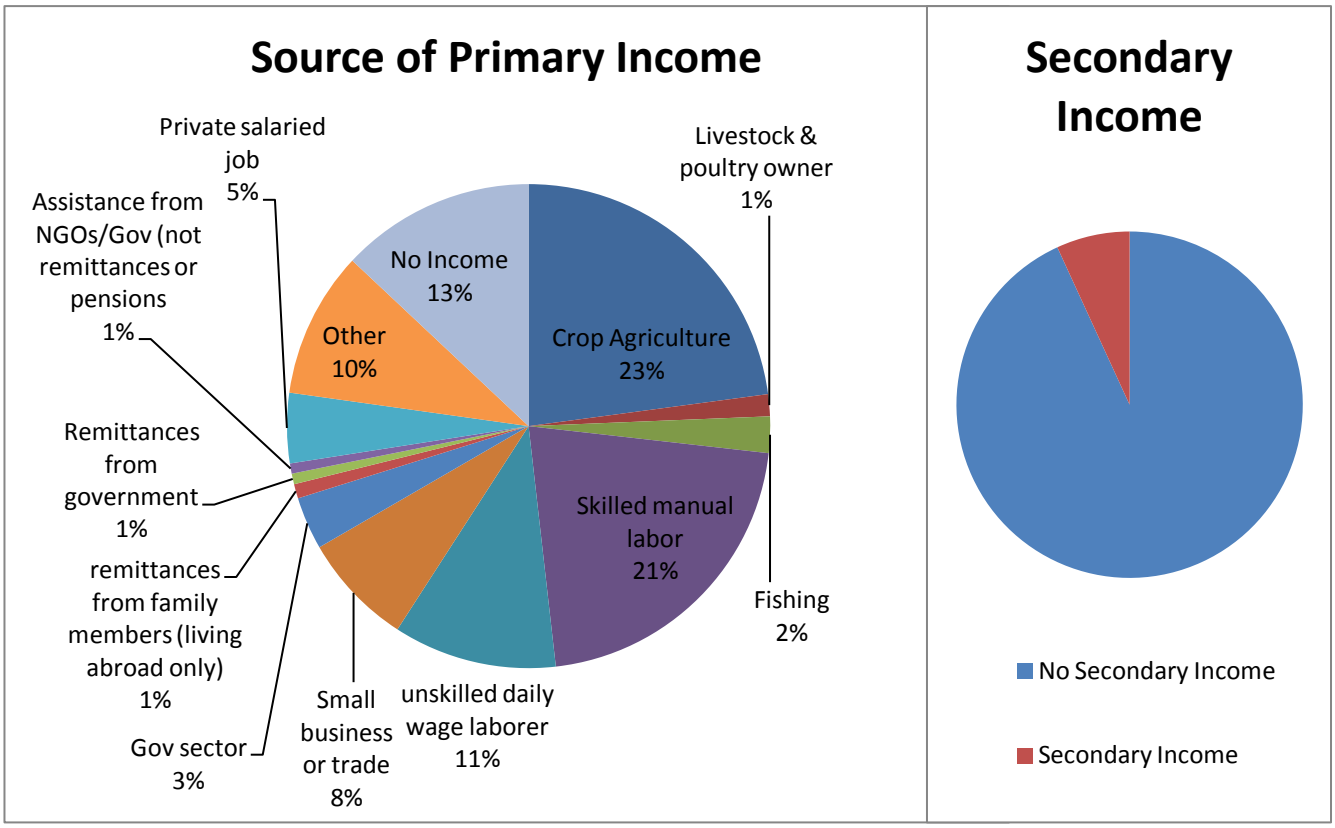

Figure 3: Source of Primary and Secondary Income

According to NSCB's most recent poverty reports[3], Region X's incidence of poverty has declined but remains stubbornly high at over 32%, and 39% in Lanao del Norte (Iligan). This actually belies the truth, as there is a high standard of deviation (11%), implying that there is a dichotomy of poor and wealthier families. The threshold per capita for poverty is approximately 16,000peso per annum, or 6,400peso per month approximately for the average household of 4.8 persons in the sampled households. Of the households surveyed, approximately 77% claim to be below the poverty threshold.

The extreme levels of poverty of those affected are contributed to by the fact that many households have lost income as a result of the displacement. According to the Socio-Economic Profile (SEP) of Cagayan de Oro city of 2010, Cagayan de Oro area is classified as highly urbanized however, 33% of the land is used for agricultural purpose (19,335.2741 ha.) with a third of it dedicated to crops (6,659.4000 ha.). It would require further and more specific assessments but it is likely that Sendong storm and its consequent floors have disrupted ongoing agriculture activities and that part of the land may need reclamation interventions.

Therefore; those households which were relying on agriculture as source of income will probably need to be assisted immediately in terms of livelihood support. Field observations demonstrated the destruction to some crops and fields, which are likely to have an ongoing impact on families resilience.

[3] NSCB, 2011, "Incidence and Thresholds of Poverty, 2009", http://www.nscb.gov.ph/poverty/2009/table_1.asp

