

SHELTER AND SETTLEMENTS VULNERABILITY ASSESSMENT – FINAL REPORT

Cyclone Pam Response

VANUATU
MAY 2015



EXECUTIVE SUMMARY

Category five Tropical Cyclone Pam made landfall in Vanuatu in the evening of 13th March 2015 at approximately 23:00 local time with sustained winds of 240 kilometres per hour and a number of storm surges, affecting an estimated 188,000 people across all six provinces (Shefa, Tafea, Malampa, Penama, Sanma and, Torba)—half of Vanuatu's population. As a result of the Cyclone, the affected area sustained widespread damage to personal shelters, infrastructure, and livelihoods.

REACH was deployed to Vanuatu in the framework of its partnership with the Global Shelter Cluster at the end of March 2015 to lead the implementation of a detailed inter-agency shelter & settlements vulnerability assessment. The assessment sought to: verify the coverage of emergency shelter & NFI assistance and conduct gap analysis; enable the shelter cluster to define a comprehensive shelter & settlements recovery strategy; and establish a baseline and method for a potential longitudinal study of recovery. Primary data collection was conducted across 13 sample sites, including 18 islands, 2 urban locations, and 1 peri-urban location, between 15 April and 1 May 2015. The sample sites were selected on the basis of high levels of damage identified through the initial rapid assessments (IRAs) led by the Government of Vanuatu.

Households across the assessed islands were found to be differently affected by Cyclone Pam, experiencing different levels of shelter damage depending on their geographic location, on their location in an urban, peri-urban, or rural area, and on the construction and materials of their shelter. Together with varying levels of sustained damage, uneven access to resources, livelihoods, assistance and the presence of individuals with specific vulnerabilities, are all factors which affect a household's overall vulnerability. Through examining differences related to all of these factors, the key findings of this study include the following:

Displacement: 65% of households reported temporary displacement from their homes as Cyclone Pam passed through Vanuatu. The large proportion of households to use this strategy indicates a potentially widespread lack of confidence in the ability of personal shelter to withstand the high winds generated by the Cyclone. Of those households reporting temporary displacement as a result of Cyclone Pam, 53% moved to a perceived safe place with friends or family within their community of origin, while 30% reported displacement to a community managed evacuation centre. While households described as “temporarily displaced” as a result of the cyclone had returned to their homes by the time of assessment, 29% of assessed households reported that they were hosting at least one other family at the time of assessment.

Shelter Damage: 81% of households reported that their shelter had sustained some level of damage as a result of the cyclone. However, when examining the intensity of damage, less than a quarter, 24%, of these households reported that all four core components of their shelter (roof, walls, floors, and doors / windows) had been completely destroyed. Roofs constructed from natangora leaves were identified as being the least able to withstand the high winds generated by Cyclone Pam, with 77% of households who used this roofing material reporting their roof was completely destroyed. Similarly, walls constructed from bamboo were identified as being the least durable, with 56% of households that used this material reporting that their walls were completely destroyed. Bamboo was also identified as the least durable floor material, with 63% of households who built their floors using this material reporting total damage. Damage to doors & windows was widespread across the affected area, with almost half of all assessed households, 47%, reporting that they had been completely destroyed.

Pre-Crisis Shelter Situation: Shelter construction and materials in urban and rural areas varied considerably across the assessed areas, particularly when comparing rural, peri-urban and urban locations. Overall, 57% of households reported that they had constructed their roof from corrugated galvanised iron (CGI) prior to Cyclone Pam. However, this was significantly more commonplace in urban and peri-urban locations (75% and 85%) compared to rural locations (58%). Conversely, traditional roofing materials, such as natangora leaves, were more commonly reported by households in rural locations, accounting for 37% of households. The most common pre-crisis wall materials identified through the assessment were CGI (used by 28% of households), concrete (22%), and bamboo (20%). Regarding floor

materials, 60% of households reported that they had constructed their shelter with a concrete floor prior to the Cyclone. However, a significant proportion of households, 25%, reported that their shelter was built directly on dirt, sand, or coral with no floor.

Land Tenure: 81% of households reported that they owned the land upon which their shelter was built. 10% of households reported that their shelter was built on land which was given to them rent-free by the land owner, and only a fraction of households reported that they were living on rent free land without the consent of the landowner. However, as a result of the sensitive nature of land tenure issues in the context of Vanuatu it should be expected that instances of households living on land rent free without the consent of the owner are likely to have been underreported.

Shelter Recovery: 72% of households reported that they had completed substantial repairs or reconstruction work on their shelter at the time of the assessment, confirming anecdotal evidence as to the high capacity for self-recovery inherent to Vanuatu. Just under half of households, 45%, reported that they were able to recover and recycle materials that were suitable for use during repair and reconstruction. Fixings and nails were the most commonly reported material required to facilitate the repair and reconstruction of shelter across the affected area, with 68% of households reporting this as an immediate need. However, the reported availability of fixings and nails, was considerably lower than required, with the majority of households, 61%, reporting that there was either no, or at most some, availability of this type of shelter support at the time of the assessment. For the most part, cyclone affected households had chosen to reconstruct their shelters using the same construction and materials as prior to the crisis, with 64% of households reporting having made no change to roof materials, 67% to walls, and 80% to floors.

Shelter Assistance: 46% of households across the affected area reported that they had not received emergency shelter assistance at the time of the assessment, with the largest gap identified in peri-urban locations, where 79% of households reported they had received no emergency shelter assistance. Taking into account households which reported damage to their shelter, those which reported not receiving any type of shelter assistance at the time of assessment, and those who reported they were unable to complete substantial repairs or reconstruction to their shelter, REACH identified a potential emergency shelter assistance gap of 1,236 households across the affected area. 22% of households reported that building materials, including nails and fixings, were their top priority recovery need, with an additional 16% reporting shelter and housing materials as an immediate recovery need.

Water and Sanitation: 31% of households reported that they utilised rainwater collection systems to meet household drinking water needs prior to Cyclone Pam. Widespread damage to this source of drinking water was identified across the affected area, with 35% of households reporting their rainwater collection system was non-operational at the time of the assessment. In the majority of locations, 69%, there was a decrease in the proportion of households that were able to access improved latrines, compared with prior to the cyclone. Sharing latrines with other households was widespread across the affected area, with 41% of households reporting that they shared their latrine with at least one other household.

Livelihoods: Subsistence farming was identified as being widespread across the affected area, with 85% of households reporting that they were engaged in this form of livelihood. While significant damage was sustained to subsistence gardens as a result of the cyclone, the vast majority of households, 85%, reported that they had completed replanting at the time of the assessment; again confirming anecdotal evidence as to the capacity of the affected population to recover quickly with limited assistance. Regarding income generating livelihoods, it was most common for households to report engagement in wage labour (37% of households), small business (27%), and the sale of garden / home products (25%). Only a minority of households that engaged in income generating livelihoods reported that they had not prioritised restarting livelihood activities above shelter recovery, highlighting the importance of income generation in self-recovery. Similarly, the majority of households reported that income generated through livelihood activities was very important to their medium to long term recovery.

Pre-existing vulnerabilities: 35% of households were identified to have at least one member who was pregnant or lactating at the time of the assessment. Furthermore, 33% and 15% of households respectively reported that they included at least one member with a chronic illness or a physical disability.

Priority needs: The most commonly reported first priority needs by households across the affected area were building tools, drinking water, and shelter / housing materials, reported by 22%, 18%, and 16% of households respectively.

RECOMMENDATIONS

Based on the analysis presented in this report, the following key recommendations for recovery phase shelter programming have been identified and endorsed by shelter cluster partners:

- A holistic approach to defining household level vulnerability should be developed; including consideration of households including individuals with specific vulnerabilities, as well households with shelter specific vulnerabilities;
- Displaced families, who continue to be hosted by friends and family throughout the affected area, should be considered as group with specific needs. Further assessment is required to understand why such families are unable to return home, while specific assistance should be considered to facilitate their return and relieve pressure on host families;
- Emergency shelter interventions need to be reviewed and updated for the specific context of Vanuatu, in order to ensure that future responses include modalities which better support self-recovery and are able to build on existing capacities and community-based support mechanisms;
- Medium to long term interventions that support shelter self-recovery should take into account beneficiaries' reported priorities, and consider supporting the recovery of income-generating livelihoods as well as the direct provision of shelter support;
- Recognising the time required to implement a comprehensive 'build back safer' strategy, the development of community shelters able to withstand sudden onset disasters should be explored;
- Damage to rainwater catchment systems presents an opportunity for shelter and WASH assistance packages, or joint interventions between shelter and WASH actors, to include roofing materials, tools, nails & fixings, guttering, and, where necessary, water tanks.
- A 'build back safer' approach should be integrated into recovery phase shelter programming as a result of the widespread use of pre-crisis shelter materials for repairs and reconstruction work.

