ShelterCluster.org

Coordinating Humanitarian Shelter

SHELTER CLUSTER ASSESSMENT IN LORETO, PERU

FINAL ASSESSMENT REPORT

JULY 2012

REACH Informing more effective humanitarian action

Humanitarian Aid and Civil Protection

Humanitarian Aid
and Civil Protection

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Figures and Tables

Figure 1: Typical flood damage experienced in the semi-urban neighbourhoods in Punchana, Iquitos

Acronyms

3W	Who What Where
ACAPS	The Assessment Capacities Project
ACTED	Agence d'Aide à la Coopération Technique et au Développement
AHM / AAHH	*Asentamiento Humano* / Neighbourhood within Municipal Jurisdiction
COER	Regional Emergency Coordination Body, Loreto
DB	Data base
DIRESA	Regional Health Authority, Loreto
DRR / DM	Disaster Risk Reduction / Disaster Management
ECHO	European Commission Humanitarian Aid Office
FGDs	Focus Group Discussions
GIS	Geographic information systems
IFRC	International Federation of the Red Cross
INGEMMET	Geological Institute of Mining and Metallurgy
IOM	International Organization for Migration
INDECI	National Civil Defence Institute, Peru
JRC	Joint Research Centre – European Commission
NGO	Non-governmental organization
PRCS	Peruvian Red Cross Society
SENAMHI	National Meteorological and Hydrological Service, Peru
SME	Small and Medium Enterprise
UNOCHA	United Nations Office of Coordination of Humanitarian Affairs
UNOSAT	United Nation's Operational Satellite Applications Program
UNICEF	United Nation's Children's Fund
WaSH	Water Sanitation and Hygiene Promotion

Geographic Classifications

English Name Used in Report	Definition
Region	Highest form of governance below the national level where many government agencies reside
Province	Sub division of a Region with own administrative structure reporting to regional government
District	Sub division of a Province
Municipality	Urban administrative area
AA.HH / Caserio	Neighbourhood that may also be informal and not classified for administrative purposes

1. Executive Summary

1.1. Context

A strong La Nina effect active since 2011 formed severe hydro-meteorological disturbances across South America which caused heavy rainfall over a period starting in November 2011 through the first quarter of 2012. These strong rainfall events moved across Peru causing its national meteorological agency – SENAMHI – to issue 16 severe weather warnings between January and April 2012. As a result, watersheds across Peru were coping with over 100% more rainfall than the monthly precipitation average of 180mm for February-March, culminating in flash floods and landslides in highland areas, and widespread flooding across lowland areas. Within the Amazon basin, water levels rose above historic highs, with the Amazon river itself registering 118,97 metres above sea level (m.s.l) at its highest level on the 20th April 2012.

States of emergencies were called across 18 of Peru's 24 regions, of which 6 remain active at the time of writing. INDECI data estimates a total of 833.779 individuals affected by the extreme weather events and the consequent floods and mud/- landslides. Amongst the most affected regions was the Department of Loreto, situated in the North-East of the country. Over the course of a three month period between February and April 2012, over 280.771 individuals and 59.880 shelters were affected by floods. This represented 34% of the total number of affected individuals, and 35% of the total number of affected shelters nationwide.

As a result, the Global Shelter Cluster in partnership with the UN humanitarian team in Lima activated the shelter cluster in Peru in early June in order to conduct an assessment on the impact of the flooding on the shelter sector in the Loreto Region. The aim of the assessment was to support coordination efforts and inform the humanitarian community and national/regional stakeholders on the needs and recommended strategy for a post-emergency response.

Despite the fact that multiple locations across the country could be considered as areas of priority for a shelter assessment, the focus of the humanitarian coordination actors at the national level has been on the region of Loreto. In large part this is due to the significantly larger scale of the numbers being reported from the area. While Loreto does not match with regions such as Puno in terms of number of shelters collapsed, at the national level the concern is that Loreto has over 60.000 affected shelters in combination with over 200.000 individuals categorized as *damnificadas* or who lost everything, which is significantly higher than any other region. Moreover, authorities in highly affected regions such as Puno are said to have responded in a more rapid manner in comparison to those in Loreto where the information flow within the region and thus subsequent response was much slower. This greater capacity at the regional level in Puno is considered to have mitigated the impact of the events, one that was not available to the populations in Loreto living under the impact of floods for a period of multiple months without recourse to aid and support given a much lower regional capacity to collect, funnel and consolidate information from the field. Finally, actors in Puno observed that the figures mask the reality that a majority of families have more than one shelter in regions such as Puno, thus having much less acute shelter assistance needs. Based on this information provided by the both Redhum and UNOCHA the shelter assessment team chose to retain the original focus on Loreto.

This report consolidates the information collected by the shelter cluster's assessment conducted with the facilitation of REACH between the 20th June and 07th July 2012. In addition to this report the assessment team completed a secondary data review for which a separate report is available, as well as a web-map resource which provides a geo-spatial analysis of results through an interactive online map. All reports and factsheets developed by REACH as part of this shelter assessment are available on the shelter cluster website's Peru 2012 Floods section under: www.sheltercluster.org/Americas/Peru/Peru_Floods_2012/Pages/default.aspx

and/or on the REACH website under: www.reach-initiative.org/countries/peru

1.2. Assessment Methodology

The assessment was conducted between the 25th June and 06th July 2012 by the shelter cluster team with the support of REACH assessment and DB/GIS facilitators, based on the following Terms of Reference:

Emergency	Natural Disaster √	Conflict ☐	Complex Emergency ☐
Sector	Shelter	**Cluster Lead**	Peruvian RC / IFRC
Country	Peru		
Regional Focus	Loreto Department / Province and Districts TBD on location		
Assessment Timeframe	20.06 – 06.07.2012		
Description of Context	Intense precipitation events across Peru have caused floods and landslides in many regions, affecting over 800,000 people throughout the season. The area with the largest number of affected population in the country is the Department of Loreto, with over 250,000 people affected. The Amazonas and Marañon rivers reached record levels and submerged entire communities for months. The Global Shelter Cluster activated a cluster presence in Loreto to ensure that the shelter needs are established and humanitarian actors respond to any shelter gaps in the field in a coordinated and relevant manner. IFRC as cluster lead will be providing support to carry out a detailed shelter assessment, develop a shelter strategy, and undertake advocacy activities on behalf of the shelter cluster. In this framework REACH will second an assessment and data management team in order to facilitate an inter-agency assessment.		
Main objective	Facilitation of an inter-agency assessment focused on the impact of floods and landslides in the shelter sector in selected priority areas supporting the identification of early recovery needs.		
Specific objectives	***1.*** *Completion of a rapid shelter assessment that provides key figures and information on the needs of flood-affected communities in both the short and medium term to inform a relevant and timely humanitarian response;* 2. Review of institutional capacities and cross-cutting themes relevant to the shelter sector in support to the development of a coordinated shelter support strategy; 3. Mapping and sharing of shelter related data at the field level to support a planned and coordinated humanitarian aid response in the region.		
Data Sources	PRIMARY DATA COLLECTION: Household Questionnaires, Focus Group Discussions (Emergency Centres), Key informant[s] Questionnaires (Rural areas only). SECONDARY DATA COLLECTION: INDECI, Loreto Regional Government, UNICEF, IOM, NGO Aid actors. REMOTE SENSING: UNOSAT, JRC		
Targeting	Urban Areas: Municipalities of Belen and Punchana, Iquitos City, Maynas Province Rural Areas: Indiana, Belen, Iquitos, Fernando Lorres Districts – Maynas Province & Nauta District – Loreto Province		
Shelter Cluster Resources **REACH Resources**	1x Shelter Cluster Coordinator / 1x Shelter Cluster Coordinator Assistant 1x Assessment Coordinator / 1x Database/GIS Coordinator		
Expected Results	1. Completion of an inter-agency shelter assessment; 2. Contribution through thematic mapping to coordination and advocacy; 3. Contribution through complementary data analysis to shelter response strategy.		
Expected Deliverables	a. In-county presentations of preliminary assessment results; b. Preparation of factsheets and maps; c. Final assessment report.		

The shelter assessment includes four components of data collection and analysis:

1. **Secondary data sources of governments and agencies** which are summarised in the Secondary Data Report that is available on the shelter cluster "*Peru Floods 2012*" section of the webpage.
2. **Household surveys** conducted by the assessment teams in rural and urban/ semi-urban locations.
3. **Key Informant Questionnaires** conducted in each of the communities visited aiming to provide contextual information regarding the impact of the floods at a community level, including eventual displacement information, economic impact of livelihoods, and status of coping mechanisms within the community.
4. Finally, there is the GIS and mapping component which includes (a) the use of satellite imagery to identify informal communities affected in hard to reach or highly affected areas; and (b) the production of static and web-based interactive mapping of all collected and analyzed data.

This assessment focused on urban locations most affected by the floods as well as villages along the primary rivers including the Amazon, Marañon, Itaya, and Nanay rivers. Within the urban areas, the communities of Punchana and Belen were selected based on the fact that these represent the poorest and most vulnerable municipal localities in the city of Iquitos which were affected by the rising waters for a period of multiple months. In rural areas districts were selected based on flood extent maps prepared by the Loreto regional government as well as risk maps prepared by INGEMMET (Geological Institute). The selection of locations was further cross-checked against district level data on flood impact consolidated and managed by the regional office of the Civil Defence Institute (INDECI).

In order to ensure that the scope of the assessment was sufficiently wide so as to be as representative as possible of other nearby districts and provinces, villages were selected along multiple primary rivers. Given the significant size of the Loreto region, and the limitations for travel only by means of boats along rivers, villages were selected within zones created by taking into consideration factors including distance from Iquitos and distance from the primary river[s]. In this way a total of 4 zones were created with a sample of villages being selected each zone, ensuring that villages both distant from, and close to, the river were assessed.

In total, this assessment included 1.319 household surveys (excluding data errors representing ca. 7% margin) representing over 7.600 affected persons, and an additional 44 focus groups with community representatives. The data collection tools included socio-economic as well as technical assessment information, with the aim of informing actors both on the impact and needs in terms of shelter as well as on community coping mechanisms as well as additional risk factors associated with the impact of the floods on WaSH, health, and economic activities. This ensured that the information would be representative of the broader issues while also providing local-level knowledge for those implementing the projects.

A further village was added in an area considered by the COER as having sustained only limited flooding at the height of the emergency. This village, in the Iquitos District along the Nanay river was added primarily as a control village for the purpose of confirming data relevance.

Transportation challenges unfortunately rendered more remote areas across the Loreto region inaccessible to the assessment team.

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 Shelter Cluster at https://www.sheltercluster.org/Americas/Peru/Peru_Floods_2012/Pages/default.aspx and the REACH portal of IMPACT Initiatives: http://www.reach-initiative.org

1.3. Conclusion and Recommendations

1. **Given the strong capacity of communities to deal with their shelter needs, the focus of assistance programmes should be on livelihood recovery and support to reduce the vulnerability of households on single source income streams (diversification and/or DRR), alongside a component of shelter materials distributions to those households with shelters that experienced the greatest damage.** Given the fact that the floods ended some weeks prior to the assessment period, most families had undertaken activities of their own means or with external support to manage their immediate shelter needs. At this time therefore, a focus on livelihood recover and vulnerability reduction would have a greater impact, although a strong shelter component should be mainstreamed for the most vulnerable families.

2. **Reconstruction and rehabilitation works should as best as possible incorporate disaster risk reduction components.** Given the strong resilience shown by households across communities to tackle reconstruction and recovery efforts of their own accord, any programmes directly supporting shelter reconstruction efforts should ensure that communities are informed on 'build back better' techniques as well as given information on how to manage adaptations to both their individual shelters as well as wider community in order to reduce the risk of damage in future flooding events.

3. **Government-led relocation programmes should be supported to ensure relevant targeting of households living in informal communities in high flood-risk or no-build areas.** Given the existence of regional plans to develop relocation sites in safer areas, the humanitarian community should support and inform the regional government on key areas and households that should be targeted, based on the informed consent of families. In particular, despite the possibility to categorise families by vulnerability based on assessment data, there is a strong argument in favour of relocating on the basis of community vulnerability rather than on the basis of family vulnerability alone – thus avoiding that the lots emptied by relocated families are taken over by other families. The humanitarian community could further participate in the process aiding information exchange and monitoring implementation from a protection perspective.

4. **District Authorities should be supported to develop their response and assessment capacities in order to make better use of regional emergency decisions aimed at providing response and recovery support**. Despite efforts of the regional government and COER to provide assistance to affected provinces and districts, a significant capacity gap appears at the lower administrative levels, especially within the technical departments (*secretarias técnicas municipales*). This affects both the collection of critical data in order to understand the impact and extent of damage, as well as recovery efforts such as ensuring the rehabilitation of schools and health centres critical in early recovery efforts. Such capacity gaps will impact the regional government's ability to make effective use of national emergency funds given the lack of substantiating data linked to their requests. This particularly affects efforts by the Ministry of Housing in their ability to ensure that funds or resources are equitably channelled to the most affected areas.

5. **High risk areas need to be identified and clearly demarcated and communicated to those affected**. Moreover, any program that addresses reconstruction and rehabilitation ought to adhere to risk boundaries in an effort to improve disaster risk reduction and resilience to future water-related events.

6. One of the most often mentioned issues mentioned by communities hit by flooding was the protracted length during which communities were often isolated in their homes. Overall, floodwaters were present in the most highly affected areas for two months. The impact therefore on livelihoods in both urban and rural locations beyond the obvious sectors (agriculture for example) was strongly felt across many other sectors since members of the household would

be afraid to leave their homes. Therefore any **effective program needs to target livelihood activities with a strong component on diversification of income generation activities and DRR in rural communities, given their current high reliance on agriculture and fishing**.

7. **Water treatment, management of stagnant water, and solid waste management plans are recommended** as complementary programmes for shelter interventions given the high prevalence of illness and disease associated with poor quality drinking water and vector-borne diseases (especially dengue and malaria), as well as a high reported caseload of children with stomach parasites.

8. **Disaster risk reduction and disaster management programmes should be a key component of both long-term development and response/ early recovery programmes.** Communities are aware of the risks faced within their locations and strong grassroots community structures exist that could be used as channels to implement grassroots DRR/DM programmes to further strengthen community resilience.

9. **At least a rapid-needs assessment should be conducted to verify living conditions and basic needs during the emergency or in its immediate aftermath across affected areas as well as in collective centres, to inform emergency aid distribution decision-making.** Throughout the emergency phase support by the regional government and NGOs / Agencies was focussed mainly in the collective centres in which only ca. 5% of the affected people found space. This decision caused unease and tension amongst community members that remained in their homes during the floods (mainly in urban area) as no aid was delivered to them despite the fact that their situation was similar. Moreover, the distribution of assistance was conducted without taking into consideration the real vulnerability conditions of families.

2. Context of the Flood Events 2012 in Peru

Peru experiences regular seasonal rainfall that peaks between the months of December through April and regularly causes flooding in the Amazon River basin. However, a strong La Nina effect in 2011 that lasted into early 2012 created significant hydro-meteorological disturbances that moved through the South American continent from the South Atlantic bringing with it heavy rainfall that in turn caused flooding and mudslides across vast areas of both highland and lowland regions of Peru.

Despite the fact that Peru experiences regular yearly flooding, the intensity and regularity of the heavy rains (see Figure 1 below left) over a 5 month period which started in November 2011 caused water levels in its primary river basins to reach unprecedented levels. As conditions steadily worsened through the first quarter of 2012, 18 of the 24 Departments in the country declared a state of emergency on the 29th of March 2012. At the time of launching the assessment 11 States of Emergency remained in place across 6 departments.

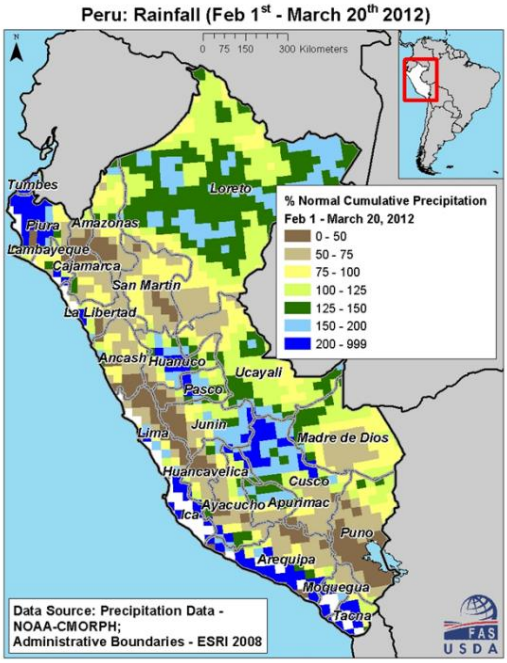
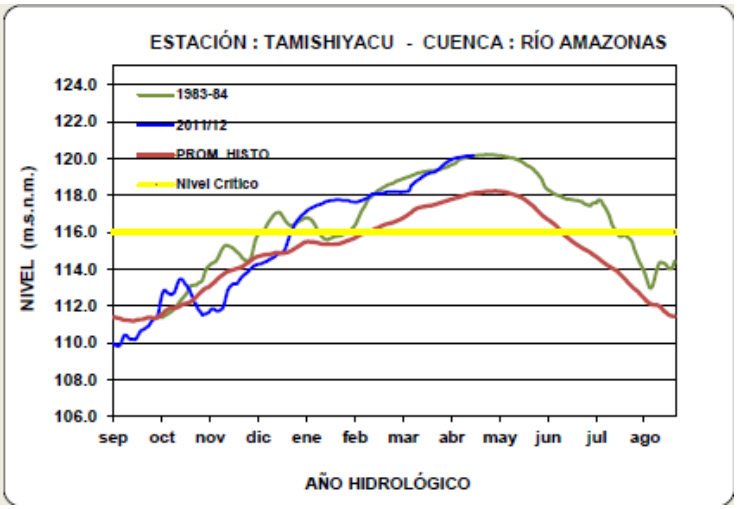


Figure 2 (left): Rainfall as % of normal cumulative precipitation between the 1st February and 20th March 2012 (Source: USDA)

Across the country over 146 emergency events in 15 departments were reported ranging from mudslides, flash floods and hailstorms in highland areas to severe rainfall, flooding and strong winds across the country. Whilst departments across the width and breadth of the country have been impacted, the Northeastern Amazonian lowland regions have been hardest hit given their location in the lower echelons of the catchment areas of a number of major rivers including the Huallaga, Ucayali, Amazonas and Marañon rivers which swelled to the extent that water levels in the Amazon basin within the Loreto Department reached a peak of 118,62m (height measured above sea level) on the 20th April 2012; overtaking the previous record of 118,58m last seen in 1986 (see Figure 2 below).