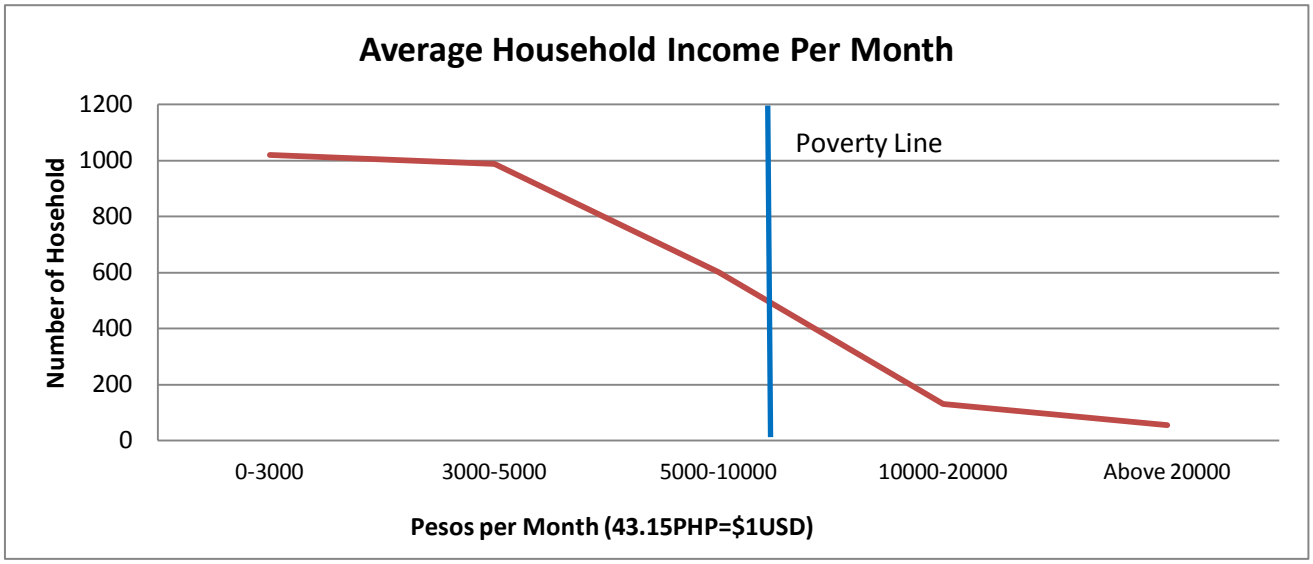

Figure 4: Average Household Income, Poverty Incidence

64% of households who reported an income stated that their income had declined by over 50%, while only 11% reported that their income remained unaffected. As previously mentioned, this is likely to be due to loss of agriculture products as well as the fluctuating and informal wages that they receive. This highlights the need for incorporating income-generating activities, or cash interventions, as part of shelter or other reconstruction works

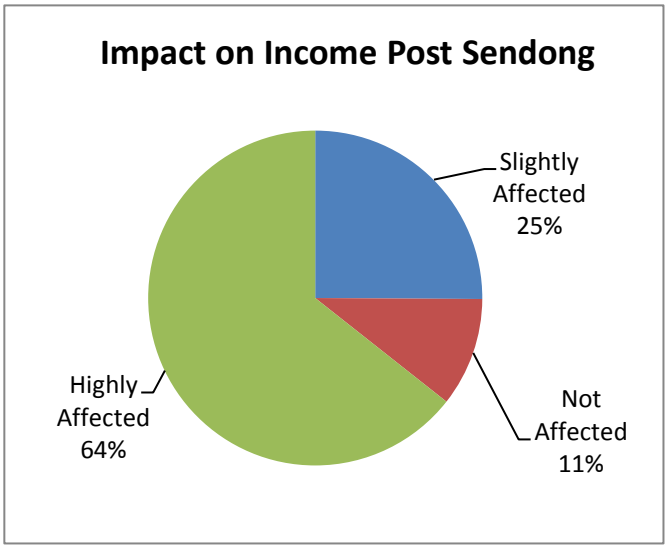

Figure 5: Impact of Sendong in Households' Income

The above information is supported and emphasized by the significant number of affected households that state they are not completely able to meet the family's basic needs. While before Sendong 554 households noted that they could only partially cover basic family needs, this number has almost tripled to 1430 after Sendong, reflected by the fact that incomes have been severely affected.

Households' Income Sufficient for Covering Basic Family Needs		Before Sendong			
		Completely	Sufficiently	Partially	**Total**
After Sendong	Completely	112	72	78	**262**
	Sufficiently	159	328	150	**637**
	Partially	293	811	326	**1430**
	Total	**564**	**1211**	**554**	**N=2329**

Table 2: Capacity for Households to Cover Basic Needs, Before and After Sendong

4.3.Technical Assessment

The current shelter arrangements for affected families have not been widely known. It is clear that as of 20th of January there are approximately 4,700 households in evacuation centres or about 12% of those with affected houses. While reports have indicated that many families have opted to live with family and friends, the findings of this assessment is that there is a significant portion that are living in temporary shelters or damaged houses on their own property. Anecdotal evidence suggests some many informal property owners are refusing or unwilling to leave their properties in fear of land rights issues – this assessment supports those findings, with 60% of those remaining on their property not having formal rights, slightly higher than the overall level of households without formal property rights.

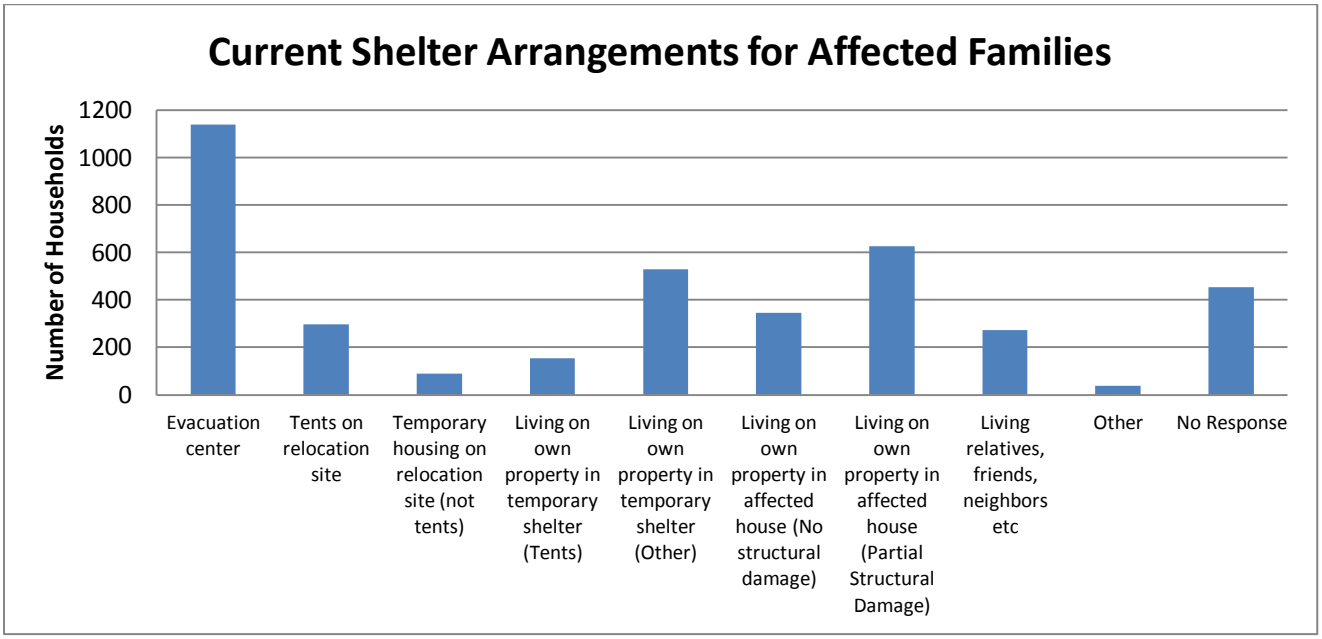

Figure 6: Current Shelter Arrangements of Respondents

Sendong created significant floods and mud flows in particularly urban areas of CDO and Iligan, as well as impacting on remote and rural communities – including those in higher altitudes that were more likely to be affected by flash floods or landslides. The most significant impacts were felt by those that did not have adequate housing, such as wooden shacks (57%) and wooden shacks typically with concrete foundations / bottom floors (29%). This data is underlining once more that low income classes have been among if not the most affected by the storm. Those with houses made from concrete were also affected (13%), however it will be shown that this typically was of lesser impact (flooded, mud flows) as they are more resilient.