ACKNOWLEDGMENTS

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GEOGRAPHICAL CLASSIFICATIONS

Province	The largest administrative unit below the national level, Vanuatu has six provinces
Island	The country is made up of roughly 80 islands, of which 63 are inhabited
Area Council	Each inhabited island is divided into Area Councils
Town/Village	The lowest administrative unit

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Cover photo: REACH, April 2015

METHODOLOGY

OBJECTIVES

In March 2015, at the request of the Global Shelter Cluster, REACH mobilised an assessment team consisting of one Assessment Coordinator and one GIS Officer, to conduct a detailed shelter and settlements vulnerability assessment in the aftermath of Tropical Cyclone Pam. The objectives of the assessment were to:

1. Verify the coverage of emergency shelter & NFI assistance and conduct gap analysis;
2. Enable the Shelter Cluster to define a comprehensive shelter & settlements recovery strategy;
3. Establish a baseline and method for a potential longitudinal study of recovery.

SAMPLING METHODOLOGY

Building on initial rapid assessments (IRAs) led by the Government of Vanuatu, REACH, in cooperation with representatives of the Shelter Cluster, selected a total of 13 sample sites for the assessment. The sample sites covered 18 islands, including 2 urban areas, Efate Urban (Port Vila) and Tanna Urban (Lénakel), and 1 peri-urban area, Efate Peri Urban. Based on initial rapid assessments, the 13 sample sites were selected as areas which had all sustained significant shelter damage from Cyclone Pam. The sampling strategy utilised throughout the assessment was designed to provide humanitarian actors with a representative sample of cyclone affected islands and sites with a confidence level of 90% and a margin of error of 10%.

DATA COLLECTION

Data collection was conducted between 15th April and 1st May 2015 by a team of enumerators seconded from Area Councils, Community Disaster Committees, UN-Habitat, the United States Peace Corps, the University of the South Pacific, the Vanuatu Red Cross, and the Vanuatu Youth Challenge, as well as persons recruited directly by REACH for the purposes of the assessment. Responses from participating households were recorded on an Open Data Kit based data collection tool deployed on Android smartphones.

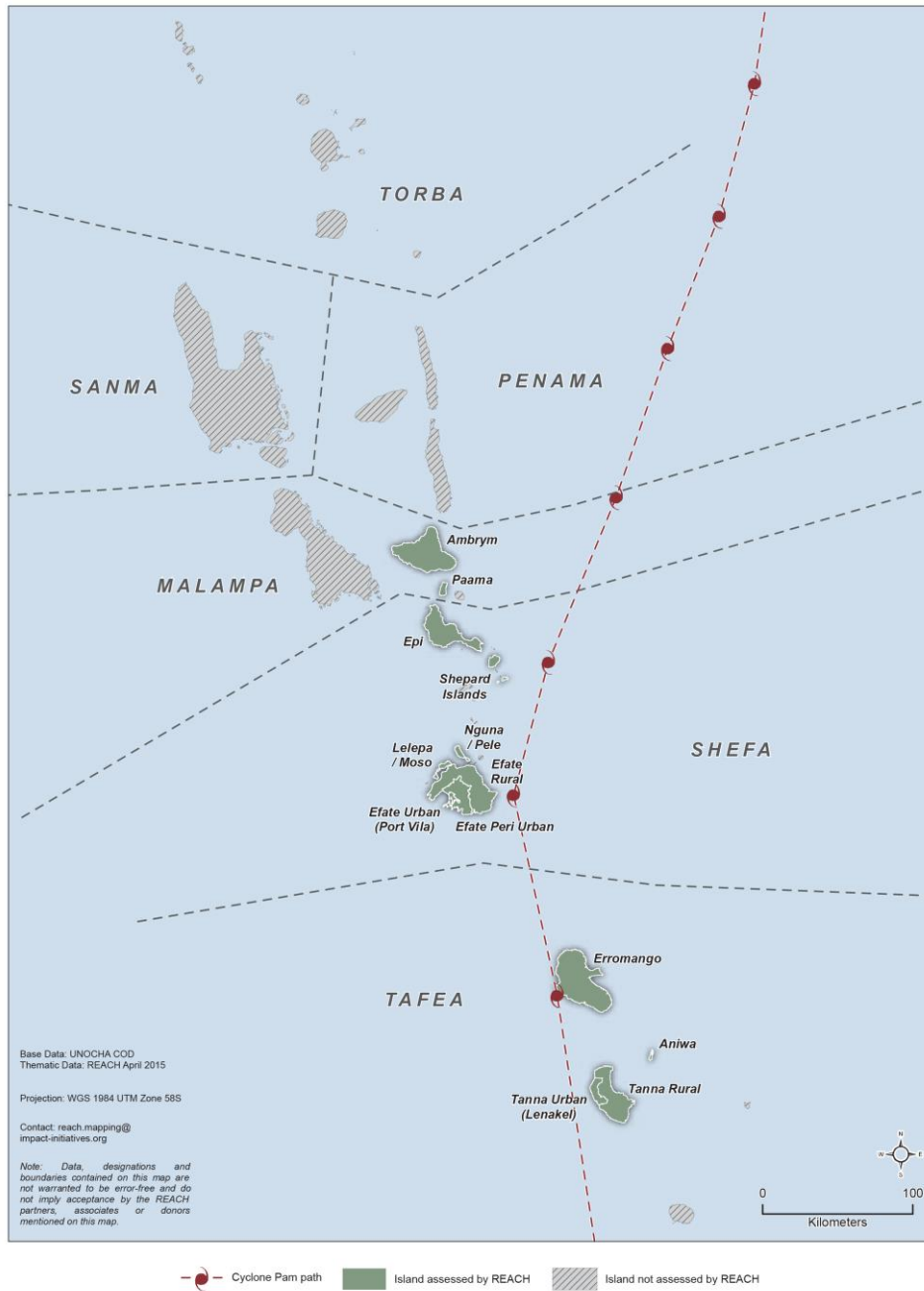
Table 1: Assessed households by island / sample site

Island / Sample Site	Target Households	Assessed Households
Ambrym	50	66
Aniwa	38	40
Efate Peri Urban	66	66
Efate Rural	64	65
Efate Urban (Port Vila)	66	66
Epi	64	75
Erromango	56	66
Lelepa / Moso	46	46
Nguna / Pele	59	60
Paama	57	57
Shepard Islands	62	64
Tanna Rural	66	67
Tanna Urban (Lénakel)	65	68
Total	759	806

LIMITATIONS

The overall confidence level of 90% and the margin of error of 10% correspond to indicators which are calculated from the full sample at the island / site level. Any findings which have been calculated based on specific sub-sets of the population, for example availability of reported material, equipment, or support needs for shelter recovery, invariably have a lower confidence level. As such, findings calculated on this basis should only be considered as indicative.

Map 1: Sample sites



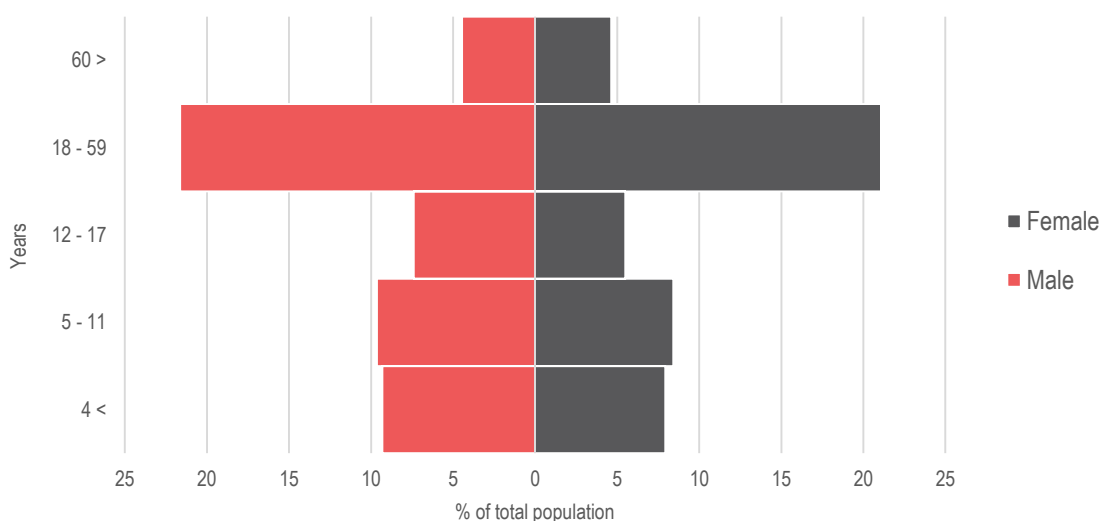
FINDINGS

This section of the report presents findings from household level data collection conducted between 15th April and 1st May 2015. Analysis has been presented in sub sections which detail findings regarding demographics, displacement, pre-crisis shelter situation, land tenure, shelter damage, shelter recovery, water and sanitation, livelihoods, mass communications, and assistance. The findings presented throughout this section were endorsed by Shelter Cluster partners following a presentation delivered by REACH on 15th May 2015.