Figure 3 (below right): River height measured in meters above sea level compared to previous established records (Source COER)



Despite the fact that Peru has witnessed unprecedented growth of around 9% since 2008, mainly based on the export of natural resources significant economic disparities still exist across the country leaving more than half of the population below the poverty line. Departments without mineral resources remain reliant on traditional agricultural practices and have progressed at a much slower rate whilst at the same time being most vulnerable to natural hazards. The recent floods particularly hit those

departments much lower on the human development index than the Peruvian average.[1]

Data from the region indicated that 833.779 people have been affected across Peru as per the National Institute for Civil Defence report of 1st June 2012. Across the country's 24 affected Departments, Loreto accounts for 34% of the affected population or 280.771 individuals. Although flood levels had slowly started to recede since the end of May, an estimated three quarters of the affected population in Loreto is thought to be still facing shelter-related issues. Field reports indicated that families found shelter either within their communities through emergency means or at central evacuation / emergency centres Loreto's regional capital – Iquitos. Emergency centres have since been closed. At the height of the displacement an estimated 15.000 families were reported as having sought shelter in such centres.

The Humanitarian response in this region through governmental bodies and international agencies was focussed strictly in supporting displaced population in collective centres through basic services (water, sanitation, health, protection, etc.) and distribution of NFI. Population that stayed in their communities were not included in the provision of these benefits as they were categorised as affected but not "damnificado".

The primary response at the national level has been coordinated by INDECI, which regularly provided updates and reports on the state of the crisis. UNOCHA supported the humanitarian country team (*red humanitaria)* in Peru to activate humanitarian coordination mechanisms. In Loreto, UNICEF was tasked by the humanitarian country team with the coordination of the humanitarian actors linking closely with the primary governmental actors - COER (the regional emergency coordination body) and the regional office of INDECI - to support the response efforts to the crisis. Shelter was identified as a priority sector, and on the 01st June 2012 IFRC was officially requested to activate and lead a country-level shelter cluster in order to identify capacities, gaps and support the advocacy needs in this sector.

Consequently, REACH was requested by IFRC to facilitate an inter-agency shelter cluster assessment as well as providing database and GIS support to the Shelter Cluster. A REACH team[2] was deployed to undertake an assessment in order to inform the shelter cluster and national and international actors and stakeholders on the scale and impact of the floods on shelter. Oversight and support was provided by REACH and the United Nations Office of Satellite Imagery (UNOSAT) from their Geneva offices[3].

The purpose of the deployment and this assessment was to inform humanitarian decision-making and coordination in relation to shelter. 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, whilst key informant discussions were held with communities to understand broader issues. Static maps and a web-map with interactive functions were developed based on key data collected by the assessment to enable any humanitarian stakeholders to quickly reference of the scale and extent of damage across targeted areas, the relief assistance being provided, and various other baseline social, economic and technical information. Further mapping requests from humanitarian agencies can be provided upon request either to the shelter cluster or REACH's GIS unit in Geneva.

[1] DG ECHO Humanitarian Implementation Plan (HIP) *South America*; Dated 07.05.2012 Version 1
[2] Please refer to Impact & REACH overview at the end of this report
[3] Within the United Nations Institute of Training and Research (UNITAR).

3. Assessment Methodology

This section describes the methodology developed and implemented in undertaking the shelter assessment. A sample of affected households across all accessible areas was taken in line with time and resource availability.

This section highlights (a) the overall objectives of the assessment mission; (b) coordination in planning and implementation of the assessment; (c) the general methodology of the assessment including the use of key informant and household surveys; (d) the coverage of the assessment in terms of households and effected areas; and (e) the scale and scope of the assessment.

3.1. Objectives

The key objective of the assessment is to **facilitate an inter-agency assessment focused on the impact of floods and landslides in the shelter sector in selected priority areas supporting the identification of early recovery needs**. Specifically, the assessment aims to inform actors and stakeholders involved in the development of:

- **Relevant and timely early recovery projects** based on identified needs and gaps;
- **Coordination mechanisms** which ensure that most vulnerable communities or groups are provided timely assistance based on GIS mapping outputs; and
- **Response strategies specific to the shelter sector** based on grassroots and institutional capacities and relevant cross-cutting themes identified through key informant surveys.

3.2. Coordination with Clusters, Agencies

Despite the limited presence of humanitarian actors on the ground in Loreto, coordination with key stakeholders and actors was undertaken through the shelter cluster coordinator. As part of the planning for the shelter assessment the shelter cluster team participated in daily COER meetings and specific humanitarian coordination meetings in which the shelter assessment purpose and plans were shared with NGOs and UN agencies active in the region. At this time attendees were: (a) provided with the questionnaires for feedback and input; and (b) requested to identify areas of interest for the assessment. Moreover, these coordination forums were used to get information about past-present-future project activities related to the floods, organisation strategies, funding possibilities for shelter, the type of support being given/ planned, coordination with other sectors, as well as advocacy to work in the shelter sector regarding vulnerability criteria. Participants to these meetings included representatives of the regional civil defence office (INDECI), the Loreto Regional Government, department of health (DIRESA), International Organization for Migration (IOM), UNICEF, Cesvi, Bomberos Unidos, , Plan International, as well as the Peruvian Red Cross and local stakeholders.

Local institutions were also directly engaged in support of the shelter assessment – including the Instituto de Educación Superior Tecnológico Privado *Reyna de las Américas*, and the International Cooperation Department (*Oficinas Cooperación Internacional)* of the Loreto Regional Government.

At a global level, coordination was done with the humanitarian country team lead by INDECI and OCHA, including organisations and agencies as Coopi, Care-Peru, UNFPA, IFRC, PRCS, Welthungerhilfe, Predes, etc. through direct meetings or distance information sharing. It was also contacted the Ministry of Housing and donors.

3.3. General Methodology

The shelter assessment includes four components of data collection and analysis. First, there are the secondary data sources of national and regional government and agencies. Second there are the household surveys that serve as the backbone of the assessment. Thirdly, key informant discussions were held in the communities visited. And finally, there is the GIS and mapping component which includes static and web-based interactive mapping of all data collected, collated

and analyzed. The use of these different data collection means further facilitates the cross-verification of field information, which was conducted as part of the analysis.

Secondary data: The REACH team reviewed available data related to the flood impact at both national and regional levels as well as assessments conducted by other agencies and flood impact mapping conducted by the Loreto regional government. Moreover, the team reviewed available institutional information related to the shelter sector. The secondary data report produced as an output of this review was further verified and checked by ACAPS.

Household surveys: The REACH team designed a household survey for households located in flood affected areas with the support of the shelter cluster coordinator. This included demographic information on the households, socio-economic household data, as well as a technical assessment of the shelters in which respondents to the survey were currently residing. *See Annex 1* for the assessment template. The purpose was to generate specific data to inform on the needs and type of projects required, and to assess the level of vulnerability of households affected. In each rural village selected, household surveys covered at least 30% of the village population.

Key Informant surveys: Key Informant questionnaires were designed to generate discussion about the impact of the floods at a community level across sectors including shelter. The information generated by these questionnaires aims to inform actors on how communities have been affected, what kind of priority needs the community identifies, and how support can best be provided or targeted. *See Appendix 2* for the questionnaire template. Key informant questionnaires were developed for the participation of community leaders; both formal (in the majority of cases persons such as the *teniente gobernador)* and informal (in the majority of cases the *presidente de la calle* / street committee president). The identification of key informants was undertaken upon arrival to any given community, where the team would introduce themselves and the purpose of the visit to the community leader. At this time the community leader would collect other members of grassroots committees to participate in the interview. As far as possible, at least 4 persons were asked to be present at the key informant interviews.

GIS and mapping: Multiple scales of mapping have been undertaken to inform the shelter assessment in the planning and implementation stages, to support the dissemination of data collected by the shelter assessment, as well as to support the identification of priority areas; particularly in urban settings. In partnership with a team of technical experts from UNOSAT, satellite imagery was incorporated into static and web based maps. The web-based interactive map is also being made available with data being updated on an ongoing basis (see www.sheltercluster.org).

3.4. Assessment Area

Despite the fact that multiple locations across the country could be considered as areas of priority for a shelter assessment, the focus of the humanitarian coordination actors at the national level has been on the region of Loreto. In large part this is due to the significantly larger scale of the numbers being reported from the area. While Loreto does not match with regions such as Puno or Piura (other highly affected regions identified in the Secondary Data Review Report)[4] in terms of number of shelters collapsed, at the national level the concern is that Loreto has over 60.000 affected shelters in combination with over 200.000 individuals categorized as *damnificadas* or who lost everything, which is significantly higher than any other region. Moreover, authorities in highly affected regions such as Puno are said to have responded in a more rapid manner in comparison to those in Loreto where the information flow within the region and thus subsequent response was much slower. This greater capacity at the regional level in Puno is considered to have mitigated the impact of the events, one that was not available to the populations in Loreto living under the impact of floods for a period of multiple months without recourse to aid and support given a much lower regional capacity to collect, funnel and consolidate information from the field. Finally, actors observed that the criteria used to classify shelters in the INDECI reports for Loreto were not standardised and not understood by all actors, thus in reality potentially masking a much

[4] See REACH/ Shelter Cluster *"Secondary Data Review Report, 2012 Flood Events, Peru"* June 2012

greater impact in terms of the shelter needs on the ground in Loreto. Based on this information provided by the both Redhum and UNOCHA the shelter assessment team chose to retain the original focus on Loreto.

Given the logistical challenge of getting to points across the Loreto region by boat from the main point of arrival of Iquitos, it was decided to focus the assessment in affected districts with the greatest population density within a reasonable travel distance from Iquitos.

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

1. Affected by the floodwaters;
2. Communities located in areas identified as acutely or highly vulnerable to flooding; and
3. Districts with a population of above 20.000 individuals (2007 census data projected for 2012).

The process for selecting villages within targeted districts was facilitated by the use of three primary sources of information:

1. Flood extent map produced by the Loreto Regional Government – *Mapa de Inundacion del Departamento de Loreto* (see Annex 3);
2. Critical 'at risk' zones produced by INGEMMET – *Mapa de Zonas Criticas, Region Loreto* (see Annex 4); and
3. Vulnerability risk map produced by INGEMMET – *Mapa de Susceptibilidad a Inundaciones y Erosion Fluvial, Ciudad de Iquitos y Alrededores* (see Annex 5).

Based on the limited availability of other data, the team further met with the key coordinating agencies, COER[5] and UNICEF (as the co-lead agency for humanitarian coordination) as well as IOM and PRCS. In particular, these actors were asked to point out the following:

- Most affected areas;
- Communities that had received the least amount of support; and
- Are considered to be the most vulnerable.

Within the Iquitos area, it was decided to focus on two areas which had been identified as being amongst the hardest hit due to the high risk locations of shelter and high vulnerability of families given (a) a high population density; and (b) high level of poverty. In rural areas, areas with highest vulnerability to flooding and of highest floodwater were identified and categorised in zones comprising of concentric rings of 10km from the urban centres of Iquitos and Nauta. A sample of villages were selected from each zone based on varying degrees of distance from the main river channels.

Evacuation centres (*Albergues)* were not assessed given that these were being closed at the request of the Regional Government in order to minimise the disruption already caused to the schools' academic years. At the time of launching the assessment a total of 6 of 119 evacuation centres that had existed through the emergency remained in existence and had been well covered in terms of support by humanitarian agencies. By the 2nd of July all collective centres were closed.

[5] The Loreto emergency was categorized as a level 3 emergency, designating the regional government and in turn the COER as the primary response and coordination authorities.

Generalizing 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 decision was based on the fact that at the time of launching the assessment limited data on flood impact was available to the assessment team beyond informal recommendations by primary actors in the region. Therefore, this assessment does not include a statistical analysis. Nonetheless, given the efforts to select villages by taking into consideration factors such as vulnerability to flooding, distance from river channels, and distance from an urban centre, the assessment is considered sufficient for results to be considered indicative of the areas around Iquitos – particularly for those in urban municipalities where a greater sample size was collected. Agencies are encouraged to verify all information.

3.5. Training, Logistics and Human Resources

Although the primary aim of the shelter assessment was to be undertaken in an inter-agency manner, the limited availability of human resources and general capacity of the key aid actors in Loreto meant that the assessment depended highly on the PRCS which had both the resources and network to mobilise the necessary volunteers.

The shelter assessment formally began on the 25th of June 2012 with the support of the PRCS which provided volunteers and logistical support in terms of office space, collecting quotations for boats, etc. Given the experience of the PRCS volunteers in the conduct of surveys, a short half day training was given at the PRCS office which included a detailed review of the questionnaires and key informant questionnaires, followed by a half day in the municipality of Punchana with volunteers being directly supported in the field by the assessment team. A brief training session was also conducted on using GPS enabled cameras, and the requirements of photography for the web based map.

The PRCS volunteers were selected as the team leaders for the other volunteers that joined the survey on an ongoing basis, based on their availability to conduct full day surveys. Unfortunately the greatest challenge faced was in the identification of volunteers that could participate for full days and over a multi-day period. With universities being in their period of exams, and a limited on-the-ground capacity of NGOs active in the area, the assessment relied on an ad-hoc system in which those who could participate would meet in the early morning for a quick training, then being supported in the field directly by their PRCS team leaders.

Data collection was completed on the 05th of July. Data entry was completed on the 06th of July.

3.6. Scope of Assessment

The table below show the areas in which Household and Key Informant surveys were conducted (a geographical representation of the table can be seen on the subsequent page below).

Province	District	Village Name / Urban Municipality	# of Surveys	Province	District	Village Name / Urban Municipality	# of Surveys
Maynas	Mazan	Santa Maria de Fatima	26	Loreto	Nauta	Firmeza	18
	Belen	Santa Martha	24			Nuevo San Martin	23
		Cabo Pantoja	17			Lisboa	9
		Mazanillo	13			Bagazan	27
		Canta Gallo	21			Sucre	36

		Monte Verde	13			Miraflores	42
		Municipalidad de Belen	339			02 de Mayo	18
	Fernando Lorres	Muyuysillo	12			Palizada	38
		Timareo III Zona	7			Pampa Caño	9
		Terrabona	12			San Pedro de Tipishca I	23
		Centro America	19			20 de Enero	8
		Indipendiente	19			Santo Domingo	3
		Pueblo Libre	7			Las Malvinas	4
		Nuevo Amazonas	11			Las Palmas	8
		Tapira Nuevo	15			Grau	21
		Huaysi	7			**TOTAL**	**287**
		08 de Mayo	7				
		Mangua	10				
		Villa Asis	14				
	Iquitos	San Jose de Lupuna	17				
	Punchana	Municipalidad de Punchana	422				
		TOTAL	**1.032**				

Table 1(above): Household Data Collected by Location

Province	District	Village Name / Urban Municipality	Province	District	Village Name / Urban Municipality
Maynas	Belen	Santa Martha	Loreto	Nauta	Firmeza
		Municipalidad de Belen *Caserio Nuevo Campeon* *Caserio Nuevo San Jose* *AAHH Pueblo Libre* *AAHH Prolongacion Santa Rosa* *AH 28 de Julio*			Nuevo San Martin
	Fernando Lorres	Monte Verde			Lisboa
		Timareo III Zona			Bagazan
		Terrabona			Sucre
		Centro America			Miraflores
		Indipendiente			02 de Mayo
		Pueblo Libre			Palizada
		Nuevo Amazonas			Pampa Cano
		Tapira Nuevo			San Pedro de Tipishca I
		San Jorge			20 de Enero
		Muyusillo			Santo Domingo
		08 de Mayo			Las Malvinas
		Mangua			Las Palmas
	Iquitos	San Jose de Lupuna			
	Punchana	Municipalidad de Punchana *AAHH Nueva Venecia* *AAHH Ivan Vasquez Valeria* *AAHH Daniel Alcides Carrion* *AAHH Pilar Nores de Garcia (Ampliacion)* *AAHH Pilar Nores de Garcia (A,B,C, y D)* *AAHH Nuestra Señora de la Salud* *AAHH Delicia Manzur Khan*			