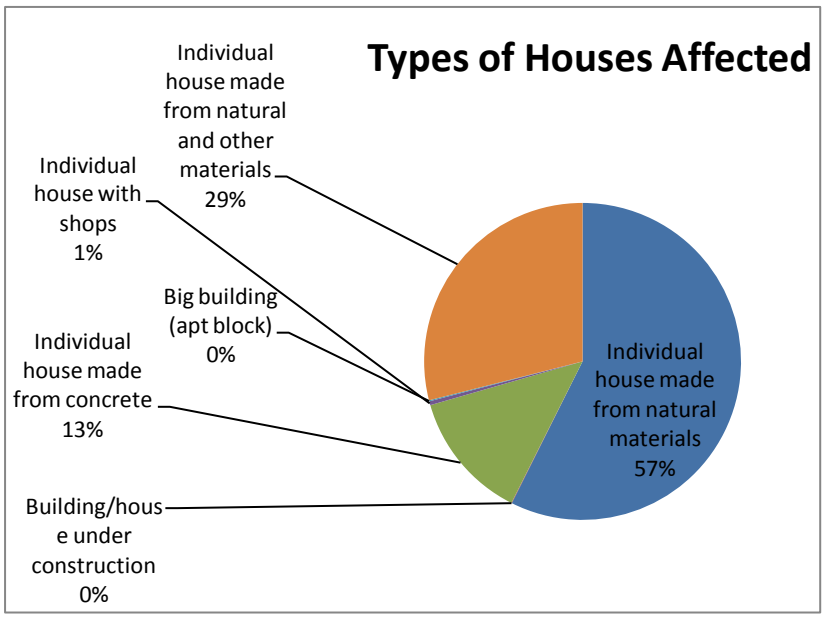

Figure 7: Types of Houses Affected

As has been discussed, official statistics highlighted that of the 39,400 houses that have been affected, 11,427 have been totally destroyed and a further 27,973 have been partially damaged. However, the type of programs to be implemented by agencies for partially damaged houses varies substantially: for instance, UN Habitat anticipates rehabilitation of 3,000pesos, while IOM anticipates packages of 7,000 and 20,000 pesos. Therefore, it is essential to understand to a higher degree of certainty the type of damage and the extent of damage to partially damaged houses. The assessment undertook three categories for this. Firstly, category 2 whereby there is flood and mud damage but no structural damage to the house. Secondly, category 3 whereby there is minor damage to the shell of the house but the main supports remains intact. And thirdly, category 4 whereby the house is currently unlivable and there is significant damage with some support damage but the house itself can be rehabilitated.

This assessment has identified that most of the partially damaged houses have relatively minor impacts, requiring smaller levels of support. This typically includes cleaning of mud damage, small repairs of flooring and roofing (where the water has been extremely high), and rehabilitation of fixtures such as doors and windows. Only 13% of partially damaged houses were assessed as requiring major rehabilitation, such as walls, floors, roofs, and potentially support structures. There is also significant variation of the type of damage based on the type of house.

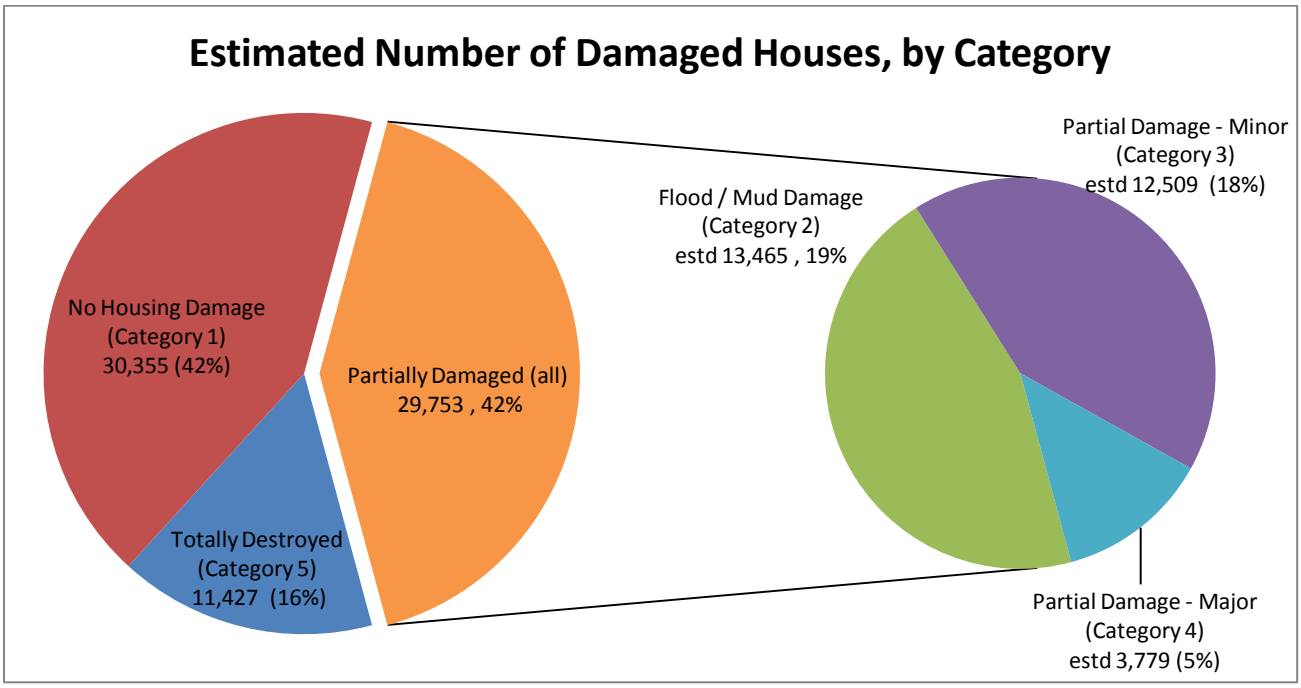

Figure 8: Categorising Partially Damaged Houses To Reflect Minor Infringements

Category of Damage by Type of House		Category of Destruction					
		No Significant	Flood / Mud	Partial – Minor	Partial – Major	Totally Destroyed	**Total**
Type of House	Wooden	7	271	244	75	1548	**2145**
	Wood / Concrete	2	160	159	31	728	**1080**
	Concrete	1	114	109	41	222	**487**
	Larger Buildings	0	5	6	0	8	**20**
	Total	**10**	**550**	**518**	**148**	**2506**	**N=3732**

Table 3: Categorising Damage by Type of House

Of the houses affected and assessed, approximately 86% of respondents stated their houses were made to a larger extent in wood. Of those, around 75% were category 5 and considered totally destroyed. This was verified by site visits, showing the nature of the damage and who it affected. In contrast, the concrete houses fared better with only a half requiring complete reconstruction and the majority requiring some form of rehabilitation support such as cleaning of debris.