DEMOGRAPHICS

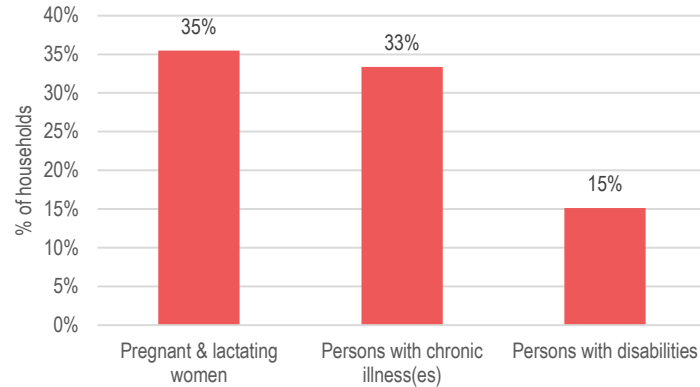
An almost equal gender split was identified across the affected area, with the assessed population found to be 52% male and 48% female. According to assessment data, 57% of the population in the affected area is either under 18 years old (48%) or over 60 years old (9%). This population of dependents is being supported by the remainder of the working age population (43%). A low prevalence of either female or elderly (60+) headed households was identified through the assessment, representing only 5% and 4% of households respectively.

Figure 1: Population pyramid



A considerable proportion of households across the affected area reported the presence of individuals belonging to specific vulnerable groups in their household. Overall, 35% reported that their household included one or more pregnant or lactating woman, 33% included a person with a chronic illness, and 15% included a person with a disability. As a result of this considerable proportion of individuals with specific vulnerabilities, if shelter cluster partners opt to conduct household level targeting, these pre-existing vulnerabilities should be taken into account.

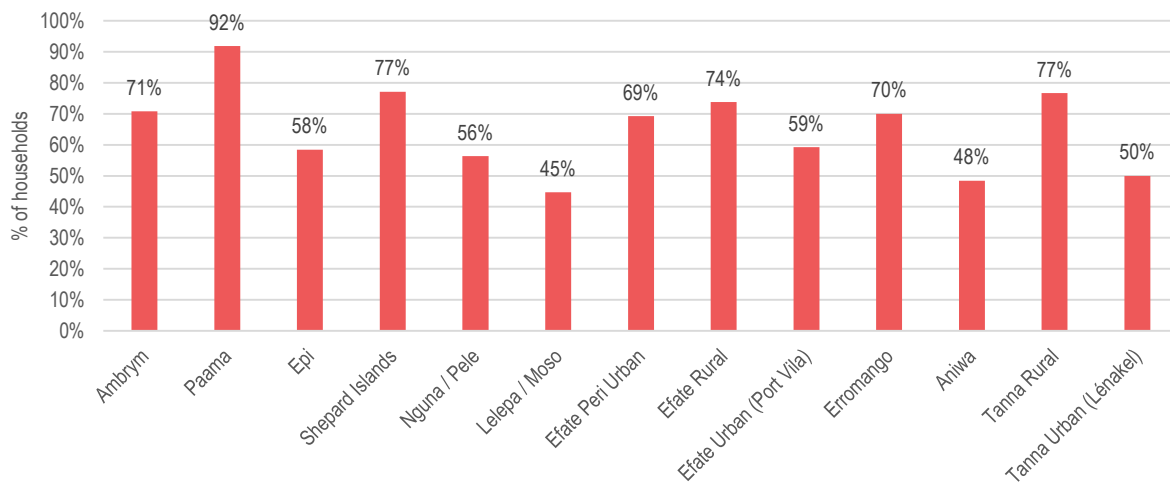
Figure 2: Households reporting the presence of persons with pre-existing vulnerabilities in their household



DISPLACEMENT

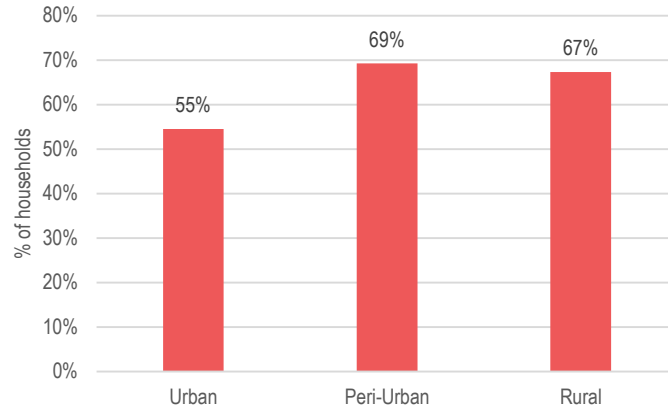
Households were categorised as temporarily displaced if they had taken the decision to move to a new location during Cyclone Pam and had since returned to their shelter at the time of assessment. This type of displacement was reportedly widespread across the affected area, with 65% of households reporting that they had relocated to a safe location during the cyclone. The highest levels of temporary displacement were reported in Paama, Tanna Rural, and the Shepard Islands, 92%, 77%, and 77% respectively. The significant levels of temporary displacement across the affected area highlights a prevailing lack of confidence in the durability of personal shelters for the majority of households (for details see *figure 13: Households reporting temporary displacement by roof (left) and wall (right) materials below*).

Figure 3: Households reporting temporary displacement as a result of Cyclone Pam



Reports of temporary displacement as a result of Cyclone Pam were slightly more prevalent in peri-urban locations and rural locations, 69% and 67% respectively, when compared to urban areas, 55%. This may suggest a slightly higher confidence in shelter durability in urban locations compared to peri-urban or rural locations.

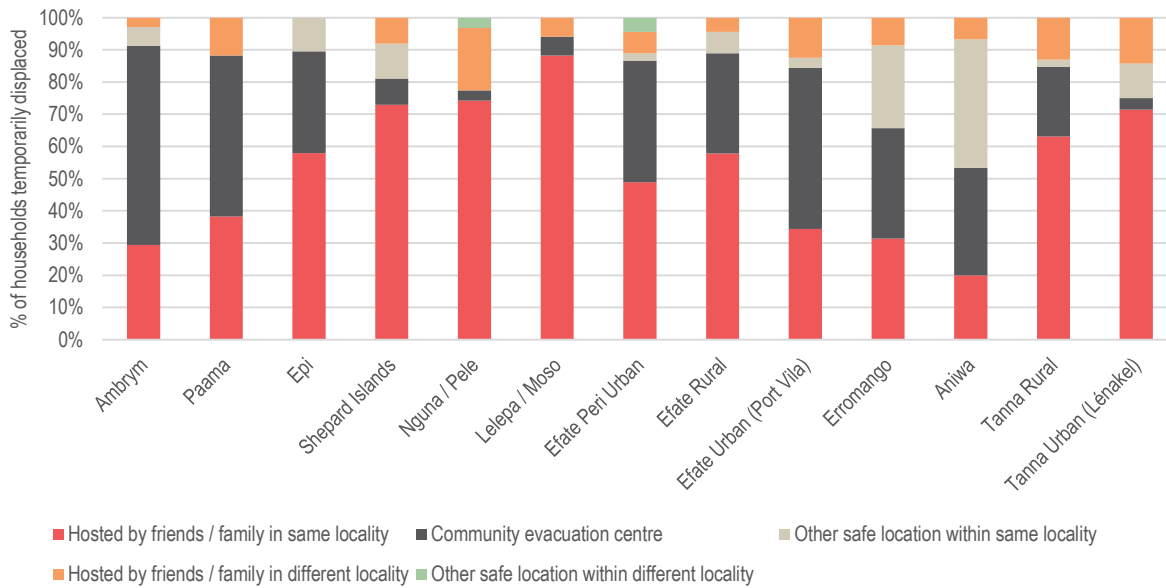
Figure 4: Reported temporary displacement by urban, peri-urban, and rural area



Of those households who were temporarily displaced as a result of Cyclone Pam, the majority (53%) reported staying with family or friends within their community of origin. A considerable proportion of households across the affected area, 30%, reported that they sought refuge from Cyclone Pam in a community managed evacuation centre. Such structures included schools, churches, and airport terminals.