Table 2 (above): Key Informant Data Collected by Location

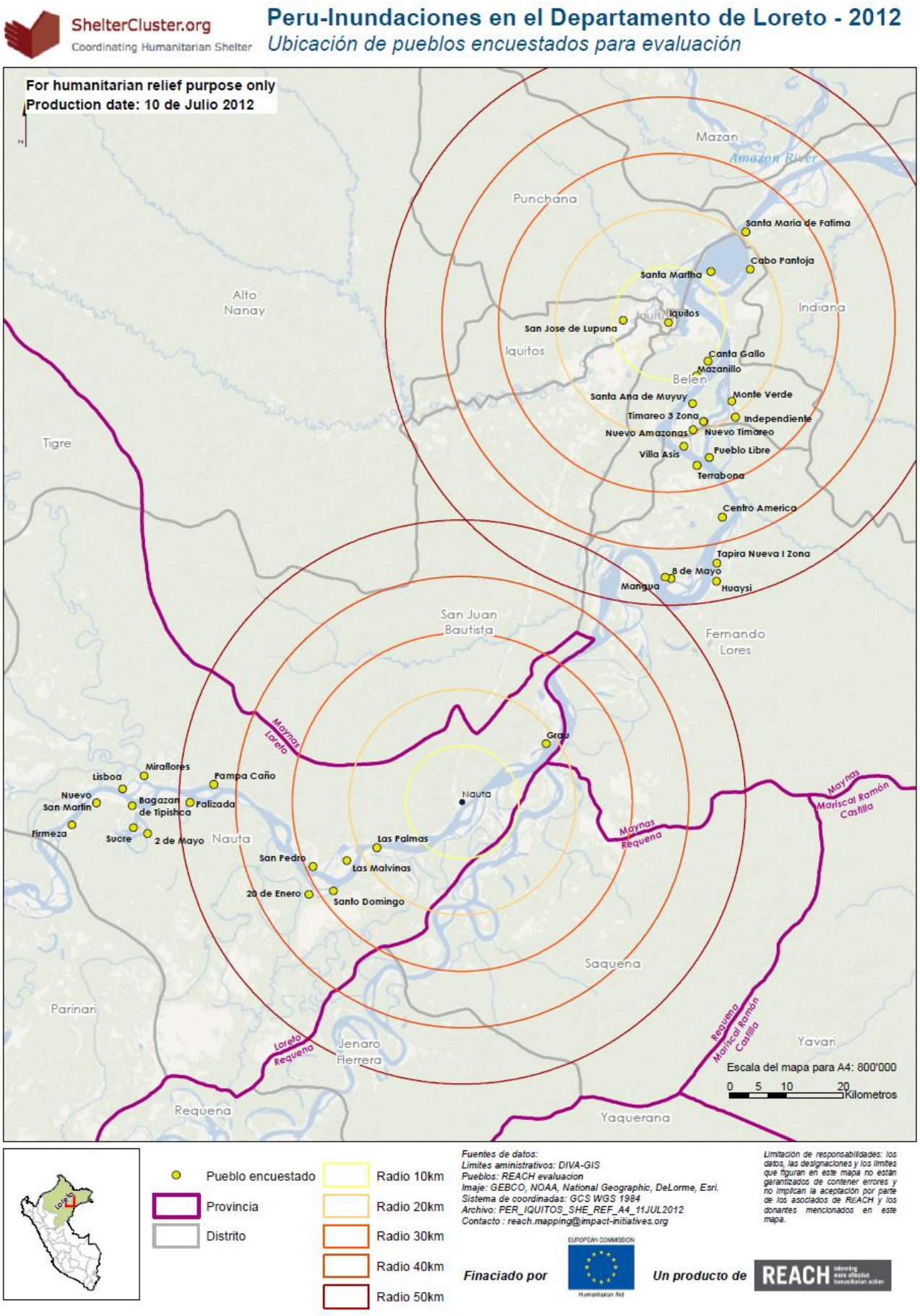


Figure 4 (above): Geographical Coverage of the Assessment Conducted, Including Demarcation of Zones

4. Assessment Results

This section includes the results from the household surveys and the Key Informant Questionnaires. The analysis highlights the summary level information, with detailed breakdowns accessible through the database subject to the removal of any confidential information.

Summary information is complemented by a sub-categorisation by rural or urban / semi-urban locations wherever possible. It is worthwhile noting that the information included here has some variations across sites. This is due to the fact that the urban-rural nexus means that the scale of impact on communities differs. For example, 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.

This section first considers 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. The type of support needed is highlighted. Finally, community based issues from the Key Informant Questionnaires are summarized to support the quantitative analysis with qualitative information.

As part of a global effort to standardise information and indicators within the shelter sector (with the aim of improving transparency, impact monitoring, and cross-country / thematic comparisons) a set of shelter-related indicators are in the process of being developed. The final section of the results section provides statistics for some of the indicators as far as the data allows.

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 - rather, the assessment is designed to be useful for a broader audience. Where it is of value, specific case studies are identified which may differ from the summary information.

In addition, the database of information is available to interested parties, with confidential information removed where necessary.

For more information see: www.sheltercluster.org

4.1. Demographic Characteristics

Key Statistics

- Average number of persons per family; **5,79** (**5,97** Urban/ Semi-Urban areas; **5,55** Rural areas)
- Average male to female ratio; **3,02 : 2.77** (**52%** male; **48%** female)
- Average number of families per community in rural areas: **55** [1]
- Average number of families per shelter in rural areas: **1,35**
- Average number of families per shelter in urban areas: **1,45**

A total of 1,319 households were surveyed as part of the household assessment. This represents over 7.600 individuals. The age profile of respondents highlights not only the relative young nature of the population in general, with **46%** being below the age of 15 years of age, but also the number of children that have directly been affected. 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 can be identified.

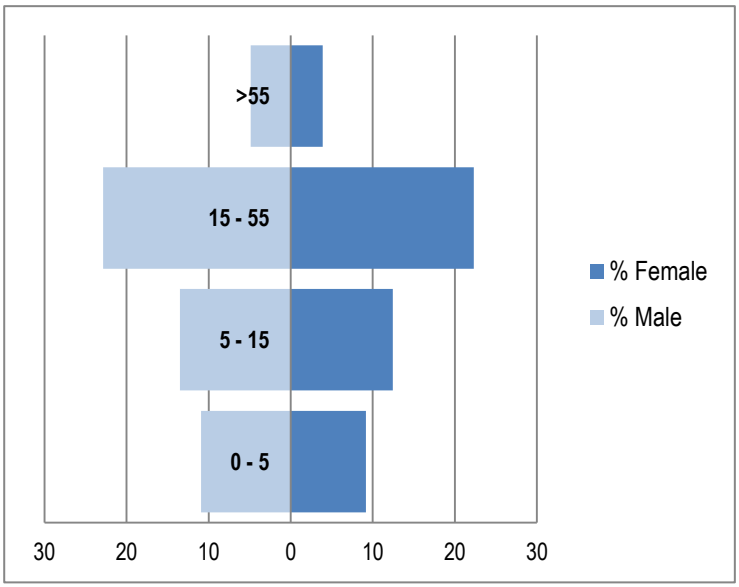
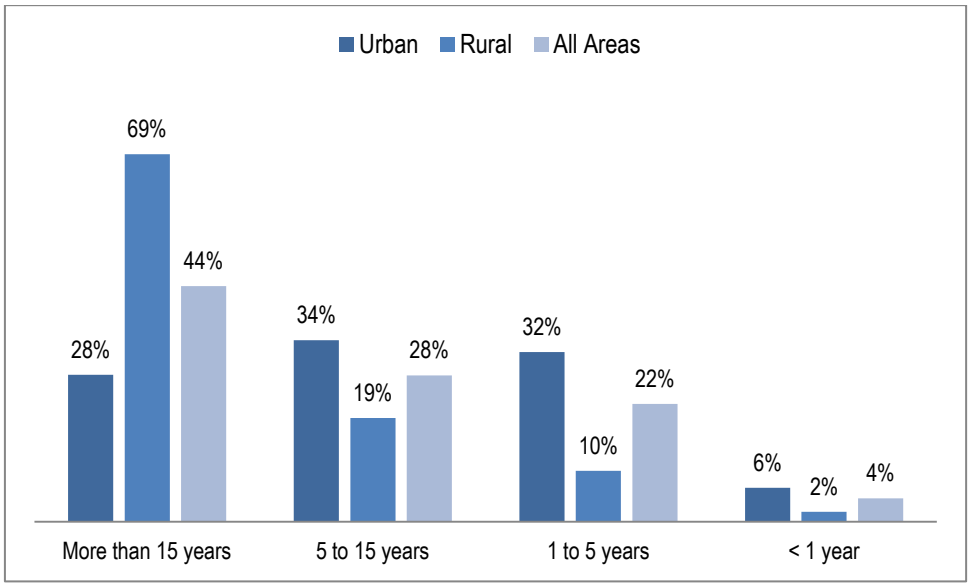


Figure 5 (right): Age Profile of Surveyed Population

On average over **70%** of families have lived in their locations since more than 5 years, which likely indicates the existence of strong resilience mechanisms both at the community and household level, given the prevalence of regular flooding – reported by **80%** of households.

A strong urban-rural difference exists within this data, with **62%** of families having lived for over 5 years in urban areas compared to **89%** of families in rural areas. Though one could expect such differences, it does indicate a higher likelihood of impact in urban communities where families have had less time to develop coping mechanisms. Moreover, given that in the urban municipality of Punchana there exists a relationship between the length of stay and proximity to the river (see map on pp.16 below) – i.e. that new arrivals are living closer to the river –, there is further evidence that vulnerability is higher amongst households who have recently settled in a given area.

Figure 6 (below, next page): Average Length of Stay of Families in Locations at Time of Flooding



Vulnerability

A large number of those affected can be considered vulnerable households. **16%** of families surveyed were single-headed households, pregnant and lactating women are present in **19%** of all affected households as well as mentally and/or physically disabled (**3%**).

	Rural	Urban	AVG
Single Headed Household	9%	22%	**16%**
Male Single Headed HH	65%	46%	**49%**
Female Single Headed HH	30%	52%	**48%**
No Data / Error	4%	2%	**3%**

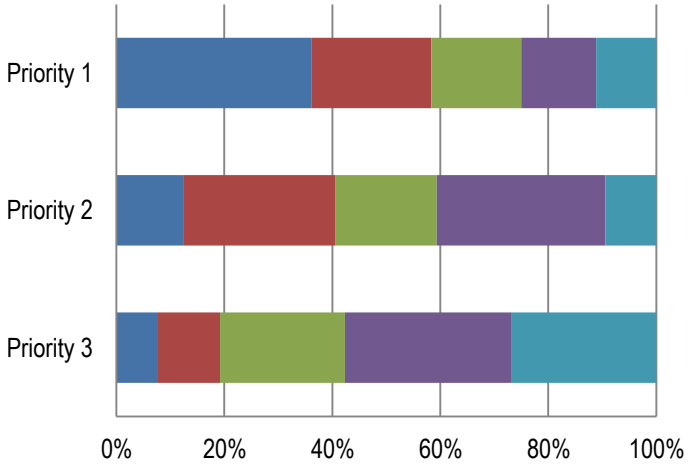
Table 3: Breakdown in % of Single Headed Households

Female single-headed households seem to be slightly more prevalent if compared to male single-headed household in urban areas than in rural areas. These figures should be used as indicative however, as the error margin is likely much higher given that it was found during the first days of the survey that the question was often interpreted by respondents as asking whether there was only one income earner in the family – and would answer "yes" if that income earner was also the head of the household.

In an effort to support the development of a strategy prioritising vulnerable groups, key informant respondents were asked to identify sub-groups within their communities which they consider as being amongst the most vulnerable. Overall, **Single Headed Households and Families without adequate shelter** were ranked highly across communities, along with **families with a large number of dependents** which is appears in second priority.

On average respondents identified that **27%** of the families within their community fit these criteria of vulnerability.

Figure 7 (below): Most Vulnerable Households subset by Priority



	Priority 3	Priority 2	Priority 1
Single Headed Household	7%	13%	36%
Families without Adequate Shelter	11%	28%	22%
Families without Adequate Income	22%	19%	17%
Families with high number of Dependents	30%	31%	14%
Families that lost all their Posessions due to this years Floods	26%	9%	11%
Other	0%	0%	0%

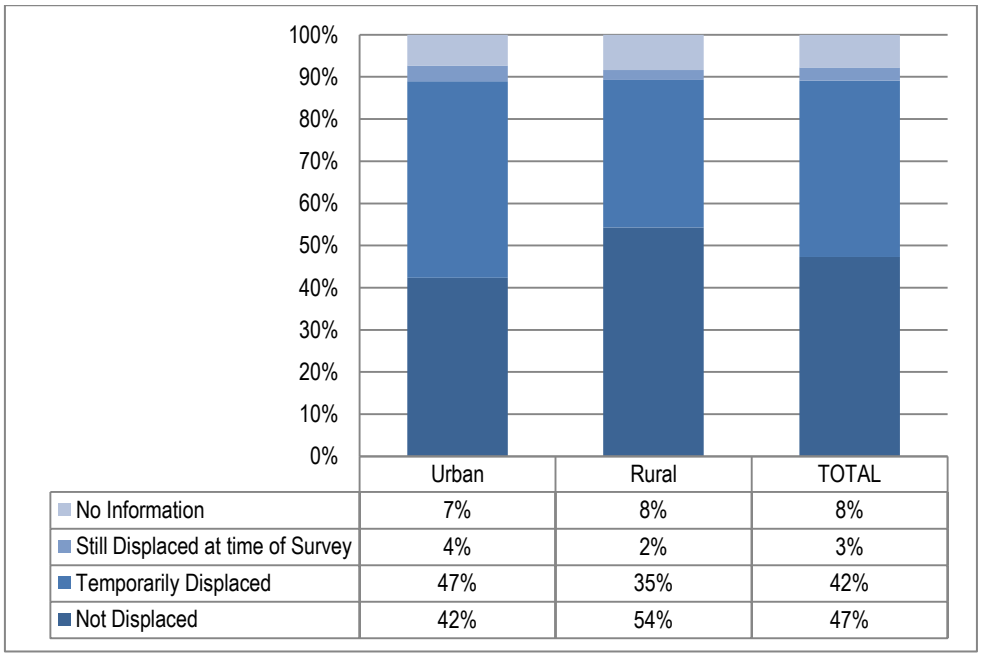
4.2. Displacement

Key Statistics

- % of families currently still displaced as a result of floods: **3%**
- % of communities reporting displacement: **66%**
- % of households utilising evacuation centres: **9%**

Overall, as a result of the floods **45%** of families were displaced from their homes though not necessarily from their communities. Of these displaced families, **3%** still currently live at a location other than their own before the floods. Of the 3% of currently still displaced families, given that the last evacuation centres were closed in the first days of the assessment, **79%** of those still displaced at the time of the survey were living with family members, **12%** in temporary shelters on their own plots, and **10%** indicating other type of living conditions (primarily tents or temporary shelters on land other than own plot) – *for details see Section 4.3 below.*

66% of both rural and urban communities reported that families within their community had been displaced as a result of the floods. In urban areas **100%** of communities reported that displacement occurred; which may be symptomatic of the fact that access to evacuation centres in urban areas from flooded sites was significantly easier given the high proportion of centres in urban zones.



	Urban	Rural	TOTAL
No Information	7%	8%	8%
Still Displaced at time of Survey	4%	2%	3%
Temporarily Displaced	47%	35%	42%
Not Displaced	42%	54%	47%

Figure 8 (above): % of RURAL Communities Reporting Displacement

Displacement Profile

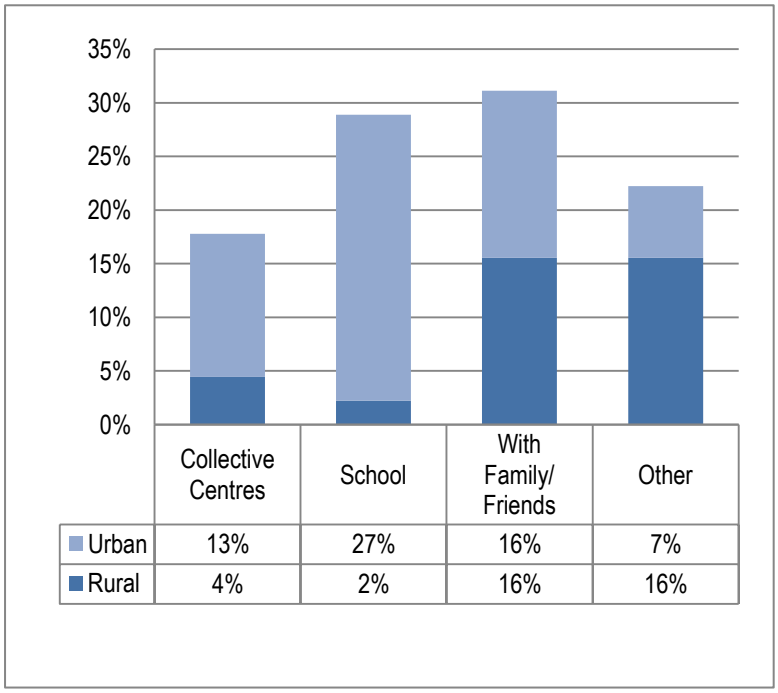
60% of communities reported that the first displacement occurred only after the floods had reached their village, with families leaving on average **27 days after flooding first started**. This generally fits with the statement that was given in which community leaders mentioned that due to the regular nature of floods, families only decided to move when floodwaters reached above the level of their shelter floors – when the floods began reaching record heights.

Of the **40%** of communities in which families left before the floods, on average families left **8 days before the waters reached the level of shelter floors**. Perhaps tellingly, communities in urban locations were more likely to leave their locations prior to the floods, which is probably directly associated to the availability and easier accessibility to centres for evacuees.