One of the defining aspects of the Sendong shelter challenge is the Government-declared No Build Zones[4]. This has been mapped by the IMPACT Initiatives team in CDO, however they have not been sufficiently identified in Iligan. Despite being identified in CDO, it is not clear whether individual households have been adequately informed or are aware of the location of No Build Zones at the time of writing. Government calculations state that there are approximately 2700 households in CDO within the No Build Zones. It is worthwhile noting that No Build Zones have been declared previously but not necessarily enforced, which is why so many houses were located very near to the river systems, particularly in build up urban areas.

The assessment asked respondents whether their houses are located in the No Build Zone. Unsurprisingly, a very low number of respondents in Iligan stated that their houses were in No Build Zones as they have not been clearly demarcated nor have households been made aware of their locations[5]. However, in CDO there were a large number of respondents that stated they were in No Build Zones – this is greater portion of all affected households due to the high level of sampling in evacuation sites and temporary shelters. While many of these are houses that have been completely destroyed, queries remain as to whether those with partially damaged houses will be allowed to rehabilitate with the same sort of construction standards.

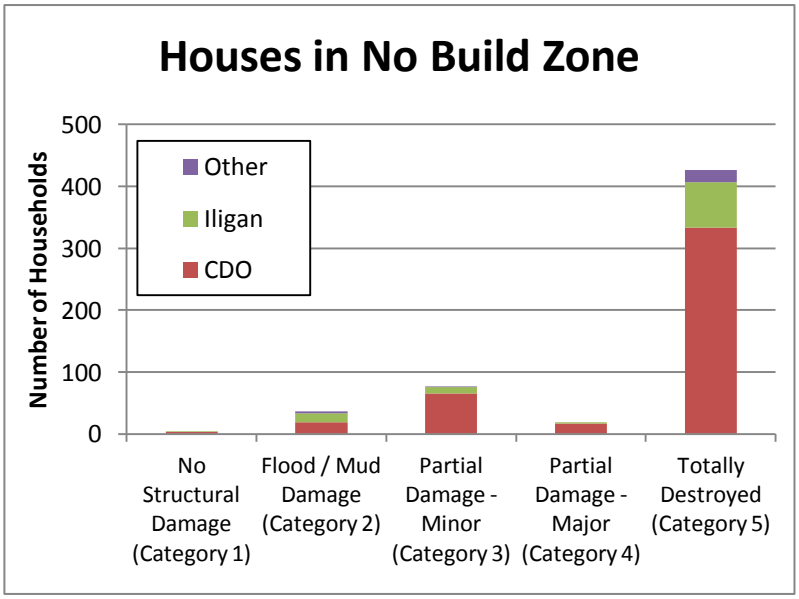

Figure 9: Houses in No Build Zones, by Location and Category of Damage

There has been significant discussions about the potential to map the flood and mudflow levels across areas, and compare that with the level of damage and type of clean up provided. At the time of writing, the GPS coordinated have not been imputed into the REACH web-map that links household surveys with a geo-location. However, the graph below highlights the nature of damage and destruction that has taken place as a result of the flood waters and mudflows. Generally these are experienced in combination – that is, one may have flood water of 3m+ and mudflows of 0.5-1m, and the house is destroyed by the combined effects. Regardless of the inter dependencies, it can be seen that a small amount of mud can do a lot of damage, and where flood waters are greatest the impact is more devastating. It can also be seen that in most cases, the flood waters were extremely high – when the flood waters were lower, or houses were further away / higher up, the house tended to escape damage.

[4] These have been referred to incorrectly in some publications as No Go Zones.
[5] At the time of writing, a protest in Iligan City was underway in relation to demands to rebuild houses on their existing sites. This has culminated in households setting up temporary shelters on a bridge into the city with signs.