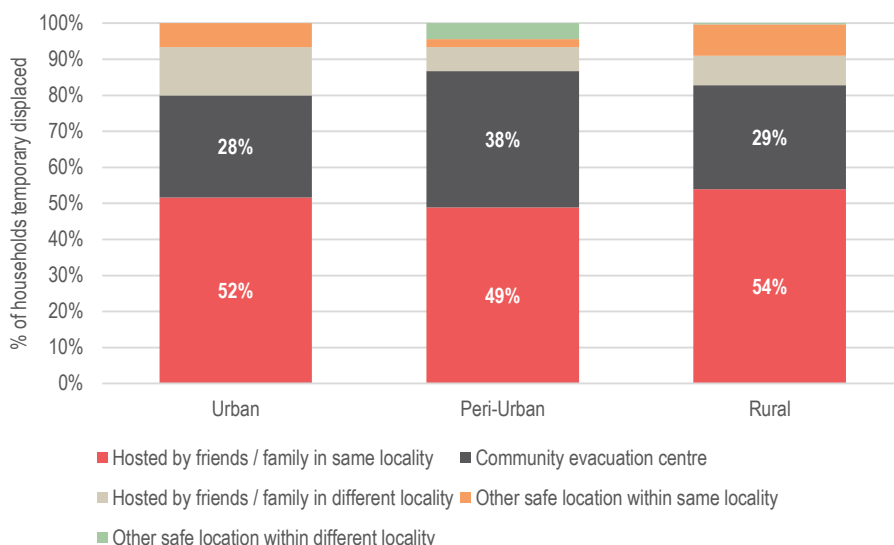
The location in which households chose to seek refuge from the Cyclone differed considerably by location. In Ambrym, Port Vila, and Paama, it was most common for households to have been temporarily displaced to a community managed evacuation centre, 62%, 50%, and 50% respectively. The prevalence of households that were temporarily displaced to community managed evacuation centres in these locations suggests the presence of more developed community disaster mitigation mechanisms. Conversely, in Nguna / Pele, the Shepard Islands, and Tanna Rural the majority of households were displaced to shelters belonging to friends or family in their respective communities' of origin, 72%, 73%, and 63% respectively; suggesting a lack of formal disaster mitigation mechanisms and a reliance on personal connections to identify safe locations in the event of a sudden onset disaster.

Figure 5: Reported temporary displacement locations



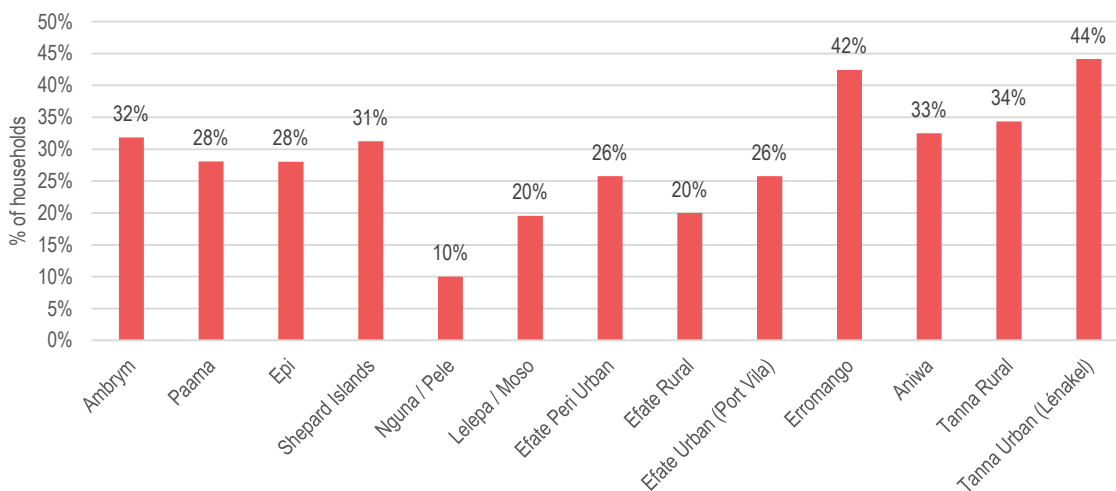
When comparing displacement as a result of the cyclone, temporary displacement locations were reported to be broadly the same between urban, peri-urban, and rural areas. However, there is a slight prevalence amongst households that were temporarily displaced in urban areas to seek shelter with friends / family in a different locality (13%), compared to in peri-urban (7%) or rural locations (8%).

Figure 6: Temporary displacement locations, by urban, peri-urban and rural area



At the time of the assessment, 29% of households reported that they were continuing to host displaced friends and / or family members in their shelter. This was most prevalent in Lenakel and Erromango, where 44% and 42% of households were hosting displaced persons, almost one month after Cyclone Pam arrived in Vanuatu. The continued need for households to host displaced persons will likely put increased pressure on available household resources (such as food and drinking water), thus reducing the resilience of hosting households. This situation also has an implication on the provision of assistance. At present, humanitarian actors are, for the most part, using an average family size of 5 persons when designing assistance packages. Therefore, the possibility of increasing the level of assistance for households that continue to host displaced friends and / or family should be explored.

Figure 7: Households hosting displaced friends or family at the time of assessment



PRE-CRISIS SHELTER SITUATION

As part of the assessment, households were asked about the primary construction materials of the core elements of their shelter (roof, walls, floor and doors / windows) prior to the cyclone, in order to understand the extent to which different types of shelter construction were more or less vulnerable to cyclone damage. While results are helpful to categorise shelter and understand vulnerability in a general sense, it should be noted that material of each shelter component is only a proxy for its construction and quality.

Immediately prior to Cyclone Pam the predominant roofing material utilised by households throughout the affected area was corrugated galvanised iron (CGI), 57%. Some significant differences in shelter roofing can however be observed between locations. CGI sheets were utilised as the primary roofing material for the vast majority of households in Nguna / Pele, Lelepa / Moso, and Efate Peri Urban, 98%, 89% and 82% respectively, while in Ambrym the majority of households, 79%, utilised natangora leaves¹ to construct the roofs of their shelters. Other locations in which widespread usage of natangora leaves as roofing material was observed include Paama, 46%, and Epi, 45%.

Figure 8: Pre-crisis roofing materials

	CGI	CGI & Other	Natangora	Natangora & other	Other thatch mix	Other
Ambrym	11%	0%	79%	9%	0%	2%
Paama	47%	0%	46%	5%	0%	2%
Epi	45%	5%	45%	3%	0%	1%
Shepard Islands	73%	0%	16%	9%	2%	0%
Nguna / Pele	98%	0%	2%	0%	0%	0%
Lelepa / Moso	89%	0%	4%	4%	0%	2%
Efate Peri Urban	82%	3%	6%	8%	0%	2%
Efate Rural	74%	3%	18%	5%	0%	0%
Efate Urban (Port Vila)	68%	27%	0%	2%	2%	2%
Erromango	41%	3%	33%	21%	2%	0%
Aniwa	53%	15%	8%	3%	23%	0%
Tanna Rural	31%	9%	16%	19%	22%	1%
Tanna Urban (Lénakel)	41%	15%	19%	4%	16%	4%

CGI as a roofing material, either solely CGI or a CGI & other material mix, was more commonly reported by households in urban and peri-urban locations (75% and 85%) than in rural locations (58%). This can be explained by the relatively high costs associated with transporting CGI from the urban / peri-urban locations of Port Vila and Lenakel to rural locations. Conversely, the use of natangora leaves, and mixes, as a roofing material was more commonly reported by households in rural locations (37%) when compared with urban or peri-urban locations (13% and 15%). This can be attributed to the higher prevalence of natangora cultivation in rural locations compared with urban / peri-urban locations.