	Urban	Rural	TOTAL
Before	9	1	**10**
After	5	10	**15**
Not Sure	1	18	**19**

Table 4: Number of Communities Reporting Displacement Before/After the Onset of Floods; Categorised per Location Type

Figure 9 (below): Destination of Displaced Community Members

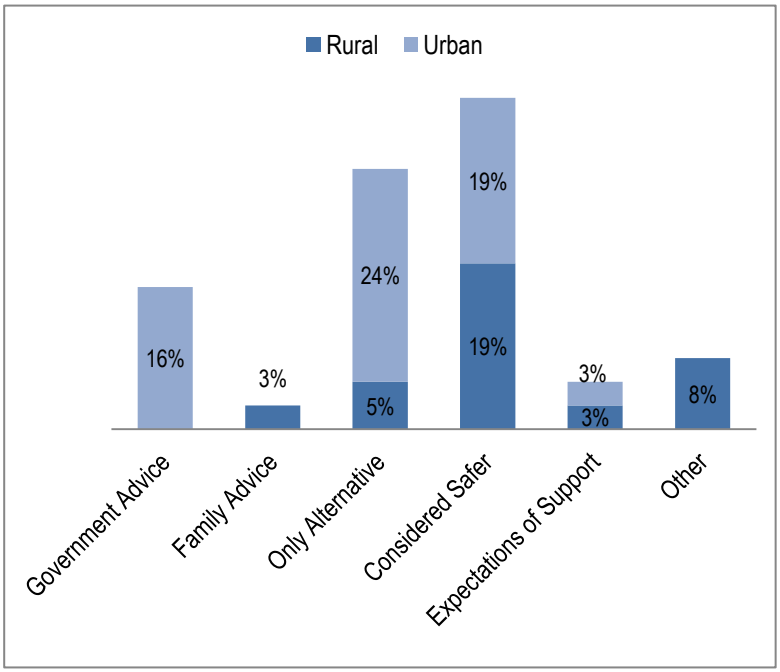


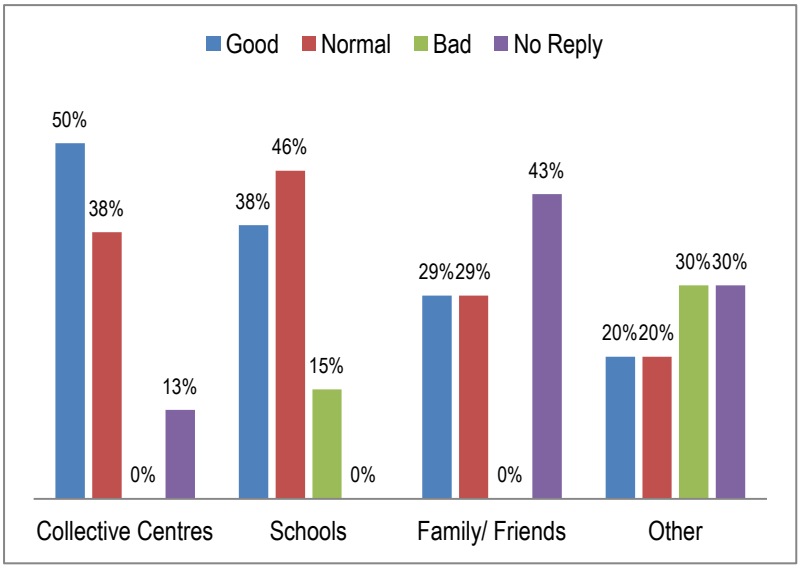
None of the communities reported families going to health centres as their destination during the displacement. As options under "other" the following details were given: *unspecified location within a city* ***40%,*** *higher ground* ***30%,*** *saw mill* ***10%,*** *tents* ***10%,*** *and unspecified* ***10%.***

When asked with what information the decisions were taken to select a given location during the displacement, the primary reasons given were the fact that locations chosen were **(a) considered safer; (b) the only alternative known to the community; and (c) based on government advice (urban areas) or based on a collectively taken community decision – indicated in the graph as "other" (rural areas).**

Figure 10 (below right): Reasons for Selection of Evacuation Site

At their site of displacement, communities generally reported *normal* or *good* shelter conditions with communities mentioning only schools and other locations as locations where *bad* conditions were experienced. Not surprisingly, 'other' predominantly was used by those communities that had evacuated to higher land within the vicinity of their communities; thus explaining the fact that 1/3rd of the respondents indicated bad conditions.



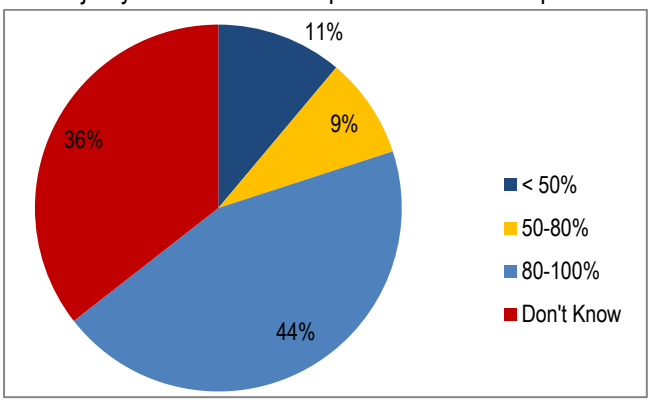


The fact that schools were used as evacuation sites during this year's floods should inform the authorities of the need to equip and prepare the school infrastructure to cope in such emergency situations at those schools closest to high flood risk areas.

Figure 11 (left): SHELTER Conditions Experienced at Evacuation Sites

Returns

The majority of communities reported that most displaced families have already returned since more than 3 weeks.



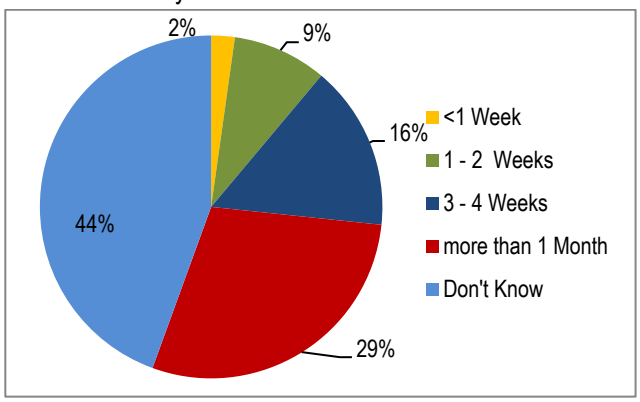


Figure 12 (above left): % of Displaced Families within the Community that have already Returned

Figure 13 (above right): Period in which Returns Occurred

44% of communities indicated that their reasons for returning were linked directly to the desire to protect their possessions and shelters, **36%** reported economic reasons (to restart their livelihood activities), and **20%** reported that they were requested to return.

24% of communities reported that there were still families from their locations that had yet to returned, though few could give any indication as to the timeframe for their expected return. In conversation as to the reasons for their continued displacement, in rural villages mostly livelihood issues were cited – indicating that once the next crop would be harvested (September) the remaining families would return.

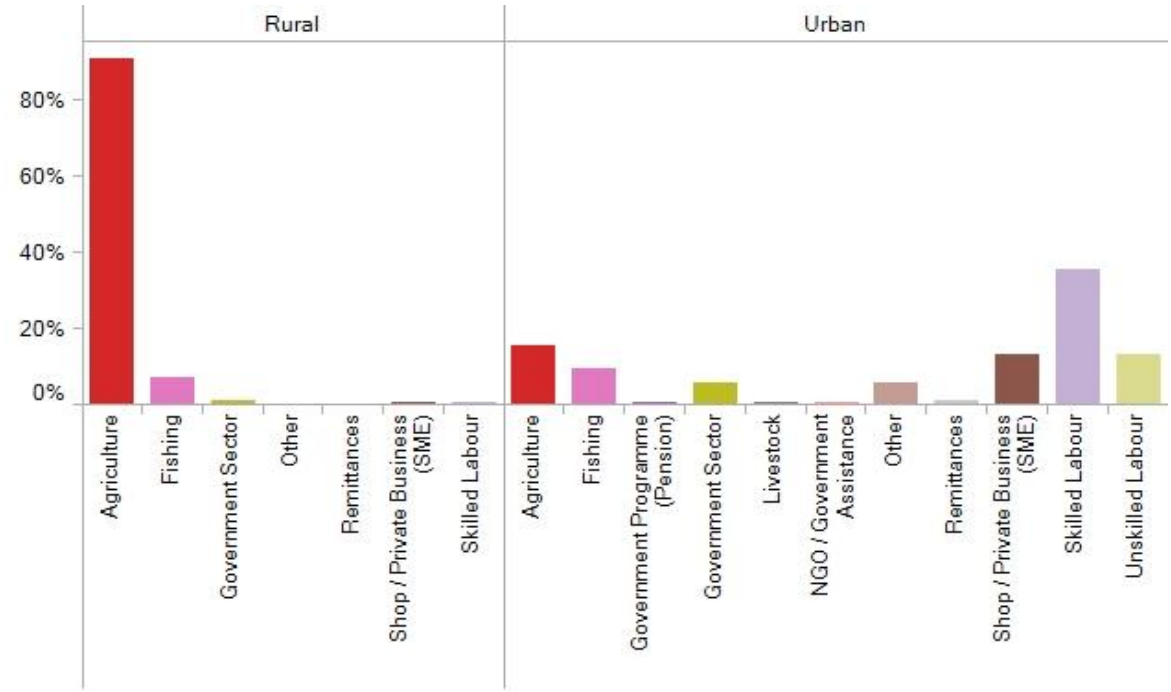
13% of communities reported new families arriving to their village/ neighbourhood with an **average reported increase** of **2,5** families arriving after the floods that had previously not resided there. **20%** of communities reported families leaving their village/ neighbourhood permanently, with an **average of 2,4** families leaving.

4.3. Socio Economic Context

Key Statistics

- % of families with multiple income sources; **30%**
- Average monthly income in Urban/ Semi-Urban areas; **PEN 445 / USD 5,57**
- % of communities reporting livelihoods significantly affected by floods: **69%**
- % of households reporting their primary income source highly affected by floods: **55%**
- Primary livelihood sectors (Rural / Urban): **Agriculture, Fishing / Skilled & Unskilled Labour, Private Activity**

As might be expected, the primary livelihoods of those that have been affected differ across urban and rural areas. Across both urban and rural areas only **2%** of all respondents provided no information on their primary income source, which could indicate not having any income source. In comparison **67%** of households however provided no information in their secondary income category (**84%** in urban areas and **51%** in rural areas).



	Agriculture	Fishing	Government Programme (Pension)	Government Sector	Livestock	NGO / Government Assistance	Other	Remittances	Shop / Private Business (SME)	Skilled Labour	Unskilled Labour
Rural	90,96%	7,01%		0,74%			0,18%	0,18%	0,55%	0,37%	
Urban	15,57%	9,13%	0,67%	5,64%	0,67%	0,27%	5,64%	0,94%	13,15%	35,44%	12,89%

Figure 14: Primary Sources of Income by Location (Urban / Rural)

Primarily households in rural areas indicated that their primary income streams were inconsistent, particularly in Agriculture and Fishing given that in the case of the former part of the harvest is for subsistence purposes and only the excess production is sold, and in the case of the latter catches vary greatly each day.

Activity Primarily Conducted by:	PRIMARY INCOME SOURCE		SECONDARY INCOME SOURCE	
	Urban	*Rural*	*Urban*	*Rural*
Male	63%	36%	6%	19%
Female	14%	4%	8%	5%
Both	17%	42%	3%	12%
No Information	*6%*	*17%*	*84%*	*65%*

Table 5: Household Participants in Primary and Secondary Income Generating Activities

Across both rural and urban locations, over **83%** of families indicated that their primary income source had been affected to some degree by the flooding (**79%** in urban areas and **90%** in rural areas) – with some 10% not able to define whether or not their income had been impacted.

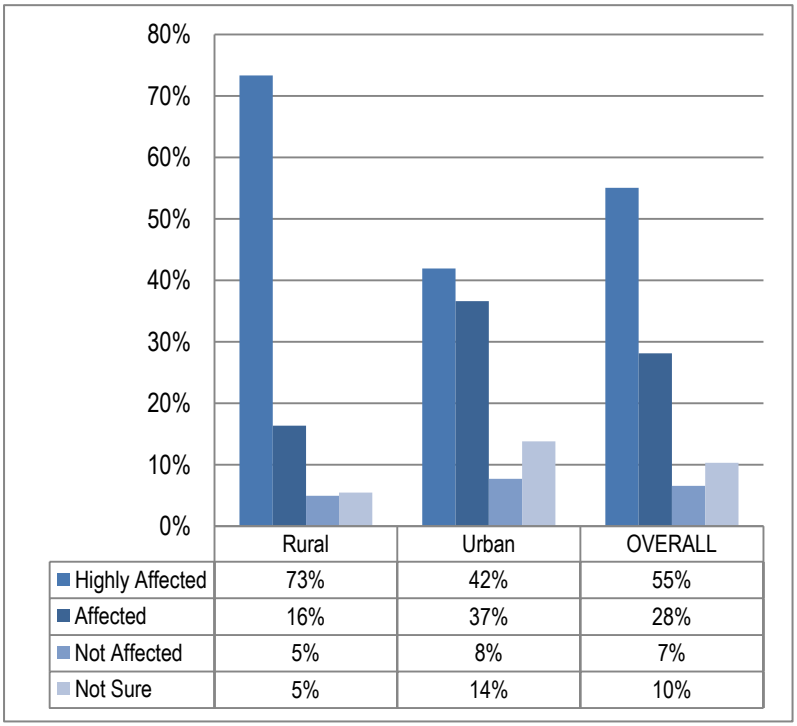


Figure 15 (left): Impact of Floods on Primary Income Source

On average only **30%** of households (**16%** in urban areas and **50%** in rural areas) report having access to a secondary income source. Of the 50% of rural households that indicated having a secondary income source, the sectors mentioned were fishing (**40%**), agriculture (**5%**), shop / private business (**3%**), and livestock and skilled labour (**1%**).

Given that agriculture is highly susceptible to flooding and fishing is noted as a highly inconsistent income stream, there is clearly a strong need for livelihood support / recovery programmes.

In the urban areas, the secondary income sources were limited to agriculture, fishing, and shop / private business. However, almost **60%** of families indicated that their primary income source had been impacted *during* the flooding, but were able to recover to varying degrees once the floodwaters had subsided.

Data on average household incomes in rural areas carried an extremely high error margin due to the fact that families could not necessarily give a monthly value nor could a daily value be simply extrapolated to a monthly one due to the nature of the primary income sources – agriculture & fishing – being subsistence activities. In urban areas however, this error margin is significantly reduced. As such only the urban data is provided here.

The average monthly income in urban / semi-urban areas was reported as **PEN 445,82** or the equivalent of **USD[6] 5,57 per day per family** or given the average family size of 5,79 individuals, **USD 0,96 per person per day.** This would place approximately **54%** of the urban/ semi-urban population questioned at an income level below the poverty rate of USD 1 per person per day (error margin of +/-10% - therefore should be used as *indicative data*).

[6] Exchange rate based on www.oanda.com/currency/converter on 17.07.2012 - 1 PEN : 0,37454 USD

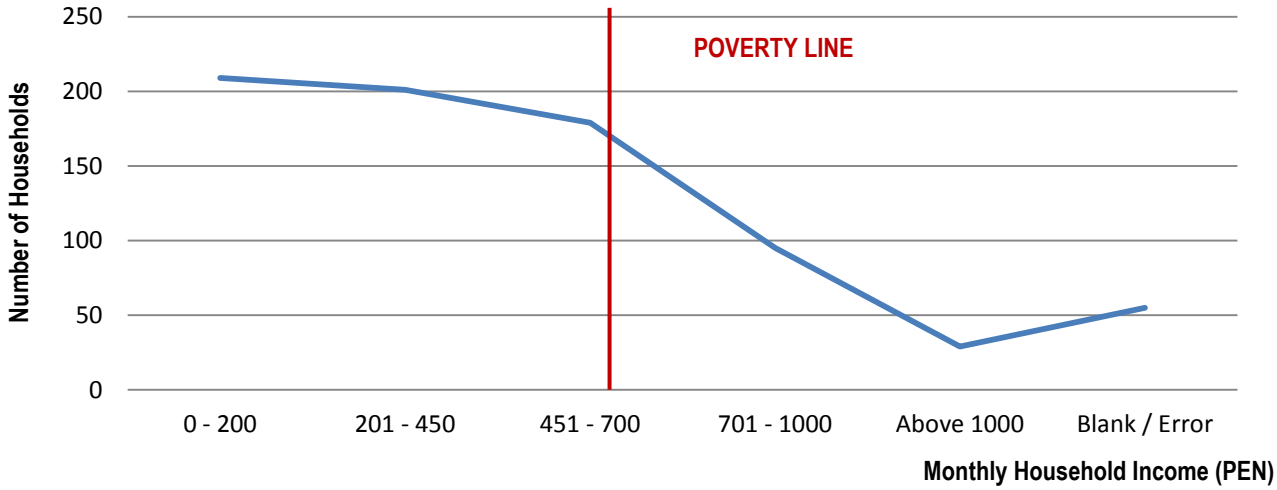


Figure 16: Average Household Income, Poverty Incidence

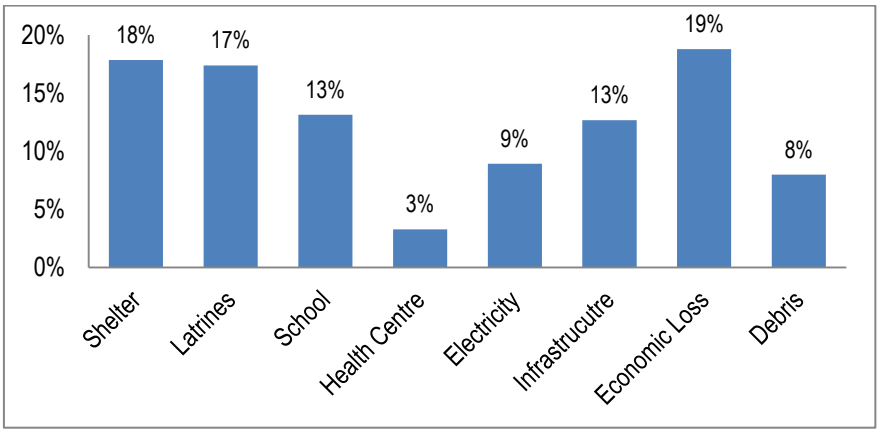
To place these figures into relative terms, families were asked whether their monthly incomes would cover their monthly household expenses. In response to this question, **8%** responded as completely covering their monthly expenditures, **13%** sufficiently, **56%** partially, and **20%** indicating that they experienced regular problems meeting their monthly expenditures with their monthly income. Generally, there was a limited difference in the data between urban and rural settings.