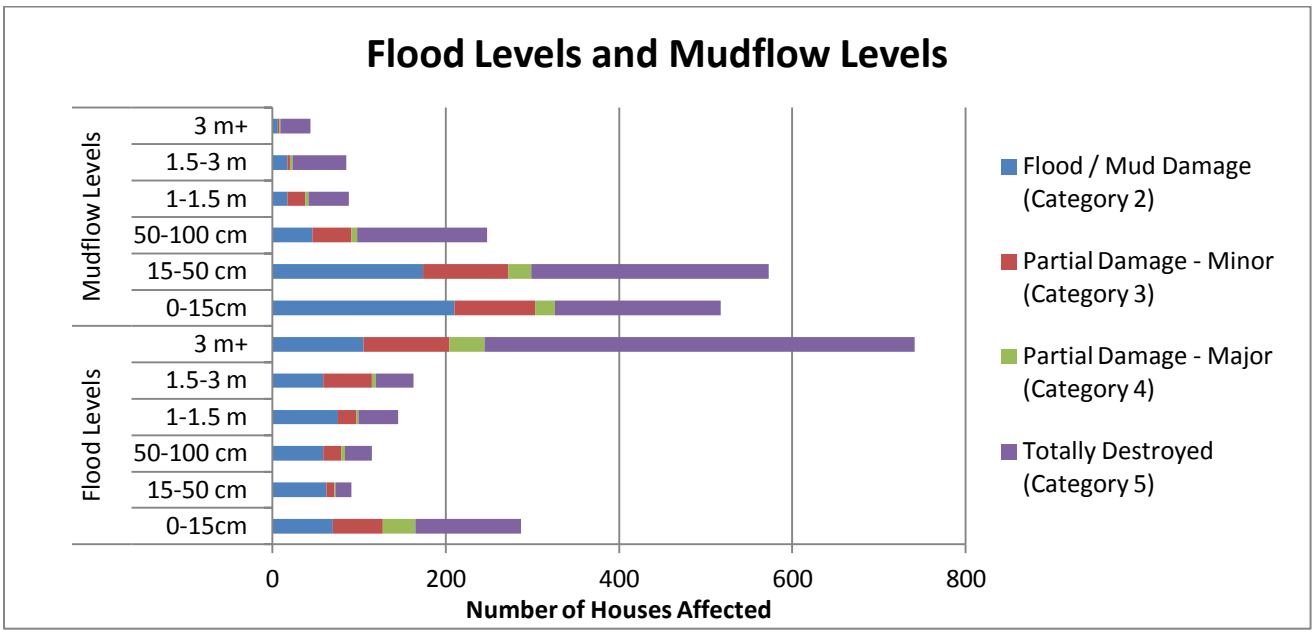

Figure 10: Flood Levels and Mudflow Levels, by Category of Damage

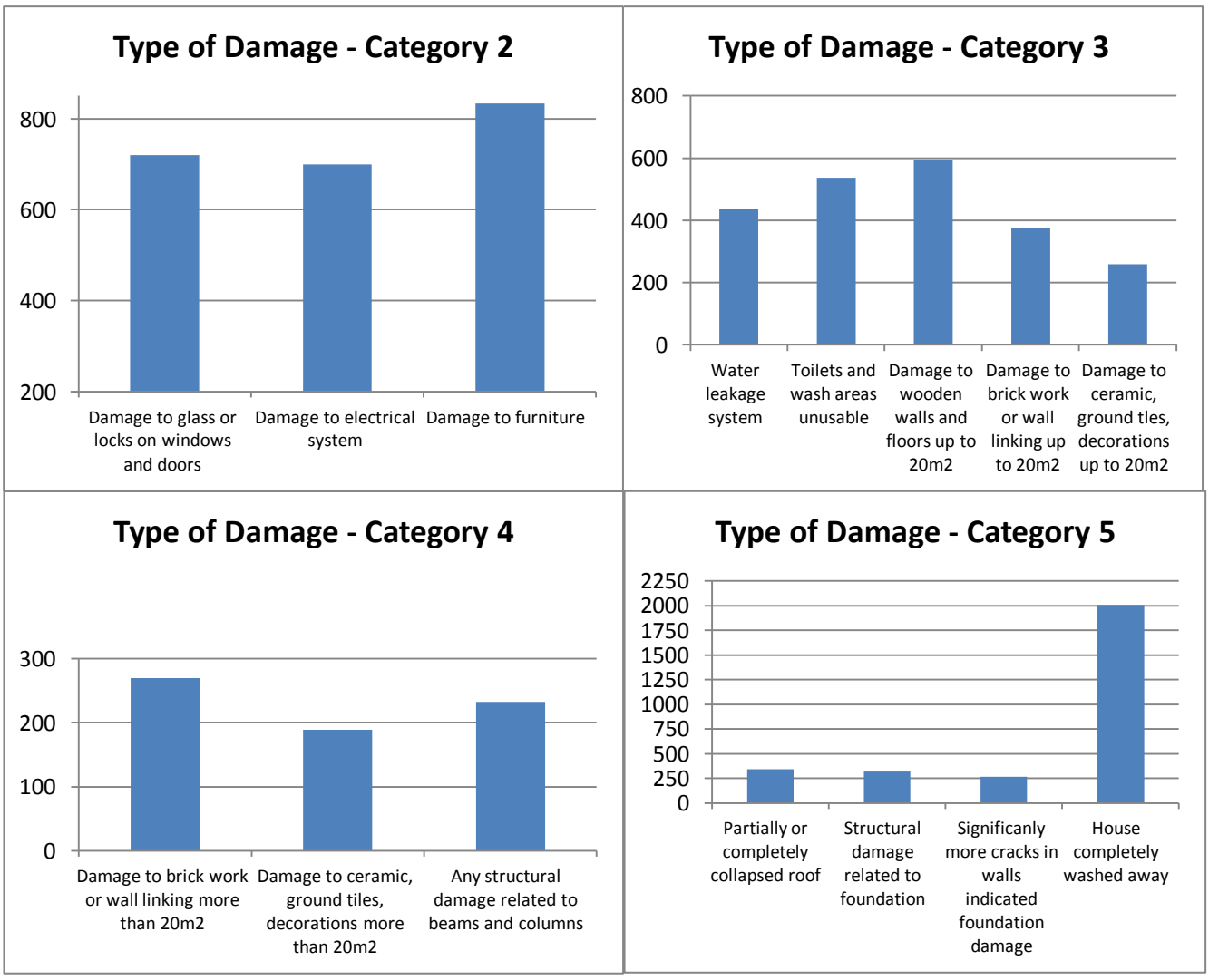

Figure 11: Type of Damage, by Category of Damage

Debris from floods is caused by inundation and high-velocity water flow mainly. As soon as flood waters recede, their disposal should begin to allow better access to aid actors as well as eliminate health and safety hazards. This is why the presence and scale of debris was included in the assessment on the behest of those involved in the cleaning, as well as the Early Recovery Cluster to highlight the nature and location of cash for work opportunities. Debris removal is an opportunity to link post floods rehabilitation with livelihoods programs.

The main type of debris that is creating a significant challenge for the recovery and relief effort is mud, as demonstrated in Emily Homes as part of the simulation exercise in CDO where enumerators could barely reach the houses – and unfortunately were exposed Leptosorosis, where remedial action was taken thereafter. Furthermore, there is a significant presence of garbage and logs which also block access to households. 'Other' debris typically included corpses that have not been able to be located among other debris, causing significant concerns for nearby families.

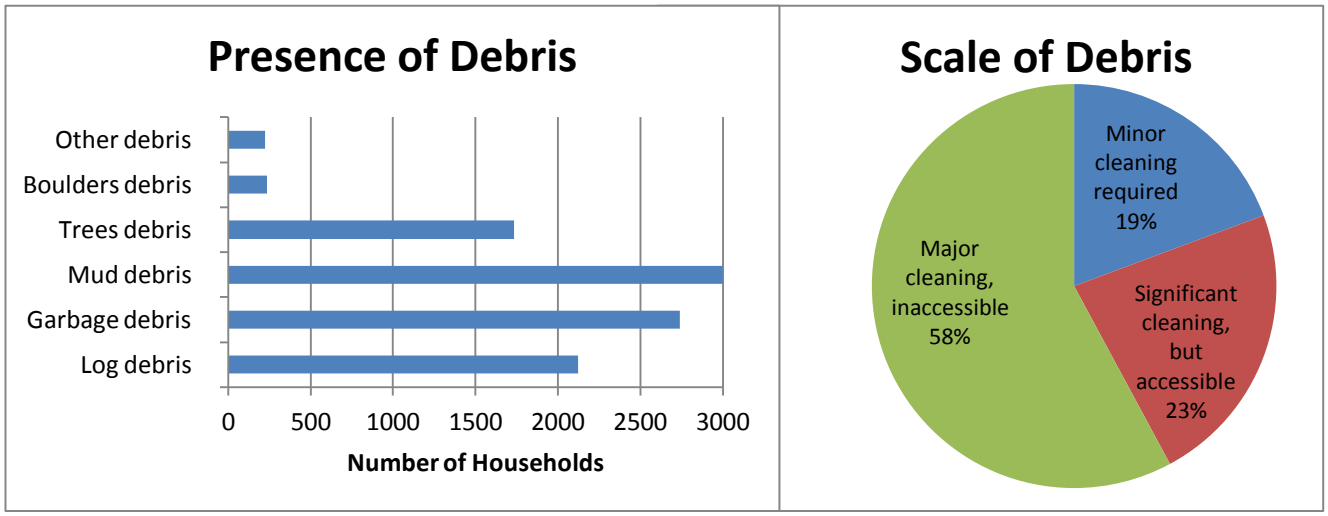

Figure 12: Type and Scale of Debris

Community level or Barangay level debris assessments should be done, when relevant, in order to quickly spot sites with hazardous or health-threatening debris and then segregate it from other typologies off debris and waste. **The potential public health impact means that debris removal ought to be a priority**. However; debris disposal has to be done according debris typology with a particular attention to hazardous debris and waste. This kind of waste should be properly managed and properly dumped in order to not affect the communities in the longer terms. Local authorities in terms of public health and environment need to be involved in these removal interventions.