¹ The leaves from the Natangora (Sago) Palm are thatched into tiles, traditionally by the women of the community, to create durable roofing and wall material. Widespread throughout Melanesia, the thatched tiles are layered one over the other to provide protection from the elements and are predominately found on traditional structures.

Figure 9: Pre-crisis roof materials, by urban, by peri-urban, and rural area

	CGI	CGI & Other	Natangora	Natangora & other	Other thatch mix	Other
Urban	54%	21%	10%	3%	9%	3%
Peri-Urban	82%	3%	6%	8%	0%	2%
Rural	55%	3%	29%	8%	4%	1%

With regards to materials used to construct walls prior to Cyclone Pam, it was most common for households across the affected area to use either CGI (28%), concrete blocks (22%), or Bamboo (20%). Over half of households, 52%, in both Lelepa / Moso and the Shepard Islands used CGI sheets to construct their walls prior to the cyclone. Concrete was most commonly utilised for wall material in Nguna / Pele (48%) and Efate Peri Urban (39%). Utilisation of bamboo as a wall material was most common in Ambrym (67%) and Paama (44%). In addition to walls being primarily constructed of a single material, the use of mixed material constructions, either concrete, timber, or CGI plus other materials, was commonly reported across the majority of the affected area.

Figure 10: Pre-crisis wall materials

	Bamboo	CGI	CGI & other	Concrete	Concrete & other	Timber & other	Other
Ambrym	67%	3%	0%	20%	3%	8%	0%
Paama	44%	21%	2%	11%	18%	5%	0%
Epi	23%	27%	5%	15%	12%	11%	8%
Shepard Islands	0%	52%	2%	28%	3%	5%	11%
Nguna / Pele	2%	38%	5%	48%	5%	2%	0%
Lelepa / Moso	0%	52%	0%	30%	11%	2%	4%
Efate Peri Urban	5%	24%	5%	39%	15%	6%	6%
Efate Rural	3%	51%	3%	20%	14%	8%	2%
Efate Urban (Port Vila)	0%	38%	5%	17%	33%	3%	5%
Erromango	32%	14%	14%	11%	12%	12%	6%
Aniwa	10%	33%	13%	8%	23%	10%	5%
Tanna Rural	30%	7%	13%	15%	13%	9%	12%
Tanna Urban (Lénakel)	32%	15%	1%	22%	16%	12%	1%

Use of CGI as a wall material was reported by similar proportions of households in urban, peri-urban (both 29%), and rural locations (34%). Using concrete to construct walls was however more commonly reported in urban and peri-urban locations (44% and 55%) than in rural locations (31%). As with roofing materials, the relative lack of shelters with concrete walls in rural areas can be attributed to the considerable costs associated with transporting this construction material to rural locations.

Figure 11: Pre-crisis wall materials, by urban, peri-urban, and rural area

	Bamboo	CGI	CGI & other	Concrete	Concrete & other	Timber & other	Other
Urban	16%	26%	3%	19%	25%	7%	3%
Peri-Urban	5%	24%	5%	39%	15%	6%	6%
Rural	22%	29%	6%	20%	11%	7%	5%

60% of households across the affected area reported that they had a concrete floor in their shelter prior to Cyclone Pam. This floor type was reported by the vast majority of households, 83%, in both Lelepa / Moso and Nguna / Pele, in addition to significant proportions in the Shepard Islands, Paama, and Efate Urban (Port Vila), 72%, 70%, and 68% respectively. While the majority was able to construct a floor in their shelter made of concrete, a quarter of all households across the affected area reported that they constructed their shelter on dirt, sand, or coral with no floor; a shelter construction practice which was most commonly reported in Erromango and Ainwa, 44% and 38% respectively.

Figure 12: Pre-crisis floor materials

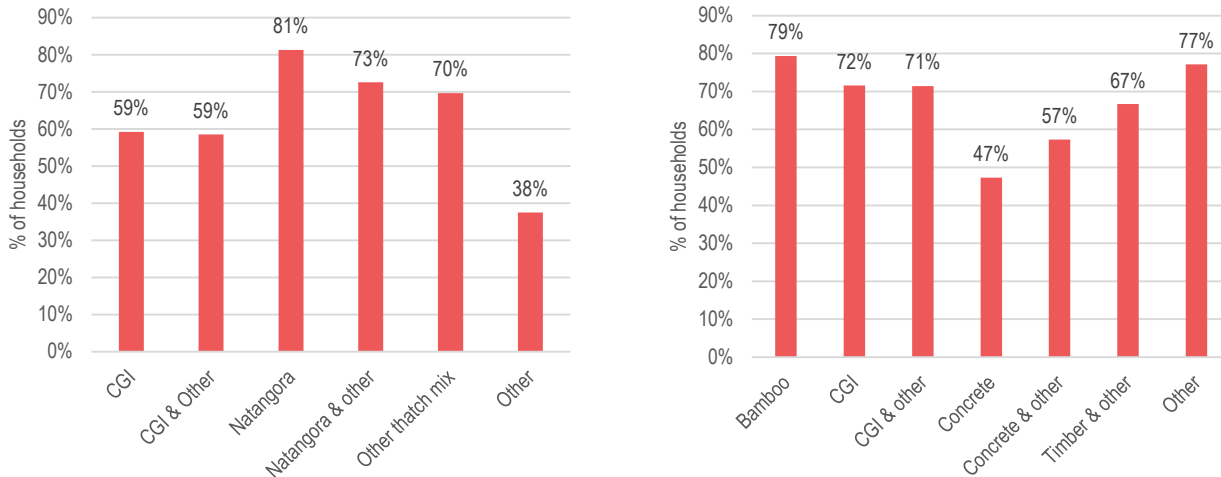
	Bamboo & other	Concrete	Coral / Dirt / Sand	Milled timber & other	Other ²
Ambrym	12%	50%	11%	2%	26%
Paama	7%	70%	12%	7%	4%
Epi	3%	52%	24%	17%	4%
Shepard Islands	2%	72%	20%	3%	3%
Nguna / Pele	0%	83%	17%	0%	0%
Lelepa / Moso	0%	83%	17%	0%	0%
Efate Peri Urban	0%	68%	26%	3%	3%
Efate Rural	2%	65%	34%	0%	0%
Efate Urban (Port Vila)	0%	68%	24%	8%	0%
Erromango	3%	39%	44%	12%	2%
Aniwa	18%	43%	38%	3%	0%
Tanna Rural	39%	37%	18%	4%	1%
Tanna Urban (Lénakel)	4%	54%	37%	3%	1%

It can be inferred from data collected on temporary displacement that households were on the whole less confident in their shelter's ability to withstand the high speed winds generated by Cyclone Pam if their roofs were made of natural materials. The vast majority of households whose roofs were constructed from natangora, natangora & other mixes, or other thatch mixes were temporarily displaced to a perceived safer location during Cyclone Pam, 81%, 74%, and 71% of households respectively. A similar pattern can be observed with wall materials. Households with walls constructed from either bamboo or CGI sheets prior to Cyclone Pam were much more likely to have reported temporary displacement than those with walls made from other materials such as concrete, 79% and 72% of households respectively compared to 47% of households overall.

Despite the clear correlation between temporary displacement and shelter materials it should be noted that there are other possible explanations for displacement in the context of Vanuatu. With the community centric culture inherent to Vanuatu, it is possible that temporarily displaced households chose the comfort of being with a group during Cyclone Pam rather than staying in their own shelter. In addition, the decision of households to move to a temporary displacement location could have been influenced by the availability of perceived safe locations, the travel distance required, and the availability of suitable methods of transportation.