85% of households indicated that their most common expenses were food/ water, **3%** health, **2%** shelter, **2%** education, and **1%** hygiene articles (**7%** provided no information). Respondents were asked to provide information *before* and *after* the flooding, however the margin of change was below 1%, and thus insignificant.

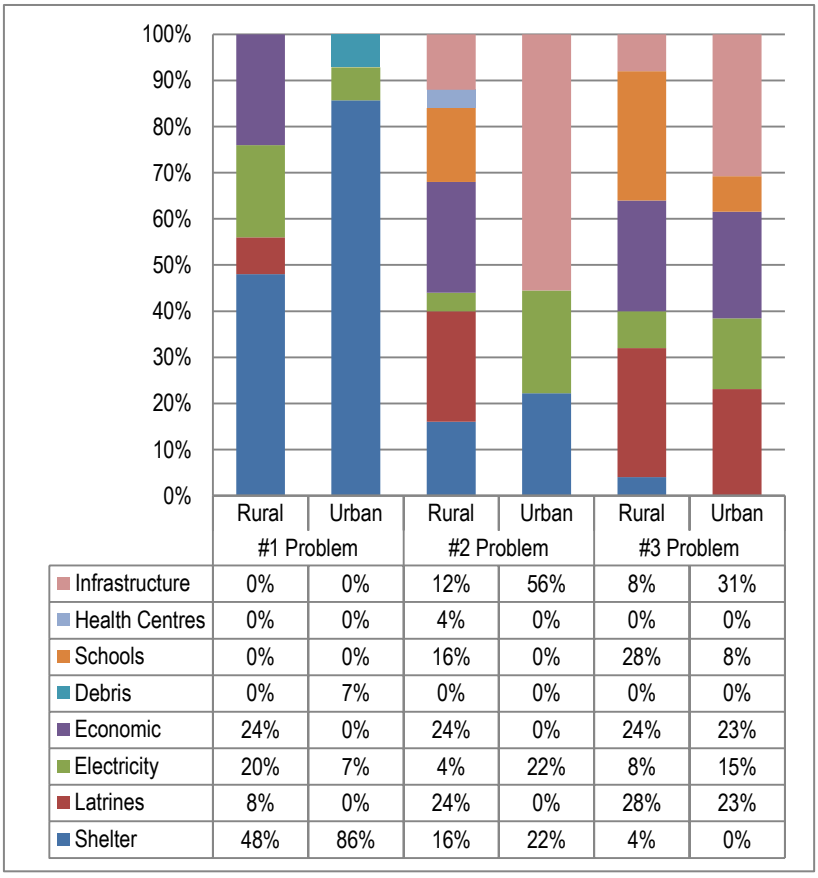
Flood Impact on INFRASTRUCTURE & LIVELIHOODS

When asked about the impact of the floods the categories most often cited by key informants as having sustained damage were **livelihoods, shelters, and latrines.**

Figure 17 (below): Sectors of Community that were cited as having been Damaged as a Result of Floods



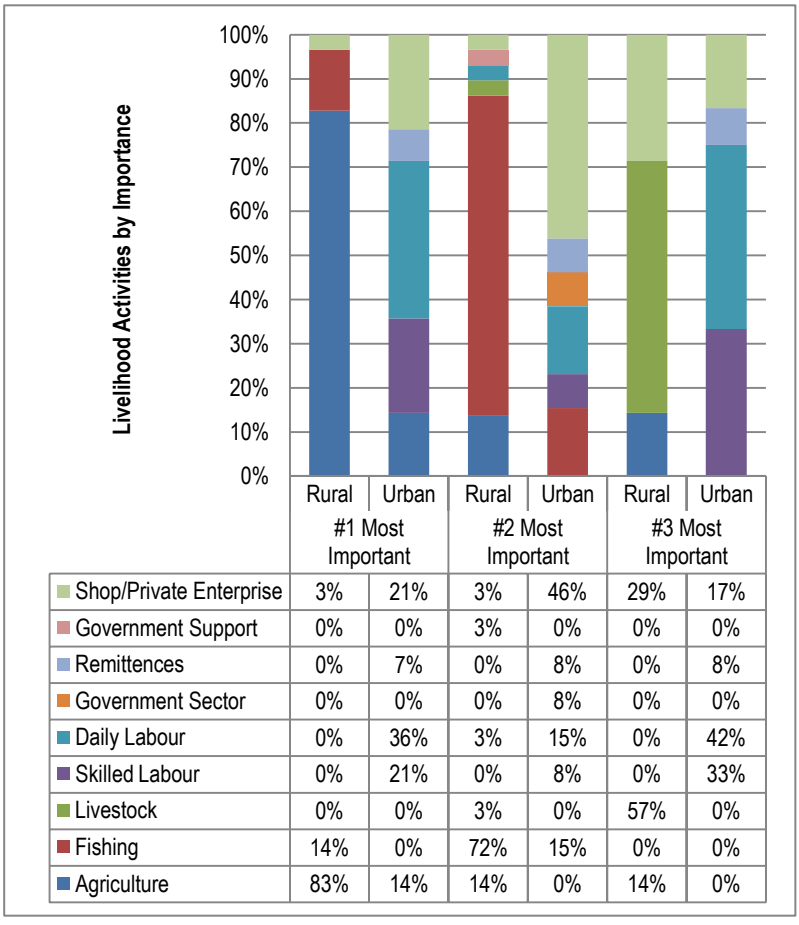
Communities were further asked to report the top three most damaged categories, in which perhaps unsurprisingly **shelters feature predominantly in both 1st and 2nd categories, though significantly higher within the urban context than the rural one. Livelihoods** further appear significantly across all three top priorities amongst rural communities, whilst **electricity and infrastructure** (often associated with elevated walkways or roads/paths) appear significantly in urban areas.



	Rural	Urban	Rural	Urban	Rural	Urban
	#1 Problem		#2 Problem		#3 Problem	
Infrastructure	0%	0%	12%	56%	8%	31%
Health Centres	0%	0%	4%	0%	0%	0%
Schools	0%	0%	16%	0%	28%	8%
Debris	0%	7%	0%	0%	0%	0%
Economic	24%	0%	24%	0%	24%	23%
Electricity	20%	7%	4%	22%	8%	15%
Latrines	8%	0%	24%	0%	28%	23%
Shelter	48%	86%	16%	22%	4%	0%

Figure 18 (left): Top Three Most Affected Categories subset by Location

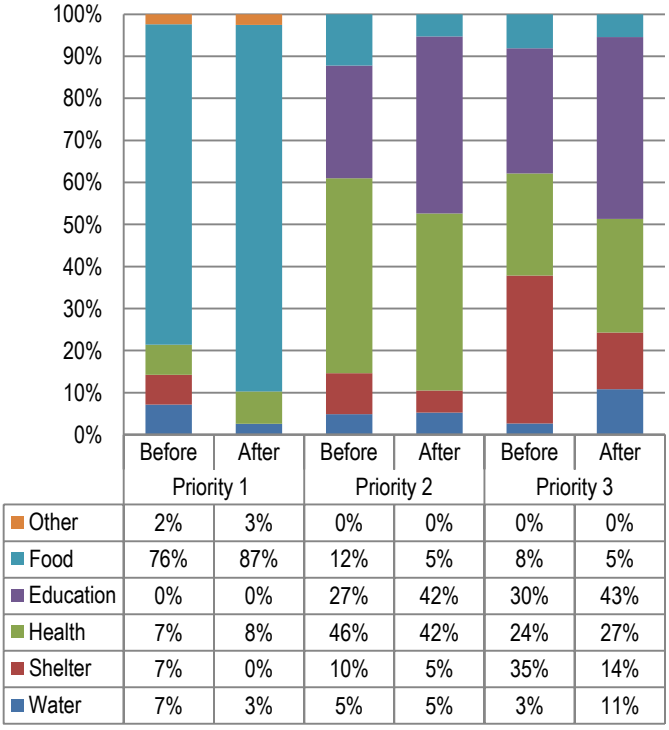
100% of communities reported that their most important livelihood source had been affected **(31%)** or significantly affected **(69%)** by the floods. This remains high at **91%** for the second and third most important livelihoods. However, it is interesting to note that when urban communities discuss the impact on livelihoods relative to other categories / sectors livelihoods feature only in the 3rd priority. This indicates that, despite the fact that livelihoods have been affected, the ability to recover these quickly is likely to be higher amongst urban communities than rural ones. Based on the fact that within urban areas **daily labour, skilled labour and private enterprise activities** account for the top three most important income sources, it is clear that the data substantiates this point.



	Rural	Urban	Rural	Urban	Rural	Urban
	#1 Most Important		#2 Most Important		#3 Most Important	
Shop/Private Enterprise	3%	21%	3%	46%	29%	17%
Government Support	0%	0%	3%	0%	0%	0%
Remittences	0%	7%	0%	8%	0%	8%
Government Sector	0%	0%	0%	8%	0%	0%
Daily Labour	0%	36%	3%	15%	0%	42%
Skilled Labour	0%	21%	0%	8%	0%	33%
Livestock	0%	0%	3%	0%	57%	0%
Fishing	14%	0%	72%	15%	0%	0%
Agriculture	83%	14%	14%	0%	14%	0%

Figure 19 (right): Top Three Most Important Livelihood Activities subset by Location

In rural areas on the other hand **agriculture, fishing, livestock and private enterprise activities** account for the most important income activities.



	Priority 1		Priority 2		Priority 3	
	Before	After	Before	After	Before	After
Other	2%	3%	0%	0%	0%	0%
Food	76%	87%	12%	5%	8%	5%
Education	0%	0%	27%	42%	30%	43%
Health	7%	8%	46%	42%	24%	27%
Shelter	7%	0%	10%	5%	35%	14%
Water	7%	3%	5%	5%	3%	11%

In terms of expenses, communities reported that **food, health, and education represented their most important expenses following the floods**. Across these categories there were only minor changes between the period before and the period after the floods. Note however, that this data section may have a larger error margin in that community members were not always able to determine how their expenses changed. Nonetheless, despite best being taken as indicative data, it is backed up by the information collected at the household level in which food and health represented the greatest area of need.

Figure 20 (left): Top Three Highest Expenditure Categories subset by Location

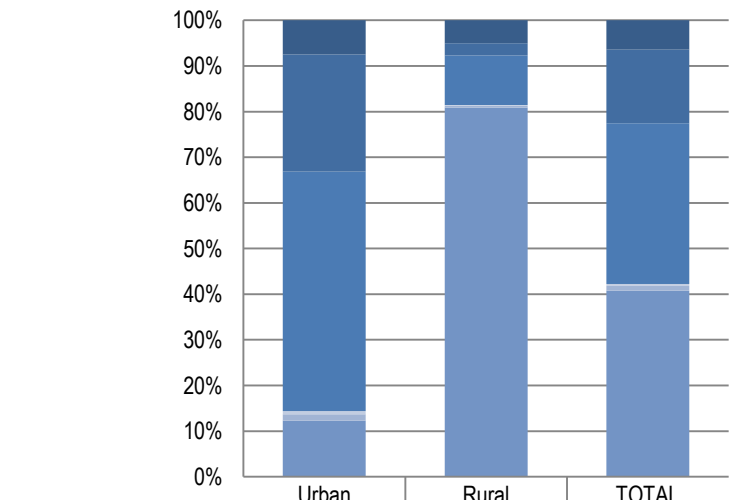
Interestingly, the importance of shelter related expenditures tends to decrease in priority after the floods, though based on the assessment it is not possible to explain the reasoning behind this.

4.4. Shelter Profile

Key Statistics

- % of families living in their own homes at time of assessment: **87%**
- %of shelters adapted by households as a flood mitigation measure (elevated / floating raft): **95%**
- % of shelters with minor flood related damage (cat. 3): **38%**
- % of shelters with major flood related damage or collapsed (cat. 4&5): **13%**
- % of non-affected shelters (cat. 1): **2%**

The shelter arrangements of affected families had not been widely known prior to the launching of the assessment. Despite the existence of 119 evacuation centres in Loreto at the height of the flooding, only 15.000 of an affected population of over 200.000 (ca. 8%) took refuge in such centres. In fact, **45%** of families responded as having been displaced at some point during the flooding indicating that the majority of households remained in their homes or within their community.



	Urban	Rural	TOTAL
Title of Property	7%	5%	6%
Certificate of Posession	25%	3%	16%
Record of Dwelling	51%	11%	34%
Blank / Error	1%	0%	0%
Other (Renter)	1%	0%	1%
No Title	12%	78%	40%

Figure 21 (right): Land Ownership Structure

At the time of the assessment **87%** of families were living in their own homes, **6%** currently living with family members [7], **5%** in transitional / temporary accommodation setup (i.e. tent), and **2%** in other (supported by church group, etc.).

A minority **(22%)** of families held some sort of title to the land on which they were living, with a further **34%** having some sort of informal community regulated paper (a *record of dwelling* or *constancia de morador*) and most not having any title or documentation at all (**40%**). Given the fact that across Peru land ownership regulation and structures are under-developed, the lack of formal documentation does not feature as an area of concern amongst the households assessed by the survey. This is backed by the data which shows (a) that over **50%** of households had already initiated repairs / rehabilitation to their shelters; and (b) that **81%** of households without land property title or *titulo de propriedad* plan to remain in the same locations as prior to the floods.

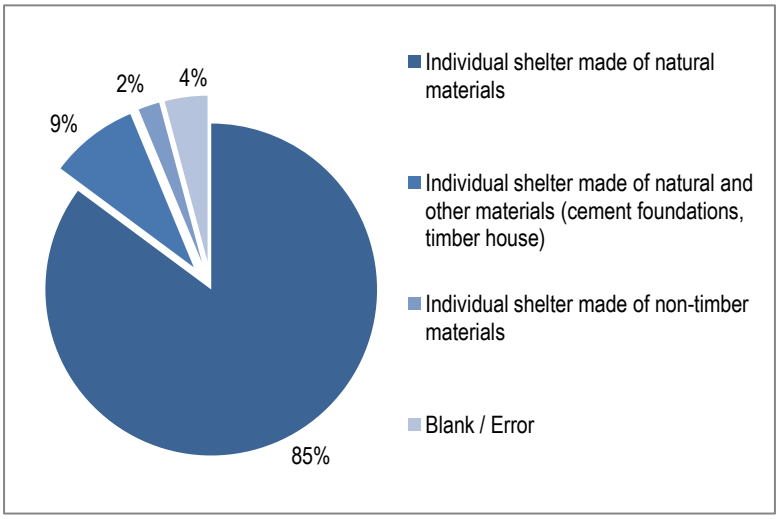
Amongst those families who indicated that they planned not to remain in the same locations **43%** said that they planned to remain within the same community but at a different site therein, **18%** indicated that they planned to move to a new location / community, **7%** said that they planned on remaining at the location to which they moved during the floods (most often this is the case with displaced families hosted at a different location). Based on this data there the lack of property

[7] Note this differs from the 3% value attained when asked whether the family was still displaced. In fact, a number of families were living with their relatives in a neighbouring plot, and thus would respond that they were not currently displaced given the proximity to the original location of their home.

title appears to have little significance on rehabilitation and recovery of shelter conditions. Nonetheless in both rural and urban areas some key issues need to be considered:

- In rural areas shelter rehabilitation should be coupled with community DRR capacity building and awareness raising – particularly in terms of identification of locations within communities where construction should be avoided and discouraged (potentially by not issuing the informal records of dwelling or *constancia de morador*). This is especially important given that the lack of land ownership regulation leaves a great deal of choice of where to construct ones home to the individual family or community;
- In urban areas – especially in the high risk urban periphery – shelter response programmes should work closely with local authorities to support families in the highest risk locations (within already highly vulnerable neighbourhoods) to identify a safer location to which to move. Moreover, to avoid that any unused lots are taken over by new families, shelter actors should work closely with authorities and communities to ensure that information is shared on potential 'no-build zones' and communities are consulted in the process of defining such areas.

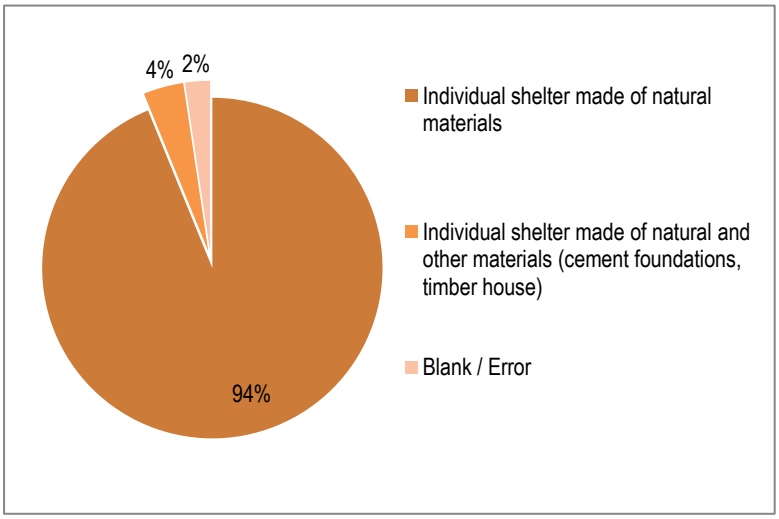
Shelter Typology



Across both rural and urban locations the vast majority of shelters were made solely of timber, given the relative ease of accessibility and low cost.