It is suggested to revise communities' solid waste management plans and select new appropriate disposal site if necessary. Communities may need support in terms of quick access to specialized personnel, trainings, gears and/or equipments. It is suggested also, when possible and relevant, to include recycling or re-using program in the debris management and disposal. At the end of the emergency response, a long term debris management plan should be included in existing communities emergency planning

Access to public services such as electricity and water is crucial in times of emergency. Over half of those affected currently do not have access to electricity, largely due to damage to household networks but also because of damage to public networks. Similarly, there are many households and communities that do not have access to water. In the shelters, it is likely that standards are being met though perceived access may be an issue for some.

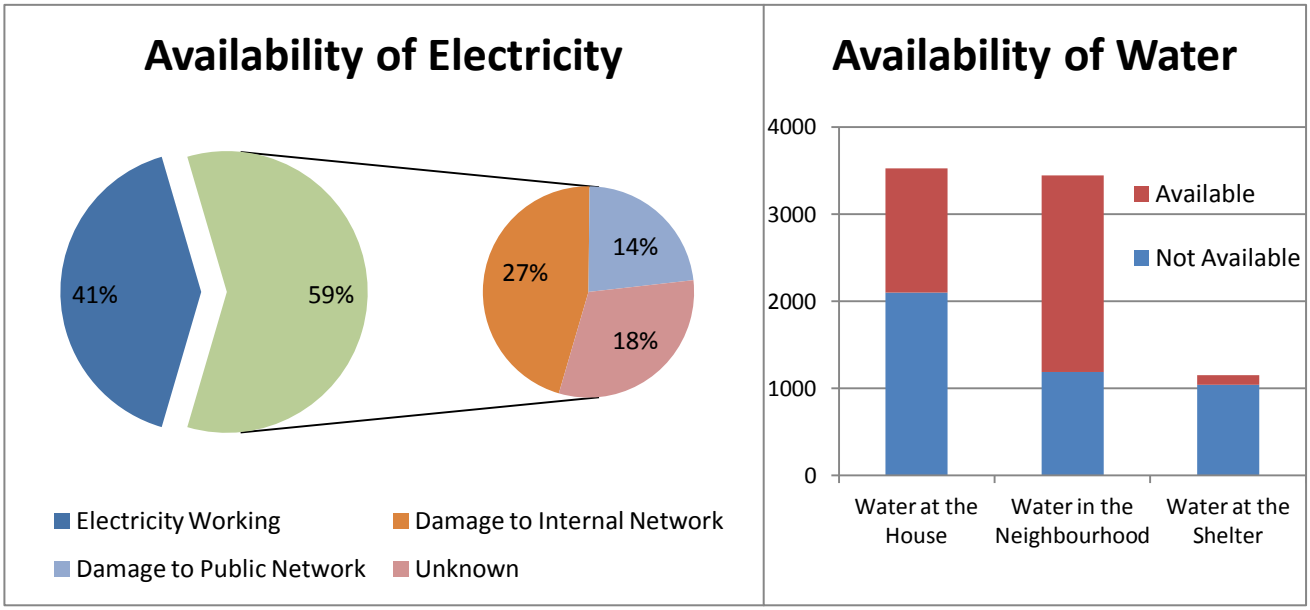

Figure 13: Access to Services: Electricity and Water

Volunteers trek through the jungles of Valencia to find communities with damaged houses from Sendong floods and landslides.

A temporary shelter built in trees after the families house was destroyed by floods.

4.4.Support Needed and Provided

The level of support requested was particularly high (over 95%), unsurprising considering the number of households in evacuation centres and the fact that 77% of those surveyed are at or below the poverty line. The type of support requested by households provides a greater reflection of the immediate needs, such as food as well as water. In addition, health, sanitation and hygiene kits were also requested and are areas where significant provisions have been provided by the relief efforts. Moreover, livelihood support seems underwhelming relative to the level of requests placed by households.

With regards to shelter needs, the financial requests were considerable as a result of household income having been highly affected (64%). This is coupled however with the need for materials for their houses – something that was regularly observed as many communities are not willing to wait for assistance and have already begun creating temporary shelters on their property or rebuilding their permanent shelters. Moreover, labour support is offered as the asset that they are most able to contribute to their own needs. Technical assistance for low-tech housing was a notable absence in terms of support required, highlighting the capacity of communities to build back the same houses if so desired.

Those that noted 'other' support required were typically focused on land for relocation, a significant concern for those in No Build Zones. Clothing reflected 'other' support provided and offered.