² 'Other' includes black palm and other thatch mixes amongst other reported floor materials

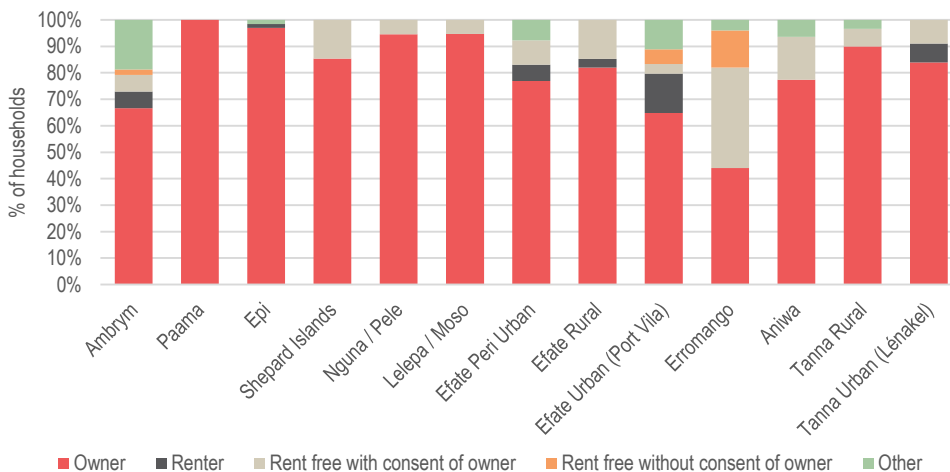
Figure 13: Households reporting temporary displacement by roof materials (left) and wall materials (right)



LAND TENURE

Land tenure remains a sensitive topic in Vanuatu as a result of complications resulting from a disconnect between sometimes complex traditional customary ownership laws and contemporary resource management systems³. As such, to ensure that future shelter programming takes into account as much as possible the realities of land ownership in Vanuatu, households were asked to categorise their land tenure status. However, as a result of the sensitive nature of land tenure issues in the context of Vanuatu it is likely that instances of, for example, living on land rent free without the consent of the owner were underreported; particularly in informal settlements located in peri-urban locations. It was most commonly reported across the affected areas that households owned the plot of land upon which their shelter was constructed (81%). While being almost non-existent in the majority of sample sites, households reporting renting their shelter made up 15% of household in Efate Urban (Port Vila). On Erromango it was very common for households to report that their shelter was constructed on land which was given to them rent free with the consent of the owner, 38% of households.

Figure 14: Reported Land tenure status



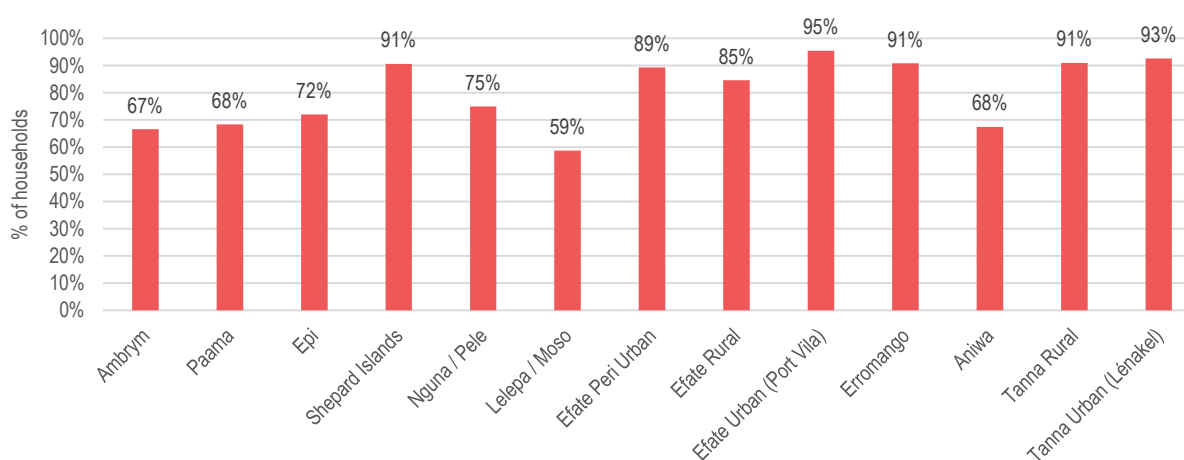
³ Nari, R (2000), 'Land Tenure and Resource Management: A Major Challenge in Vanuatu', *Pacific Economic Bulletin*, Volume 15 Number 2

SHELTER DAMAGE

Overall, 81% of households throughout the affected area reported that their shelter had sustained some level of damage as a result of Cyclone Pam. The highest proportions of households reporting that their shelter had been damaged were identified in Efate Urban (Port Vila), 95%, Tanna Urban (Lenakel), 93%, Tanna Urban, and the Shepard Islands, and Erromango, all 91%. These locations are those which were subjected to the highest wind speeds as Cyclone Pam passed through Vanuatu.

It should however be noted that this data takes into account *any* level of damage sustained by a shelter, no matter how small. To gain a more detailed understanding of damage levels across the affected area, REACH teams captured reported levels of damage sustained to core shelter components, roofs, walls, floors, and doors & windows, based on component materials (see *pre-crisis shelter situation* above).

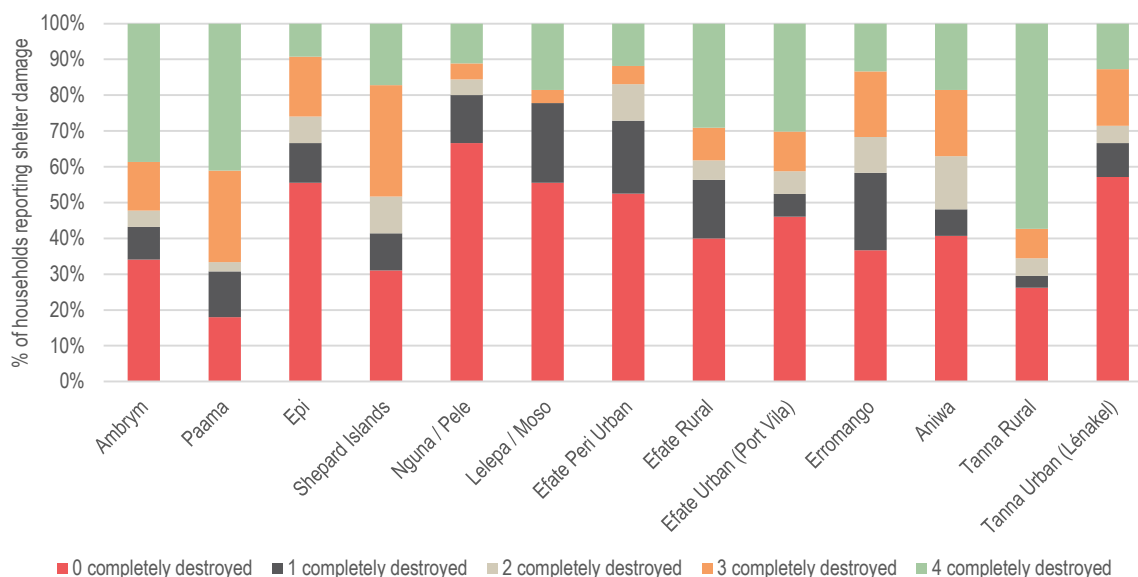
Figure 15: Households reporting damage to shelter



Over half of households across the affected area, 57%, reported that one or more of their core shelter components (roof, walls, floor, windows and doors) was completely destroyed as a result of Cyclone Pam. Using the reported number of shelter components damaged as a proxy for intensity of damage, assessment data suggests that the intensity of damage was highest in Tanna Rural, Paama, and Ambrym, where 57%, 41%, and 39% of households reported that all four core components of their shelter had been totally destroyed during the cyclone.

Conversely, assessment data suggests that the overall intensity of damage was lowest in Nguna / Pele, Tanna Urban (Lenakel), Lelepa / Moso, and Epi, where 67%, 57%, 56%, and 56% of households respectively reported that none of their core shelter components had been totally destroyed during the Cyclone.