Figure 22 (left): Shelter Classification; URBAN areas

As can be expected, in rural areas the share of shelters made of natural materials increases further to over 90%, with no shelters being made entirely of non-timber products (cement, bricks).



The existence of coping mechanisms is further demonstrated in the adaptations made by households to their shelters, with **95%** of shelters having been constructed on stilts or rafts and only **1%** sitting directly on the ground (4% of surveys had errors or were left blank).

Figure 23 (left): Shelter Classification; RURAL areas

Shelter Adaptation	LOCATION	
	Urban	*Rural*
Elevated	85%	94%
Floating Shelter	9%	4%
Ground Level	2%	0%
No Information	*4%*	*2%*

Table 6: Type of Adaptation to Shelter Categorised by Location

Figure 26 (right): Example of Ground Level Shelter, (Punchana Municipality, Urban Location)

Figure 24 (above): Example of Elevated Shelters (Santa Martha, District of Belen, Rural Location)

Figure 25 (left): Example of Floating Shelter (Belen Municipality, Semi-Urban Location)

Further data on the types / profile of shelters assessed during the survey are summarised below:

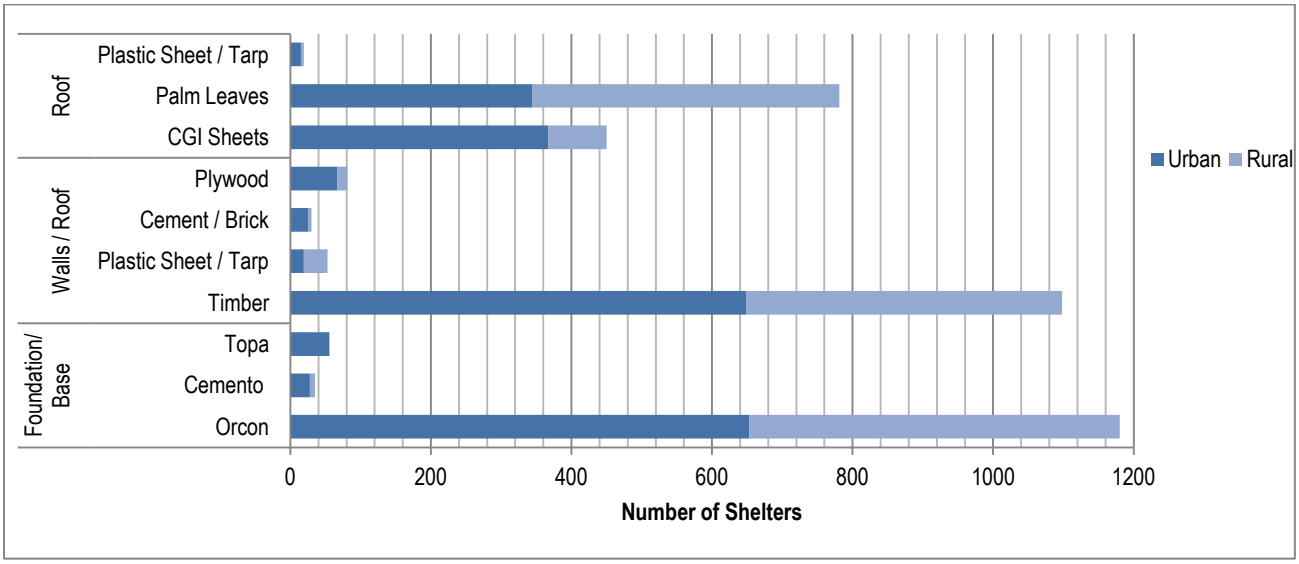


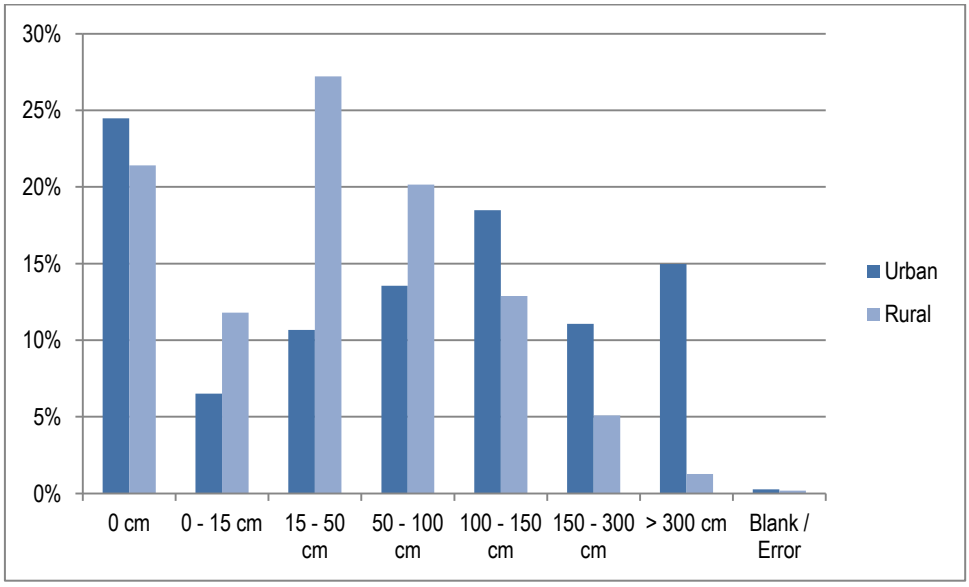
Figure 27 (below centre): Number of Shelters Affected subset by Shelter/Material type

- **6%** of shelters have a small shop (**7%** in urban areas, **4%** in rural areas);
- **78%** of shelters have a dedicated space for cooking – kitchen (same across rural / urban divide);
- **6%** of shelters have integrated an animal pen (same across rural / urban divide);
- **3%** of shelters have a storage area for goods / inventory (**5%** in urban areas, **1%** in rural areas);
- **7%** of shelters mentioned having other spaces dedicated to a specific purpose – i.e. bedrooms, living quarters, or an orchard (same across rural / urban divide).

Damage Profile

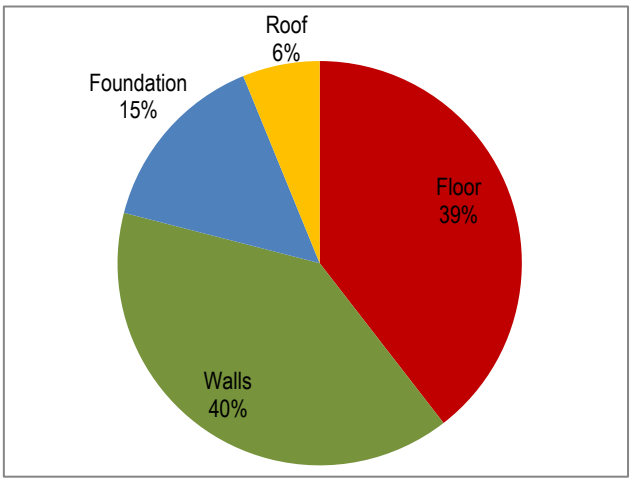
The slow-onset nature of the floods in the region meant that few houses sustained immediate and devastating damage, though those closer to river channels (and especially at bends in the river) recounted experiencing strong currents which particularly affected the floating shelters that are held in position with the use of poles – which act as anchors. The fact however that the floods reached historical highs meant that despite the adaptation mechanisms, shelters were often inundated even for those highest elevated shelters (*see water height above floor level figure below).*

Figure 28 (below centre): % of Shelters Affected by Floodwater Levels Measured in cm above the Shelter Floor



Since floodwaters increased and receded in a gradual manner, the period in which the shelters were submersed or under greater stress (in the case of floating shelters) was in many cases of multiple months. Thus, even when the best quality (read: water-resistant timber type) materials were used, the prolonged nature of the disaster meant that there was degradation of the shelter.

Figure 29 (right): Component of Shelters Most Affected by Flooding



Moreover, many communities reported severe storms and winds at the time of the floods associated with the severe weather warnings issued by SENAMHI. These storms affected the integrity of the roof, which was under extra stress at the time as one of the ways families coped with the floods was to create an 'attic' at roof level in which they would live. Particularly, the roofs made of palm leaf were quickly damaged during the storms thus letting water infiltrate from above. s

The data below provides an overview of the types of materials used in shelter construction by shelter component as well as the damage profiled of the shelters both categorised by location and sub-categorised by type of shelter and shelter adaptation mechanism. Note that in order to better define the extent of damage sustained by shelters as a result of the floods five damage categories were established in line with INDECI categorization (affected, inhabitable, and collapsed):

- Category 1: Not affected by floods;
- Category 2: Affected by floods with only superficial damages; primarily cleaning required (INDECI Category Affectadas);
- Category 3: Shelter sustained minor damage, small repairs required (INDECI Category Affectadas);
- Category 4: Shelter sustained major damage, requires repairs to be habitable (INDECI Category Inhabitables);
- Category 5: Collapsed shelter; requires reconstruction – uninhabitable (INDECI Category Colapsadas).

KEY FACTS & FIGURES

- Only **2%** of assessed shelters reported water levels not reaching the shelter floor – **79%** of which were due to the fact that they were sufficiently elevated or on unaffected land within a community, **12%** of which were floating houses;
- **1/3rd** of floating shelters sustained category 5 damages in which the shelter collapsed or was irrevocably damaged. Two reasons were given for this high figure: (1) the floating structure couldn't carry the entire weight of the shelter thus partially or fully submerging; (2) floating shelters were most commonly found close to river banks where the water flow during the floods was highest – thus either shelters not properly anchored would get carried away or those whose floating base (raft) was not strongly held together would weaken, submerging part of the shelter;

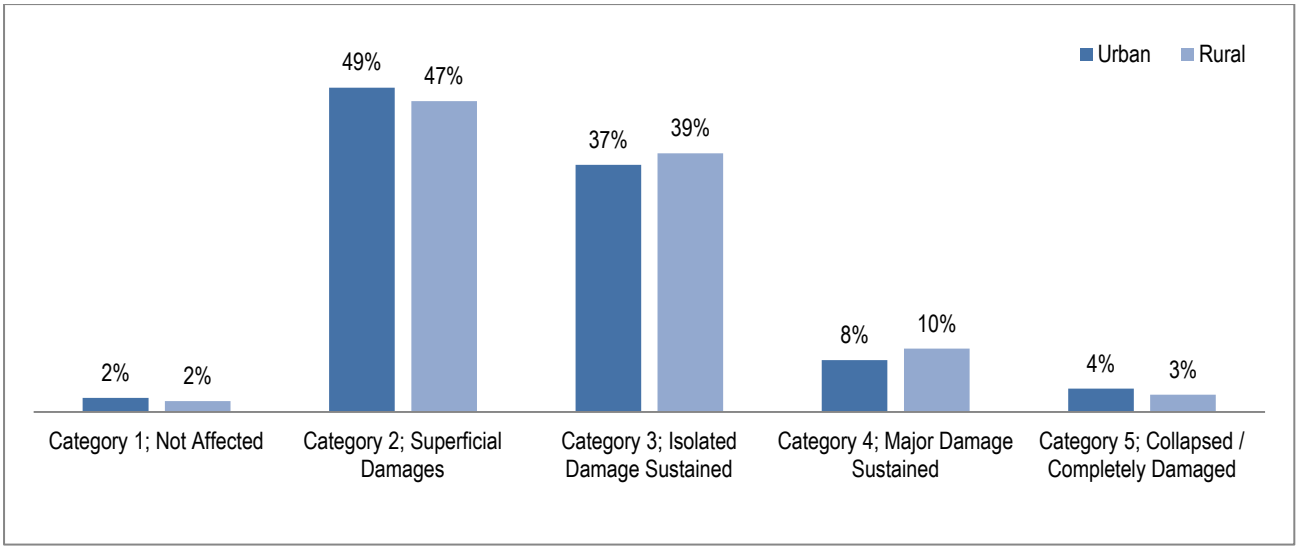


Figure 30: Damage Profile by Location

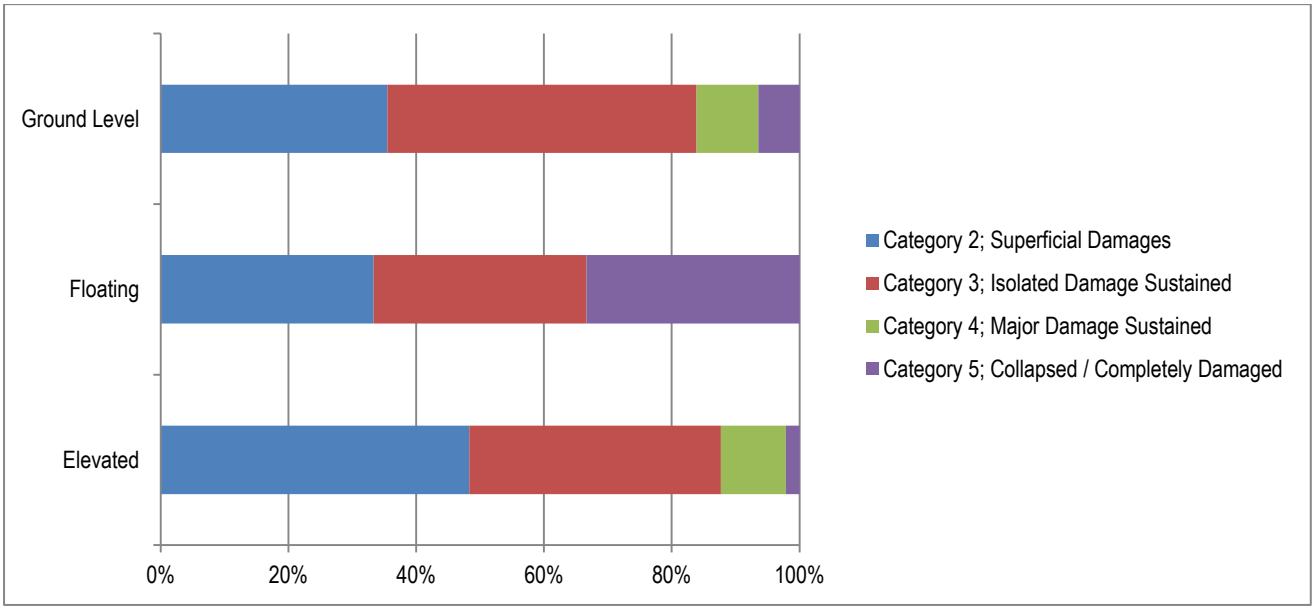


Figure 31: Damage Profile by Shelter Type

- **68%** of **category 2** damaged shelters indicated superficial damage to walls or floor;
- **77%** of **category 3** damaged shelters indicated superficial damage to walls or floor as well as **60%** indicating as having a leakage;
- **83%** of **category 4** damaged shelters indicated damage to the walls or floor. **49%** of category 4 cases experienced structural damage or a partial collapse of their roof;
- **60%** of **category 5** damaged shelters indicated that the shelter was completely damaged, collapsed, or was washed away by the floods. Amongst the **40%** that did not experience a total collapse, **20%** indicated structural damage to the foundations of the shelter had occurred. **13%** had experienced the collapse of their roof. **10%** suffered severe damage to the walls that would indicate a potential issue with the structural integrity of the shelter (in the remaining **57%** of cases a visual confirmation could not be undertaken as the shelter had been taken apart by its owners).

Overall, the data suggests that there is little correlation between the type of shelter (specifically the shelter adaptation mechanism) and the degree of damage. In part this is likely due to the extreme nature of the flooding affecting even elevated shelters, which would in 'normal' years remain unaffected despite any flooding. Moreover, there is further little difference across urban and rural locations which is unsurprising based on the similarities in the housing design and materials used. From a technical perspective it would have potentially been interesting to review the intensity of damage with respect to the types of materials used – specifically the type of timber used – given that, at least through visual observation and general discussion with community members, there was evidence that wherever the material quality was poor or inappropriate the damage was more pronounced. The lack of technical personnel available to support the survey however meant that this could not be effectively analysed.

4.5. Shelter Needs

Key Statistics

- % of families that had commenced repairs to their shelters at the time of the survey: **53%**
- **50%** of respondents indicated they would contribute manual labour to any shelter support programme within their community
- Top shelter needs: **timber planks, roofing materials (CGI sheets & palm leaves), nails, and timber for foundations.**

Across the surveyed areas, **53%** of families had commenced rehabilitation/ reconstruction of their shelters, indicating a fairly high resilience capacity which shelter focussed programmes should take into account. In fact, amongst those who had not started any shelter rehabilitation activities the majority indicated that it was due to a lack of money (**73%**) rather than an issue related to access to materials (**31%**) or capacity (**2%**) – **suggesting a strong ability of families to manage their own shelter reconstruction.** It is important to note however, that households often mentioned their limited financial capacity as a factor restricting their access to the materials required to undertake necessary repairs.