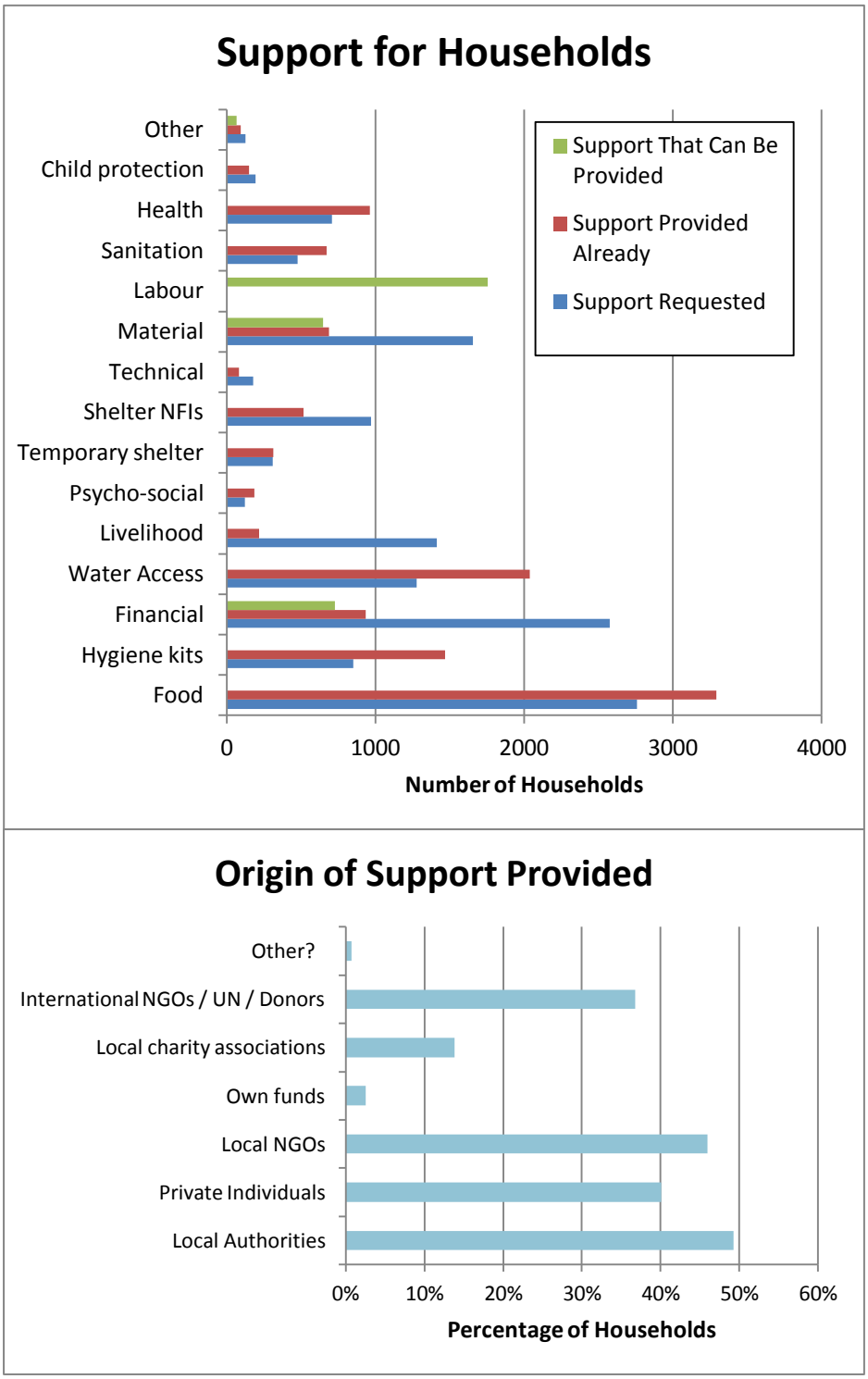

Figure 14: Type of Support Requested, Provided, Offered and Source

However, looking at the above graphics, it is important to acknowledge few caveats:

- Support requested values are a fairly reliable tool in order to forecast communities' expectations in terms of assistance.
- If the support requested and support provided reaches the same value in the graphic, this doesn't mean at all that sector needs are covered and there are no gaps. At the contrary, beneficiary perception and ground reality might be different.
- Origin of support provided has not been possible to verify if INGOs/UN support and LGNOs support were indeed the same, one being channeled through the second.
- Some needs, I.e. child protection or psycho-social support, could be under-represented due to the fact that beneficiaries understanding of this kind of assistance is low or under reported.

The level of risk perceived by households is considerably high, with around half of the respondents in each category noting some concerns. Neighbourhood safety is worrisome for many households, particularly those in evacuation centres; meanwhile conflict is a perceived threat to those largely in Iligan. However, in terms of shelter related risks, there are concerns by households in terms of being evicted, an issue that has dogged those in and around No Build Zones particularly. Finally, the risk of their house in general as a result of damage – in terms of being able to rehabilitate it and it not being further damaged through for example moisture related concerns – is the most significant issue raised by around 70% of respondents.

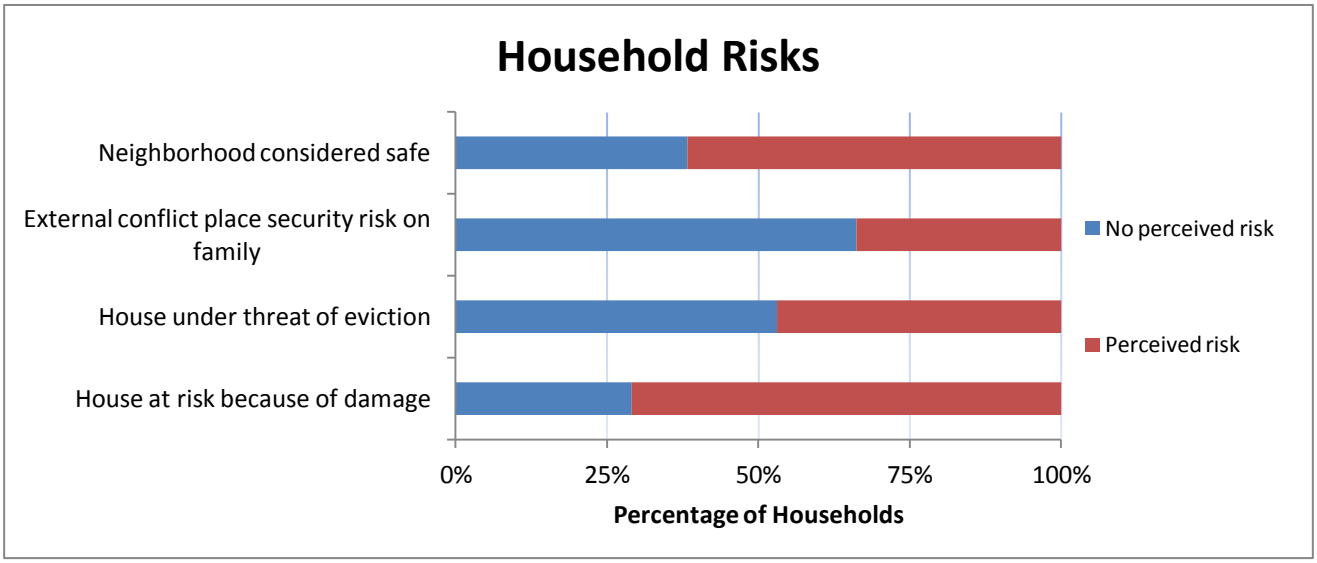

Figure 15: Perceived security risks to households

A household survey being undertaken at an evacuation centre in a school 3 hours drive from Cagayan de Oro.

4.5.Estimating Number of Priority Houses Rehabilitation and Reconstruction

A key question that was posed as part this shelter assessment is to identify the scale and scope of support required for rehabilitation and reconstruction of shelters. A significant gap previously identified has been the disaggregation of partially damaged houses, but in addition to that understanding the socio-economic context of target households. This section summarises the above information, generating an estimate of the scale of the shelter program required to meet the needs of priority households.

While it is not encouraged to generalize the findings in this assessment too significantly, the sample of partially damaged houses is more representative than other type of data collected. This is because many of those in evacuation centres, which have been more heavily sampled, have totally destroyed homes. Therefore, if we remove the Category 5 houses from the assessment for a moment, we can get a good cross section from the community of what type of partially damaged houses they have – particularly from homebound affected populations living with relatives, on their own properties in make shift shelters, etc.