Figure 16: Number of shelter components reported to be completely destroyed



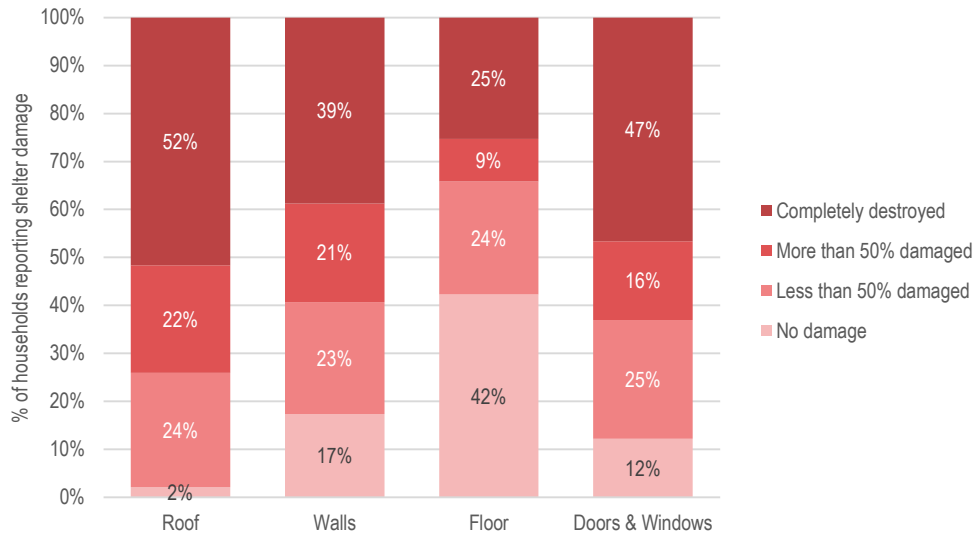
Of those households who reported damage to their shelter, over half (52%), across the affected area reported that their roof had been completely destroyed as a result of Cyclone Pam. A further 22% reported that 50% or more of their roof had been damaged, and 24% reported that less than 50% had been damaged. Only 2% of households reported that their roof had sustained no damage during the cyclone. This shows that roofs were the shelter component most vulnerable to the high speed winds generated by Cyclone Pam and represents a potential area of focus for future ‘build back safer’ shelter interventions.

39% of households which were identified as having sustained shelter damage reported that their shelters’ walls had been completely destroyed as a result of Cyclone Pam. Furthermore, 21% reported that 50% or more of their walls had been damaged, and 23% that less than 50% had been damaged. 17% of households reported that their walls had sustained no damage during the Cyclone. As a result, while still having sustained considerable levels of damage, pre-crisis walls appear to have been significantly more resilient to the effects of the Cyclone when compared to roofs.

Floors appear to have been the shelter component which was most resilient to the effects of Cyclone Pam. 25% of households reported that this component had been completely destroyed during the Cyclone. A further 9% reported that 50% or more of their floor had been damaged and 25% reported that less than 50% had been damaged. Finally, 42% of households reported that their floor had sustained no damage during Cyclone Pam.

On the whole, significant damages to doors and windows as a result of Cyclone Pam were identified across the affected area. Almost half, 47%, of the 98% of households which reported having doors & windows prior to Cyclone Pam reported that they had been completely destroyed. Only 12% of households reported that they had sustained no damage to this building component.

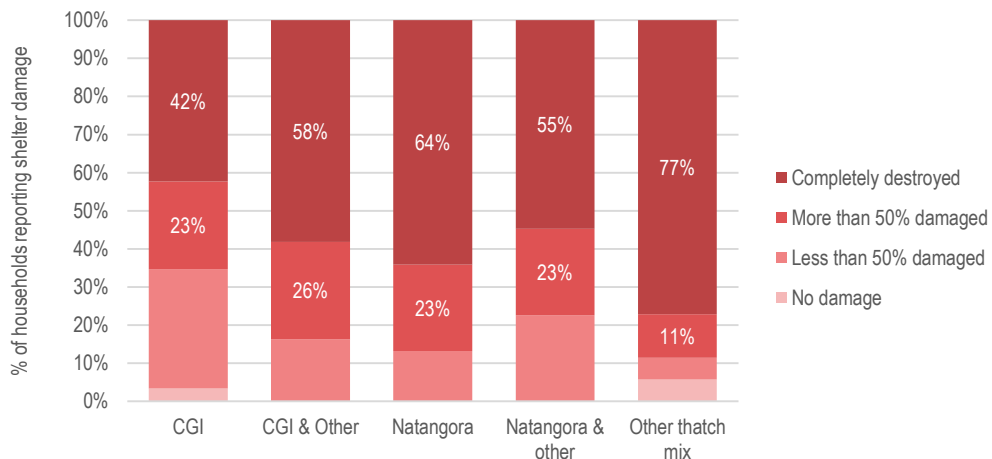
Figure 17: Reported damage by shelter component



Roofs constructed from thatching leaves other than natangora, for example coconut palms, were identified as having sustained the highest levels of damage. 77% of households which utilised this roofing material for construction reported that their roof had been completely destroyed as a result of the Cyclone. Similarly, both roofs constructed from natangora and natangora & other materials were reported to have sustained high levels of damage, with 64% and 55% of households utilising this material reporting their roofs had been completely destroyed.

Roofs constructed from both CGI and CGI & other mixes were also reported to have sustained high levels of damage as a result of the Cyclone, with the latter being less resilient according to assessment data: 58% of households reported their roofs made of this material were completely destroyed, compared to 42% utilising the former material.

Figure 18: Roof damage, by material

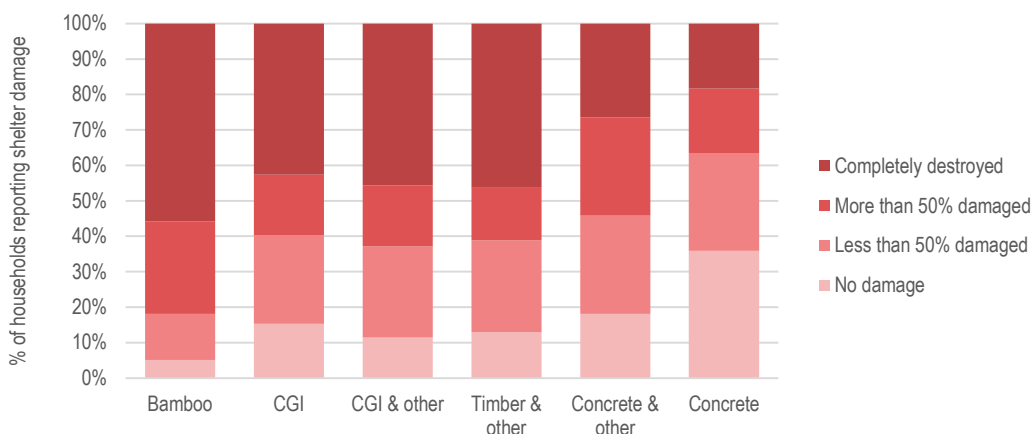


According to assessment data, bamboo walls were the least resilient material to the effects of the Cyclone, with 56% of households that utilised this material for wall construction reporting complete destruction. Furthermore, only 5% of households using this material reported no damage. In addition to bamboo, CGI, CGI & other mixes, and timber walls

were all identified as less-resilient wall materials, with 43%, 46%, and 46% of households which utilised these materials reporting that their walls were completely destroyed.

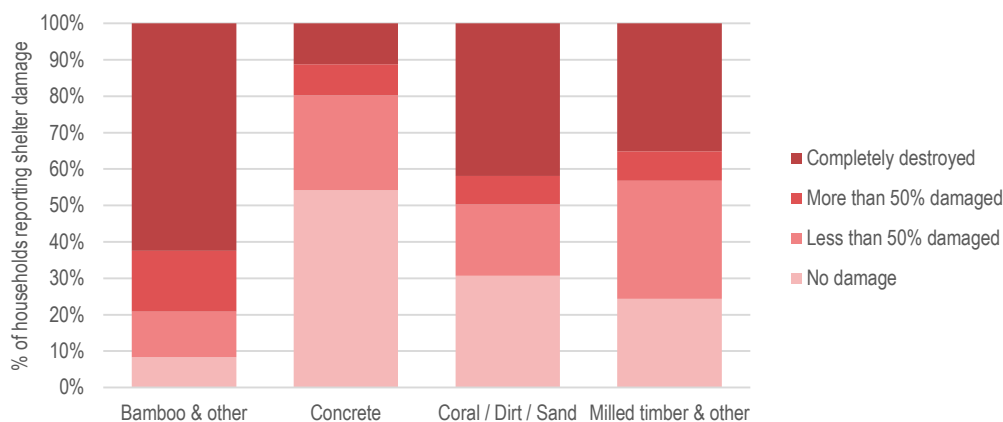
Concrete walls were identified as being the most resilient wall material; 38% of households which utilised this material for wall construction reported no damage as a result of the Cyclone, with an additional 27% reported 50% or less damage.

Figure 19: Wall damage, by material



In a similar manner, bamboo was also reported to be the least resilient material for floor construction. 63% of households which had used a mix of bamboo and other materials for construction reported that their floors had been completely destroyed as a result of the Cyclone. In addition, as with walls, concrete proved to be the most durable floor material. Over half, 54%, of households which had used this material in floor construction reported no damage.