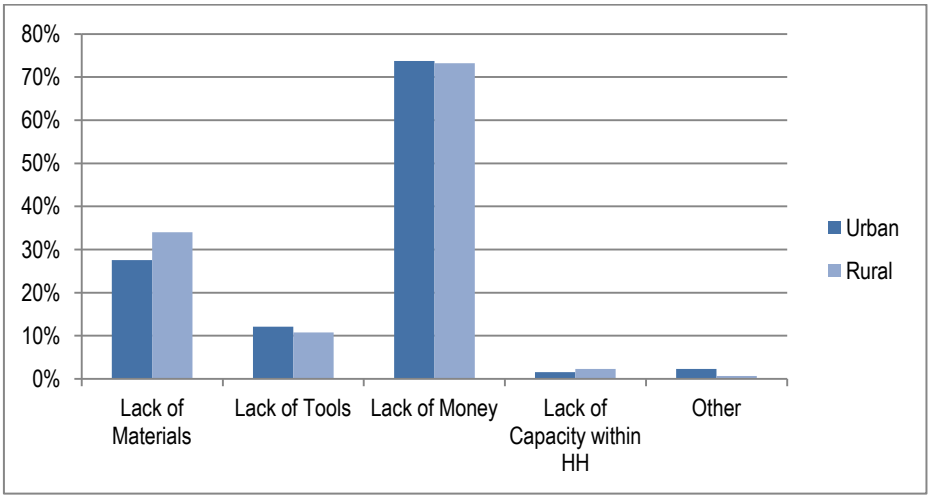


Figure 32 (above): Reasons for Families not Starting Rehabilitation/ Reconstruction Activities

During the key informant interviews, community leaders were asked what percentage of families could manage the repair/ rehabilitation of their shelters of their own accord. Based on the data from these sources, there seems to be a greater perception within urban communities than rural communities that a capacity exists to manage the shelter needs. This may be correlated with the fact that livelihoods in urban areas are able to recover faster given the reduced reliance on agriculture or fishing (the former being highly affected and the latter providing an inconsistent income stream). However, this clearly contrasts with the household data presented in the paragraph above.

Table 7: Ability of Inhabitants able to cover the Costs associated with the Reconstruction / Rehabilitation of their Shelters of their own Accord, as perceived by Key Informant Respondents

	Urban	Rural	TOTAL
More than 50% of the community	7%	8%	**8%**
Less than 50% of the community	86%	21%	**45%**
Nobody	7%	71%	**47%**

When considering that in urban / semi-urban locations **51%** of households had started some repairs to their shelters (see figure below for details) whereas this figure is **56%** in rural areas, the indication is that potentially families in rural areas are better able to manage their shelter needs. Potentially the data is indicating a difference between urban and rural households in the prioritization of tasks within the recovery process of individual families – rural households may consider the repair / rehabilitation of their shelters a higher priority as part of their recovery process, thus being more likely to have indicated having undertaken some sort of repair to their shelters during the interview. What can be said with more precision however is that **the perception of the key informants is strongly linked to the concern that families face significant challenges given the degree with which the primary household livelihood activity was affected by the floods.**

In urban locations the top three areas in which repairs were made were in the walls (34%), foundations/ floor (21%), and WaSH facilities (18%). In rural areas on the other hand the top three areas where changes/ repairs were made were in the walls (22%), WaSH facilities (21%), and foundations/ floor (20%).

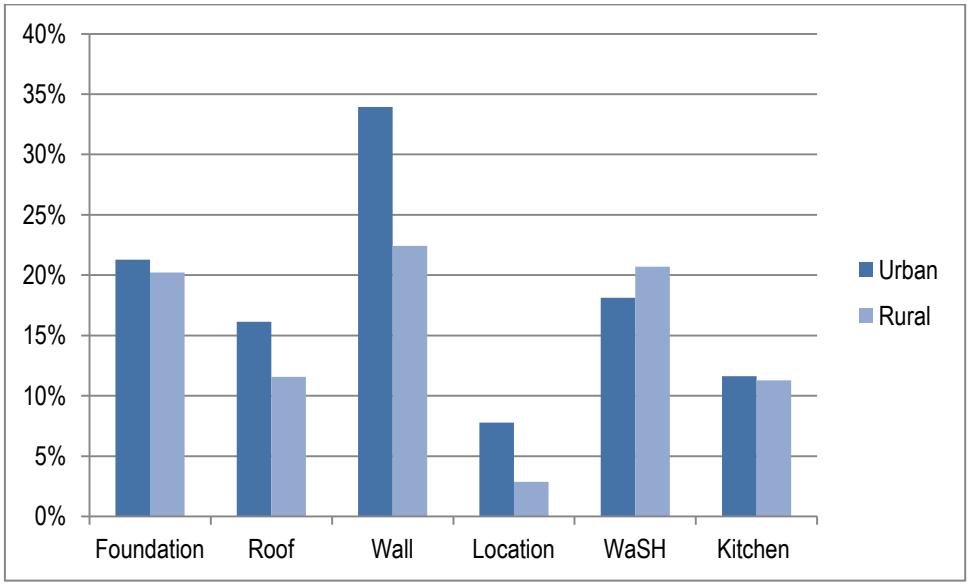


Figure 33 (right): Types of Shelter Works Undertaken After the Flooding

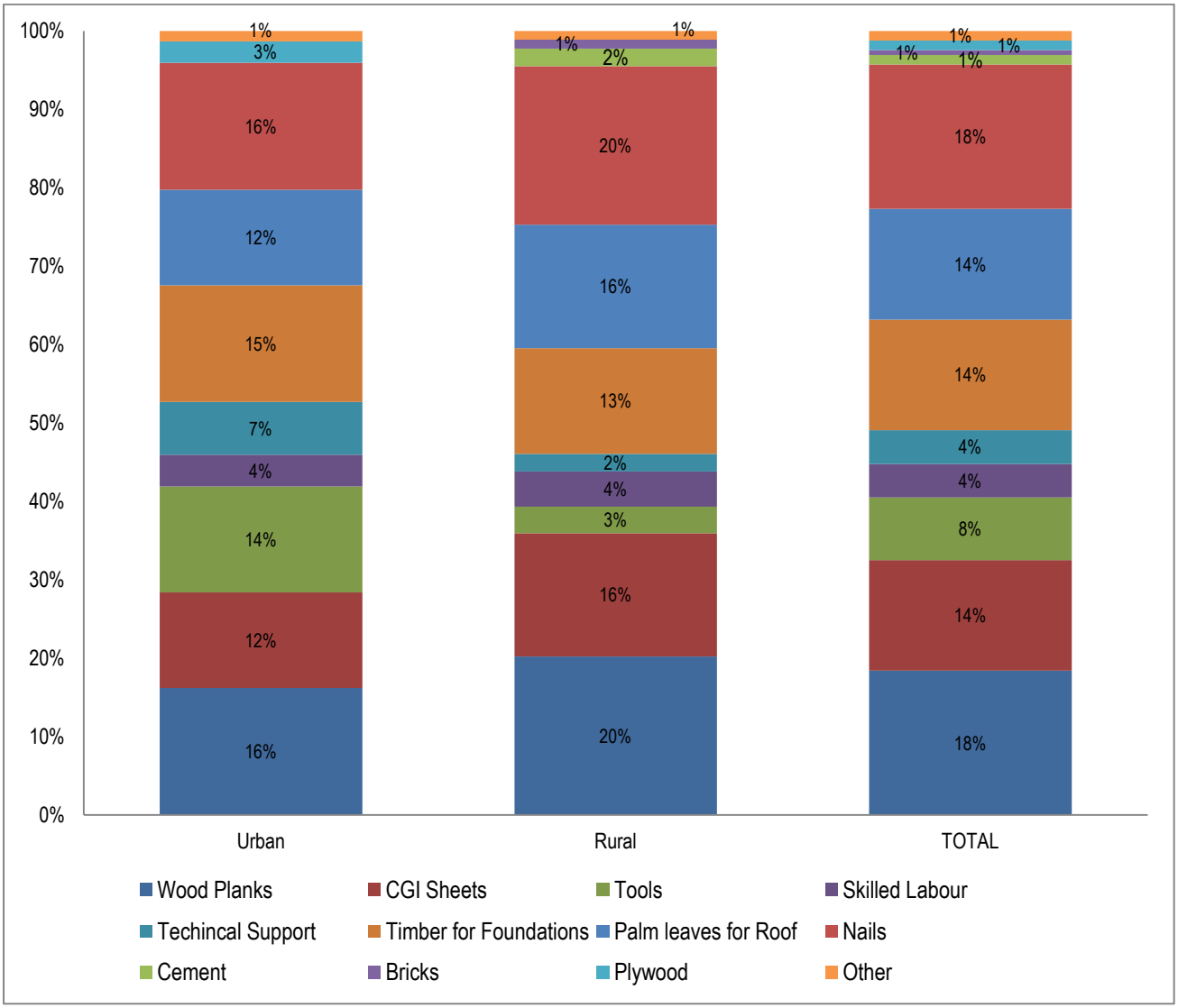
To better gauge the ability of communities to manage their own recovery key informants were asked to indicate the time it would take those families with the ability to manage their immediate shelter needs, to do so themselves. In **55%** of cases it was mentioned that more than 3 months would be required for families who could complete their own repairs to do so. **40%** could do so in a period of 1 to 3 months, and **5%** within the next 4 weeks.

When considering the facts that: (a) shelter was of limited importance in terms of the monthly household expenditures, (b) that 73% of families indicated the lack of money as a factor limiting their ability to undertake shelter repairs / rehabilitation, and (c) that the majority of households have seen their livelihoods highly affected by the floods; there is evidence that a **shelter material distribution (or voucher) programme represents a highly relevant response to the shelter needs of families since it would:**

a. **Reduce the lack of financial resources as a factor limiting the ability of households to manage their shelter needs; and**
b. **Reduce the financial burden of the family at a time when income sources are less reliable, further allowing families to redirect their expenses towards other (higher priority) needs.**

The figure below provides a breakdown of the type of shelter needs which could be targeted by a shelter response programme.

Figure 34: Breakdown of Shelter Needs subset by Location Type



4.6. WaSH Situation in Shelters

Key Statistics

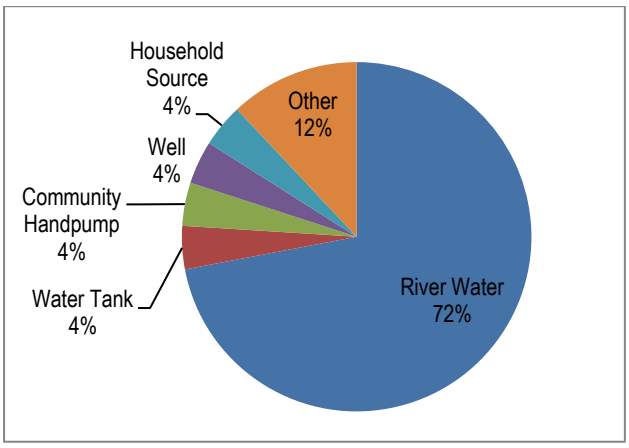
- % of households in urban areas with access to electricity: **73%**
- % of households with access to water source: **76%**
- % of households with access to a functional latrine at time of survey: **50%**

Public Services

Access to public services such as electricity and water is crucial in times of emergency. Whilst rural communities rarely had access to electricity prior to the floods, in urban areas the vast majority of shelters were connected to the electrical network. Within urban areas in fact, **27%** of those affected did not have access to electricity, largely due to damage to the connection between households and the public networks.

Water

76% of households surveyed have access to a water source either at the home or within 500m of their shelters. However, of those with home access a water source, in only **21%** of cases in urban areas mentioned it was potable – decreasing to **1%** in rural areas. The reason for being so low in rural areas is the fact that in rural areas the most common water source was mentioned as being the river (**72%**), whereas in urban areas the primary sources are paid services (either piped to the home or through purchase at a water vendor) – **72%.**



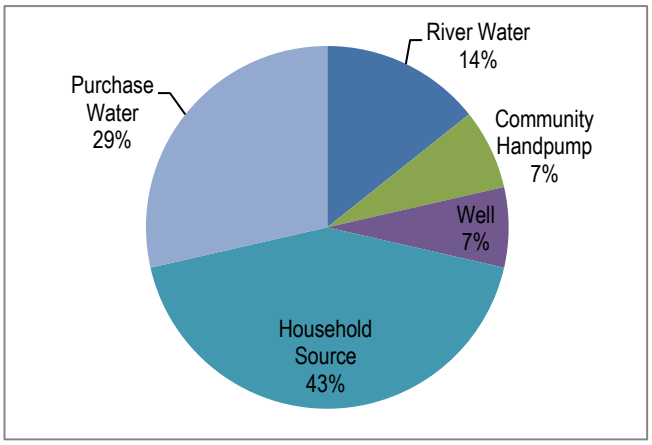


Figure 35 (above left): Primary Water Source; RURAL AREAS

Figure 36 (above right): Primary Water Source; URBAN AREAS

Sanitation

Across the population surveyed about half had access to a latrine at the time of the assessment; this was **down by 1%** compared to before the floods in urban areas, and **down 10%** in rural areas.

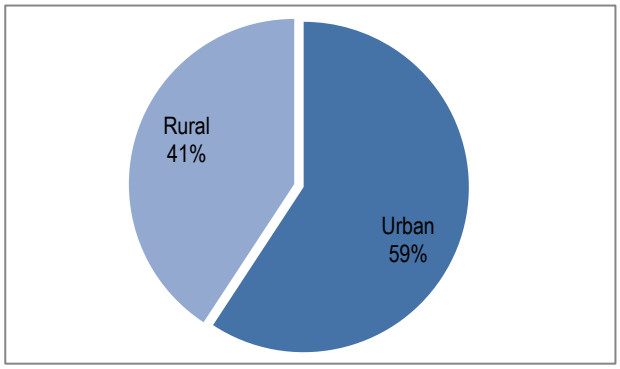


Figure 37 (right): % of Households with Access to Functional Latrine (Post Flooding)

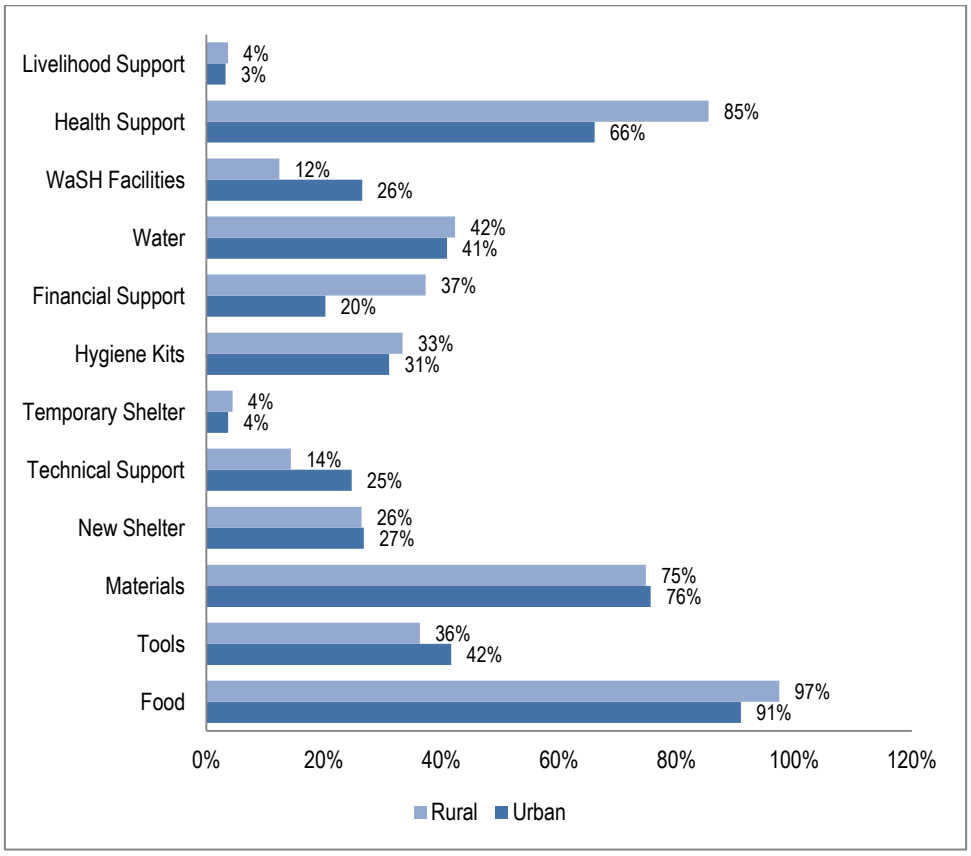
4.7. Non-Shelter Household Needs

Key Statistics

- % of households requiring external support: **90%**
- Top three priority needs of households (in order of priority): **Food, (Construction) Materials, Health Services**

Over **88%** of urban households and **93%** of rural households mentioned requiring external support following the floods. The type of support requested by households provides a greater reflection of the immediate needs, **with food, health, and material support most often mentioned**.

Figure 38 (below): % of Respondents Indicating Need for Support per Category



When asked to prioritise their top three needs based on the categories mentioned during the interview the priorities became **food, materials, and tools.**[8]

[8] Caveat: Given that the surveyors introduced themselves as undertaking a shelter assessment; it is possible that the prioritization given may be linked to the preconception that by indicating shelter needs families would be later supported by programme activities.

	PRIORITY 1	PRIORITY 2	PRIORITY 3
Food	63%	12%	4%
Tools	4%	8%	3%
Materials	14%	26%	14%
New Shelter	3%	7%	3%
Technical Support	0%	3%	3%
Hygiene Kits	0%	2%	5%
Financial Support	2%	3%	6%
Water	3%	9%	11%
WaSH Facilities	1%	2%	7%
Health Support	3%	19%	32%
Livelihood Support	0%	0%	1%

Table 8: % of Households Indicating Top 3 Priority Needs by Category

The above data reinforces the argument that **response programmes focused on supporting the recovery of livelihood activities should be prioritised along with shelter response activities.** Food is clearly the most important immediate need at the household level. The single most important contributing factor to this result is the fact that in rural areas the primary livelihood – agriculture – is primarily practiced as a subsistence activity. Two critical factors aggravate the situation:

1. **The crops damaged by the floods represented the main staple diet for households (i.e. yuka); and**
2. **The long duration of the flood events has significantly depleted families' coping mechanisms –** floodwaters in fact began rising in early January and only disappeared in mid June. Moreover, a further 3 months are needed before the primary crops at this stage in the season (particularly rice) can be harvested.