Based on government data and the assessment findings, approximates for the 27,943 partially damaged houses have been generated based on the assessment findings[6]. After discussions with key actors in how to prioritise the relief effort, it has been decided that reasonable assumptions are:

- Category 2 houses are not included, as debris clearing is being undertaken by households, government actors, and can be formed as part of cash for work programs;
- Only vulnerable partially affected (category 3 and 4) households should be included, specifically those living below the poverty line;
- All totally damaged houses are to be included in a large scale relief program; and

Therefore, using the assessment findings and DSWD data, a prioritisation process can be initiated to identify the number of households that meet these criterion.

	Number of Households	Percentage of All Damaged Houses
All Affected Households in Region X	39,400	100%
Partially Damaged Houses (DSWD)	27,973	71%
Category 3 & 4 Households (Assessment)	15,385	39%
Category 3 Households At or Below Poverty Line (Assessment)	*10,577*	*27%*
Category 4 Households At or Below Poverty Line (Assessment)	*3,274*	*8%*
Category 3 & 4 Households At or Below Poverty Line (Assessment)	**13,851**	**35%**
Category 5 Households (DSWD)	**11,427**	**29%**
Total Support	**25,278**	**64%**

Table 4: Estimated Number of Priority Houses to Rehabilitation and Reconstruction

[6] The Philippine Red Cross recently released their estimates for the number of houses affected by Barangay in CDO (Disaster Statistical Report, CDO, 23rd January 2012). This totaled 4,959 houses completely destroyed (20% less than DSWD figures) and 7,317 for partially damaged – focusing only on those with structural impacts. If we added Category 3 and 4 together to get similar parameters, the estimate still remains about 50% of the number issued by Government. Official Government updates for CDO at the Baragay level are still pending – during this assessment while discussing the scale of damage with Barangay Capatains and communities, the broad consensus is that Government data has been accurate despite not being sufficiently detailed. .

Overall, the number of households that have been prioritised is 25,278 out of the 39,400 households that have been affected. This includes the 11,427 houses that have been completely destroyed. However, this number from DSWD needs to be verified to some degree as well. While figures have proven to be reliable, some municipalities / barangays that had been identified as having damaged houses were assessed and no damage could be identified (e.g. Malitbog, El Salvador City).

With regards to partially damaged houses, the estimated number of households to support is 13,851. It will be noticed that the prioritisation of only supporting the rehabilitation of households at or below the povery level has not reduced significantly the number of households to support. As previously discussed, this is a result of the fact that the incidence of poverty is so great for those affected. This exacerbates the existing levels of inequality and poverty, and therefore it is essential that a well developed rehabilitation program is implemented. Many of the houses are category 3, meaning that the cost of materials and support should be lower than originally anticipated.

Finally, category 2 has not been included as previously discussed. However, there may be pockets of inaccessible communities or severely affected households that are considered vulnerable which may required some support.

It is essential that prior to any program being developed and implemented, additional beneficiary surveys are undertaken by organisations involved, and that they verify not only this assessment but also the beneficiary lists.

Overall, the level of assistance that has been priorised is considerable. At the time of writing, a portion of this has already been committed by the international community though there remain gaps in terms of scale, scope and reach. In areas such as more remote Iligan and other municipalities, there are fewer organisations implementing shelter related projects. The concern is that those that are in most need though are least accessible need to be incorporated in future programming. This includes communities outside of Cagayan de Oro, in the highlands of Iligan[7] , and those outside of Region X and in ARMM or Region VII for example. *See map of NGOs intervention for destroyed houses v level of coordination.*

More detailed information at the barangay level is available in the database and through the maps produced by IMPACT initiatives.

[7] Barangays of Iligan were not able to be assessed due to poor road conditions and conflict related security issues. These ought to be reconsidered for any future assessment, and should not be forgone from future work as they are not in this assessment process.

4.6.Community Based Information

Due to time constraints and the need for disseminating this information as rapidly as possible to support program activities, the community based information in this *Initial Assessment Report* has not been compiled. Anecdotal evidence has been provided throughout to add detail to the statistics, however it is recognized that the value of the 185 focus group discussions is immense.

It is worthwhile reiterating that the community based needs are predominantly related to emergency supplies such as food for vulnerable people, immediate cash for work opportunities, and infrastructure needs such as electricity and water. These community needs will be exacerbated in relocation areas in time.

A focus group taking place in Libona, highlighting the needs for rapid rehabilitation of affected houses.

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5. Conclusions & Recommendations

1. The incidence of poverty not just in the region but in the directly affected areas is considerably high - 77% of those affected. This has been exacerbated by Sendong, with up to 64% of households' income being highly affected. Therefore any effective program needs to target the potential income-generating activities of beneficiaries.
2. Debris removal and clearing is of utmost importance to ensure access to houses and communities, while also preventing public health issues from worsening – such as the current Leptosorosis outbreak. Solid waste management plans are recommended where necessary. This can incorporate a livelihood component through cash or food for work programs, providing livelihood opportunities for the most vulnerable within communities.
3. A common understanding of the definition of damage to houses, and coordinated approaches to designing rehabilitation and reconstruction packages to ensure equitable distribution of support.
4. Those in temporary shelters and evacuation centres ought to be prioritised for relocation, reconstruction and rehabilitation projects. This is for two reasons. Firstly, they are the more vulnerable and less capable of those affected. And secondly, the sites are typically schools which should return to their normal operations as soon as possible for the sake of the children.
5. The No Build Zones need to be clearly demarcated and communicated to those affected. Moreover, any program that addresses reconstruction and rehabilitation ought to adhere to these boundaries in an effort to improve disaster risk reduction and resilience to future water-related events.
6. Programs ought to prioritise households that are below the poverty line with rehabilitation needs, and all totally destroyed houses. This should happen in a timely manner as individuals are willing to work and build their own homes (if possible), though lack the materials and financial resources to implement their own reconstruction and rehabilitation projects.
7. Reconstruction and rehabilitation works should as best as possible incoroporate disaster risk reduction components. This may involve 'building back better' and including concrete foundations; supporting early warning mechanisms to reduce the likelihood of significant impact from floods or other disasters in the future (baring in mind that origin of the disaster for many areas were in faraway places upstream); and include community mobilization within the construction programs for sustainable outcomes.
8. Coordination across Clusters is essential to a holistic program that benefits the household and the community, including food, livelihood, shelter and other support. This should be coordinated at the overall level as well as within regions. It is worthwhile noting that by and large this seems to be well underway.
9. Further assessments in currently inaccessible areas needs to be undertaken to ensure a comprehensive set of information is used for planning and prioritisation.
10. Disaggregation of existing data at the Barangay level is necessary to provide greater guidance to those implementing programs – be it through formal reports or informally through data-mining of the extensive data sets generated through this assessment.

List of Annexes to This Report

Appendix 1: **Household Survey**

Appendix 2: **Focus Group Discussions**

Saying farewells in Church of Latter Day Saints, base camp for Iligan and surrounds.