One area of concern prior to the assessment was associated with the fact that the temperatures in much of the region would be decreasing with the onset of winter and affected families may have been unable to secure a large part of their possessions during the flooding – thus leaving them exposed at a time of greater necessity. However, based on the surveys, a majority of families responded that they had sufficient cooking items, hygiene items, and mosquito nets – indicating that the problem of loss of possessions is less acute than anticipated.

	Urban	Rural
Cooking Items	83%	68%
Hygiene Items	87%	76%
Clothes / HH Items	57%	31%
Mosquito Nets	85%	87%

Table 9: % of Households Responding as Adequate Materials / Items per Category

When considered that only **17%** of families indicated as having received some form of external assistance the NFI needs cannot be considered as highly acute. Nonetheless, a large number of respondents indicated that although they did have items they were able to recover / save during the floods or were donated in the aftermath – many were old and somewhat damaged. One point to consider is that the incidence of diarrhoea is high which may indicate a lack of awareness or ability to practice proper hygiene standards (especially with regards to the treatment of drinking water). This in turn could be an indication of a need for hygiene kits and hygiene promotion campaigns – which tend to be especially relevant at times when shelters and other community infrastructure are being rehabilitated and is out-of-use.

4.8. Household Risk / Disaster Preparedness

Household Risk

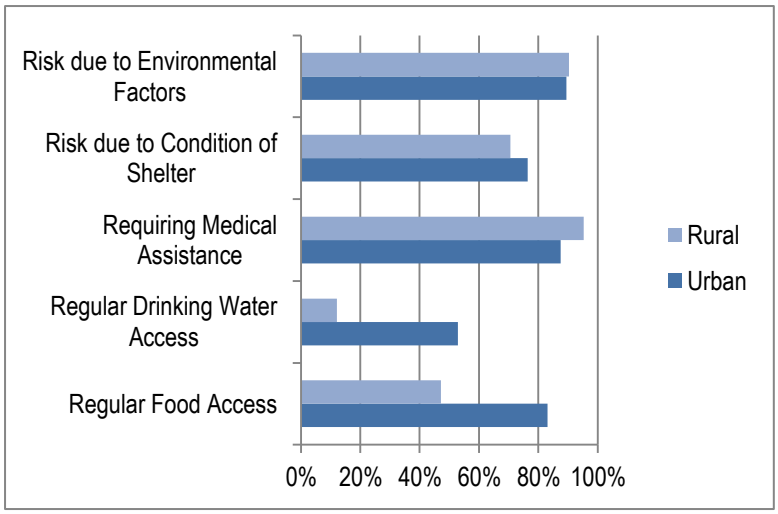


Figure 39 (left): % of HH Answers According to Risk Factors

In an effort to better understand the risk factors which may exacerbate a family's vulnerability following the floods, a number of questions were asked regarding access to the most essential day-to-day needs. Food security and regular access to potable drinking water showed the largest disparity between urban and rural areas. In fact, **83%** of families in urban areas indicated as having sufficient access to food and **53%** to potable water, whereas these figures reduced to **47%** and **12%** respectively in rural areas. When considering that over **91%** of families noted that they would currently require medical assistance **there is a strong case for interventions and monitoring of food security until the post-flooding planted crops can be harvested and household / community water management and treatment.**

It was interesting to note that over **74%** of respondents felt that their family was at risk due to the conditions of their shelters. It is possible that this perception of risk is a key factor in the decision-making process of households to prioritise the repair / rehabilitation of their shelters, given that over half the households surveyed had started some sort of repair once the floodwaters subsided. Most importantly however, it demonstrates that families associate their 'security' with their housing. **Thus, any efforts to facilitate the reconstruction / rehabilitation of shelters and improve the stability of the structures with a view to mitigate the risk of the shelter to hazards, would likely have a significant impact on the perception of security at the family level.**

From a DRR perspective, over **90%** of families acknowledged that their families faced risks – and are vulnerable to – hazards given the location of their shelters / communities. Although this tends to be the case following any major event, the key issue to be highlighted is **the opening of a window of opportunity to tackle DRR and DM subjects, build capacity at the community level, and implement risk mitigation measures.**

Disaster Preparedness

The key informant questionnaires also included a specific focus on disaster preparedness. The aim wasn't to objectively determine if communities were or were not prepared in the event of future floods, but their perception about their own, and those of their own community, capacities in facing natural disasters.

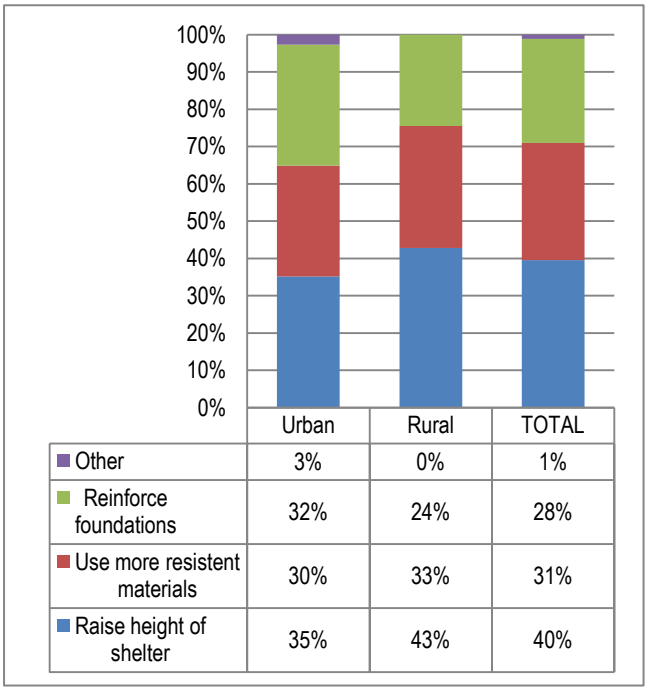
81% of key informant respondents felt that their community wasn't prepared to for natural disaster, though interestingly this figure increases to **87%** amongst urban communities and decreases to **76%** amongst rural communities. This could be indicative of the fact that rural areas have greater experience managing the impact of floods given their greater exposure to regular flooding. In combination with the fact that rural communities are likely to receive less support from external state and non-state actors in times of acute need due to their isolation, the incentive to take heed of lessons learned is probably higher amongst rural communities than urban ones.

When those that answered "no" to the question as to whether they felt that their communities were prepared for future flooding events were asked to explain why they were of this opinion, **41%** pointed to (a) the lack of knowledge and an implementation capacity of DRR principles that could be relevant to their communities; and (b) the fact that a degree of uncertainty existed as to what to expect in the future given that these floods exceeded all previous expectations. Moreover, **31%** indicate that the reason for their lack of preparedness is due to the fact that shelters within their community still require rehabilitation from this year's floods and strengthening in order to cope with future events. Further issues are summarized in the table below.

	% of mentions
Lack of knowledge of DRR, uncertainty as to what to expect in the future, and lack of capacity to implement necessary changes	**41%**
Because shelters still require rehabilitation / strengthening	**31%**
Lack of suitable land at a higher elevation where they could move to	**13%**
Poverty & lack of economic resources to support preparedness activities	**9%**
Lack of food / seed storage for recovery after floods	**3%**

Table 10: Indicators for Community Perception of Lack of Disaster Preparedness

Across communities, **73%** of those surveyed for the key informant interviews acknowledged that there were areas within their communities where it would not be advised to construct shelters, highlighting a growing awareness of risk and their community's vulnerability to these. **77%** of communities further acknowledged that there was a need to improve the construction practices of their homes. In particular, the key issues raised were the **need to raise the height of shelters** (the primary DRR measure at the household level) and to **use more resistant / relevant materials**. This latter being a lesson learned from the floods given that many floorboards and wall planks were significantly damaged as a result of their prolonged contact with water.



	Urban	Rural	TOTAL
Other	3%	0%	1%
Reinforce foundations	32%	24%	28%
Use more resistent materials	30%	33%	31%
Raise height of shelter	35%	43%	40%

Figure 40 (left): Type of Improvement to Shelter Suggested by Communities

Building on lessons learned and best practices at community level would be an appropriate way forward. However, lessons learned are not enough if the aim is to provide a comprehensive toolbox to prepare communities in front of major natural disaster. Indeed best practices are extremely useful in reducing risks and mitigating effects but proper preventive action requires broader institutional and operational frameworks. A holistic and multi-sectoral intervention is then required which focuses on generating information flow and developing capacity at both the grassroots and higher administrative levels. Information sharing is crucial given that only **33%** of communities felt that they had received adequate communication and information regarding issues of DRR.

DRR programming should focus on better planning and on secure housing, as expressed by the data. Better planning and more secure housing programs require more resources as well as more institutional expertise and commitment. Its implementation will have a longer timeframe and would be more difficult and sensitive. Looking at shelter specific interventions, this means that how to and where to rehabilitate, relocate and/or build new houses need to be clarified, planned and enforced under a DRR perspective that takes into account floods and other natural hazards.

5. Conclusions & Recommendations

1. **Given the strong capacity of communities to deal with their shelter needs, the focus of assistance programmes should be on livelihood recovery and support to reduce the vulnerability of households on single source income streams (diversification and/or DRR), alongside a component of shelter materials distributions to those households with shelters that experienced the greatest damage.** Given the fact that the floods ended some weeks prior to the assessment period, most families had undertaken activities of their own means or with external support to manage their immediate shelter needs. At this time therefore, a focus on livelihood recover and vulnerability reduction would have a greater impact, although a strong shelter component should be mainstreamed for the most vulnerable families. Protecting or diversifying the income sources of households will ensure an increased ability of households to improve their shelters of their own accord. Nonetheless, given the significant economic impact of the floods, a shelter materials distribution programme is crucial for those families whose shelters experienced the greatest damage in order to alleviate the pressure on the meagre incomes at a time when their food associated costs are highest given the loss of their agriculture crops (Yuka in particular).

2. **Reconstruction and rehabilitation programmes or activities should as best as possible incorporate disaster risk reduction components.** Given the strong resilience shown by households across communities to tackle reconstruction and recovery efforts of their own accord, any programmes directly supporting shelter reconstruction efforts should ensure that communities are informed on 'build back better' techniques as well as given information on how to manage adaptations to both their individual shelters as well as wider community in order to reduce the risk of damage in future flooding events.

   Capacity building and sensitisation activities are essential to improve the living conditions of households across Loreto. Programmes should focus on improving shelter designs, building techniques, material selection and treatment, maintenance practices, and other risk reduction activities. These could be conducted by either NGO or governmental campaigns through the distribution of posters or leaflets, radio programmes, and/or community meetings/ workshops.

3. **Government-led relocation programmes should be supported to ensure relevant targeting of households living in informal communities in high flood-risk or no-build areas.** Given the existence of regional plans to develop relocation sites in safer areas, the humanitarian community should support and inform the regional government on key areas and households that should be targeted, based on the informed consent of families. In particular, despite the possibility to categorise families by vulnerability based on assessment data[9], there is a strong argument in favour of relocating on the basis of community vulnerability rather than on the basis of family vulnerability alone – thus avoiding that the lots emptied by relocated families are taken over by another family. The humanitarian community could further participate in the process of: (a) aiding information exchange and monitoring implementation from a protection perspective; and (b) supporting income generating activities for families participating in relocation processes.

   At present the regional government and the Punchana Municipality are preparing a total of 2.000 [10] lots as part of a wider relocation programme. Despite the advancing stages of preparation of the lots, there seems to be little progress in the way of identification and prioritisation of communities / families for relocation. The current locations of the informal settlements in semi-urban locations around Iquitos are in high risk areas in which human settlement should not have occurred. Such settlements are primarily inhabited by the poorest strata of Iquitos' population. As

[9] Vulnerability criteria to relocate these families should consider also their capacity to reconstruct by their own a new house (again livelihood and capacity building – see recommendation #6)
[10] Regional Government 1600, Punchana Municipality 400

such there is a strong potential for humanitarian actions to implement transitional shelter support programmes for families whose shelters are currently uninhabitable or at high risk of further damage with storms etc, whilst supporting the relocation effort from a protection perspective; particularly by ensuring that the process is accountable and that communities are well informed and able to give their input into the process.

4. **District Authorities should be supported to develop their response and assessment capacities in order to better make use of regional emergency decisions aimed at providing response and recovery support; especially in tackling shelter topics**. Despite efforts of the regional government and COER to provide assistance to affected provinces and districts, a significant capacity gap appears at the lower administrative levels such as the technical departments (*secretarias técnicas municipales*). This affects both the collection of critical data in order to understand the impact and extent of damage, as well as recovery efforts such as ensuring the rehabilitation of schools and health centres critical in early recovery efforts. Moreover, it means that in turn the regional government cannot effectively make use of emergency funds issued at a national level given the lack of substantiating data linked to their requests. This particularly affects efforts by the Ministry of Housing in their ability to ensure that funds or resources are equitably channelled to the most affected areas.

   Part of the lack of capacity further stems from a lack of understanding / knowledge in terms of a clear and commonly held understanding of the different categories of damage or affectedness used by INDECI or the COER. Supporting the development of a common understanding of categorisation of damage, along with a capacity building programme at the district and provincial levels on the collection and consolidation of data would thus contribute to better management of emergency funds made available by government departments through the declarations of states of emergencies in specific departments. In particular Municipalities do not have the capacity / trained technical personnel to write the "EDAN" report (*Evaluación de Daños y Análisis de Necesidades*) to be able to ask for governmental support. INDECI had initiated some training sessions to be able to improve their capacity, however there is still considerable scope for support by the NGO sector.

5. **High risk areas need to be identified and clearly demarcated and communicated to those affected in urban areas**. The Ministry of Agriculture has launched this process by completing a risk map (*Mapa de Franja Marginal del* Rio), however it has yet to be published. As such there is a clear need for this data/ information to be shared both across departments and actors and with communities directly. Moreover, any program that addresses reconstruction and rehabilitation ought to adhere to risk boundaries in an effort to improve disaster risk reduction and resilience to future water-related events. As mentioned, mapping capacities exist at a regional and municipal level which could be used to inform the wider population of areas of high risk or where no construction should be undertaken. This could contribute to INDECI efforts at developing the disaster preparedness and response capacity of authorities – as presented in the COER on 06.07.2012.

6. One of the most often mentioned issues mentioned by communities hit by flooding was the protracted length during which communities were often isolated in their homes. Overall, floodwaters were present in the most highly affected areas for two months. The impact therefore on livelihoods in both urban and rural locations beyond the obvious sectors (agriculture for example) was strongly felt across many other sectors since members of the household would be afraid to leave their homes. Therefore any **effective program needs to target livelihood activities with a strong component on diversification of income generation activities and DRR in rural communities, given their current high reliance on agriculture and fishing**.

   Agriculture in rural areas accounts for a marginal proportion of household, but at the same time remains the single most significant activity given its subsistence nature; families primarily conduct agriculture activities for self consumption thus reducing their expenditures on food items and allowing them to pay for expenses including water purchase or education and health costs. Fishing represents the most significant source of household income,

although a highly irregular one given (a) its secondary position as an activity for rural households; and (b) given the instability of catches through the year.

7. **Water treatment, management of stagnant water, and solid waste management plans are recommended** as complementary programmes for shelter interventions given the high prevalence of illness and disease associated with poor quality drinking water and vector-borne diseases (especially dengue and malaria), as well as a high reported caseload of children with stomach parasites.

   Some flood affected communities have been reported as having extremely high rates of malaria and dengue. Ongoing campaigns in the region have distributed mosquito nets and other protective materials; however many families have lost or had these items damaged during the floods. Moreover, a major problem often mentioned by community members has been the accumulation of rubbish – particularly in urban sites, and an increase in the number of stagnant water pools. Many individual households indicated that health issues have increased since the floods for which they are either experiencing higher costs or indicate a need for support. As such, WaSH related components should be built into response strategies.

8. **Disaster risk reduction and disaster management programmes should be a key component of both long-term development and response/ early recovery programmes – particularly focussing on improved information communication.** Communities are aware of the risks faced within their locations and strong grassroots community structures exist that could be used as channels to implement grassroots DRR/DM programmes to further strengthen community resilience.

   Through the key informant questionnaires it was clear that communities have received little support to improve their resilience mechanisms and manage future flood hazards. At the regional level however, there is a growing understanding of basic DRR principles that, if implemented, could improve the resilience of communities to a disaster. Clear information asymmetries exist in which at the grassroots level specific knowledge is not passed down, despite there being a strong inherent capacity and willingness at the grassroots level to manage community risks. Moreover, it is clear that greater communication with community level associations or leaders could provide important information and knowledge of existing capacities – which are not always clear to those at the regional level.

9. Throughout the emergency phase support by the regional government and NGOs / Agencies was focussed mainly in the collective centres in which only ca. 5% of the affected people found space. This decision caused unease and tension amongst community members that remained in their homes during the floods (mainly in urban area) as no aid was delivered to them despite the fact that their situation was similar. Moreover, the distribution of assistance was conducted without taking into consideration the real vulnerability conditions of families. In the future, this situation may entice families to move to collective centres, at least partially, to receive basic support that will help them to recover from their loss. "*Damnificados*" (families that lost everything) can also be found inside the communities and living with other neighbours or relatives on a temporary way.

   In fact, given that the legal situation of affected families is not defined and the chosen living area is not exempt from risks, humanitarian support should be given to population that remain in their communities as their situation may be worse than the ones displaced temporary to emergency centres. **At least a rapid-needs assessment should be conducted to verify living conditions and basic needs during the emergency or in its immediate aftermath.**

IMPACT Initiatives

REACH Informing more effective humanitarian action

The assessment was facilitated (in the framework of the shelter cluster) by REACH, an interagency program of IMPACT Initiatives (IMPACT).

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.

Since 2011 REACH has formalized a partnership with the Global Shelter Cluster (GSC) to support the strengthening of its coordination and planning capacity, with financial support from the European Commission Humanitarian Aid Office. 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, UNHCR and UNOSAT.

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List of Annexes to this Report