Figure 20: Floor damage, by material



Individual shelter components were more commonly reported as completely destroyed in rural locations when compared with urban or peri-urban locations; roofs – 54%, walls 43%, floors, 29%, and doors / windows, 50%. This suggests that in general construction practices in rural locations result in shelters that are less resistant to cyclones than those in urban or peri-urban locations. Interestingly, despite the informal nature of many of the settlements in peri-urban locations, it was more common for individual shelter components to have been completely destroyed or to have sustained 50% or more damage in urban locations compared to those in surrounding peri-urban locations.

Figure 21: Roof (left) and wall (right) damage by urban, peri-urban, and rural area

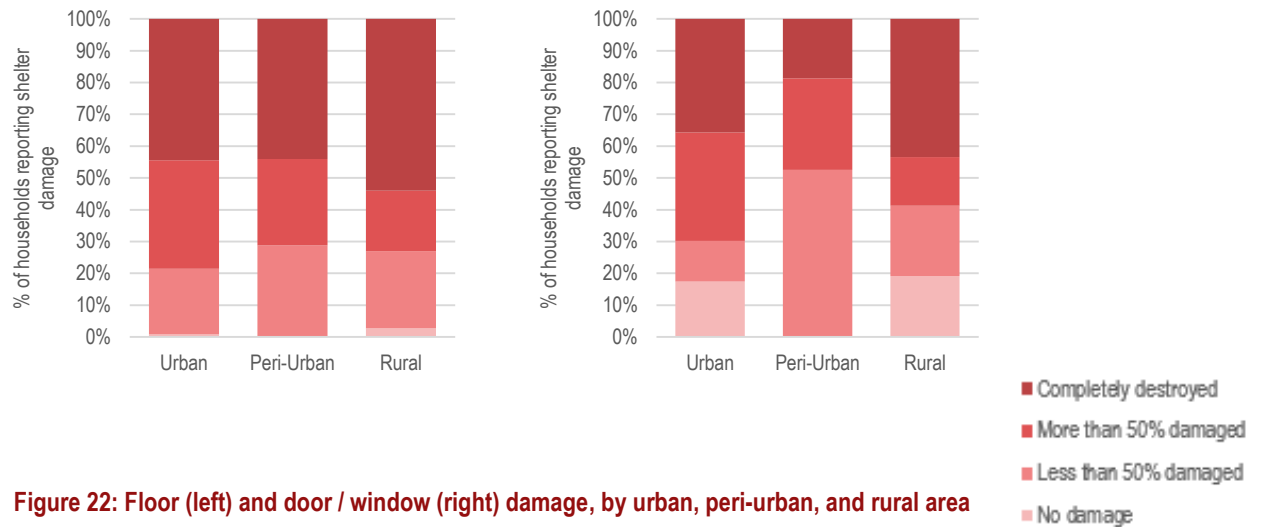
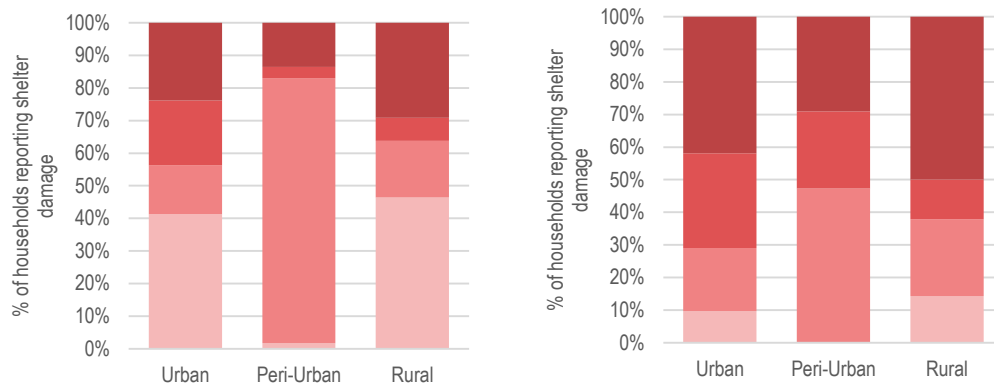


Figure 22: Floor (left) and door / window (right) damage, by urban, peri-urban, and rural area

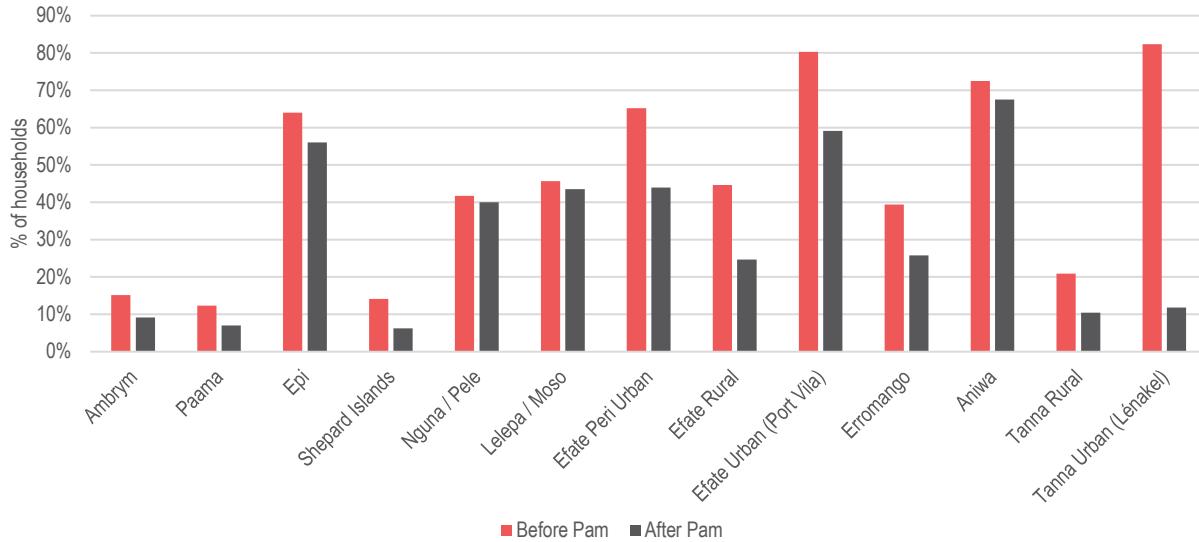


Prior to Cyclone Pam, 46% of households across the affected area reported they had electricity in their homes. Of this proportion over half of households, 54%, reported that electricity supply came from solar panels installed on their roofs. Only a minority of households was able to access electricity supply from the grid, 38%. Despite almost half of households having an electrical supply to their shelter prior to Cyclone Pam, there are significant variations between different geographic locations; ranging from only 12% of households in Paama, to 82% of households in Tanna Urban (Lenakel).

The most significant damage to electricity supply was observed in Tanna Urban (Lenakel). As above, 82% of households reported that they had received electricity supply at their shelter prior to Cyclone Pam (primarily from their grid, 72%). However, as a result of the Cyclone this proportion had fallen to only 12% of households at the time of the assessment⁴.

⁴ Note: significant repair works to the grid were being conducted by Unelco (Vanuatu’s private utilities provider) at the time of the assessment. It is therefore highly likely that grid electrical services have now been, at least partially, restored.

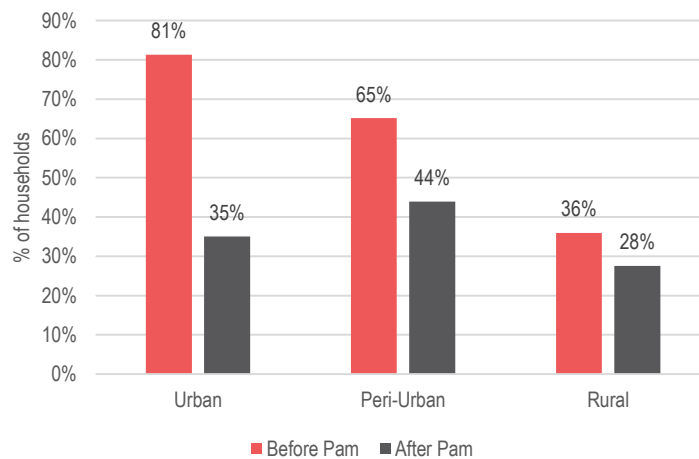
Figure 23: Households with access to electricity before & after Cyclone Pam



Electricity supply to shelters was significantly more common in urban and peri-urban locations prior to Cyclone Pam, 81% and 65% respectively, compared to only 36% in rural locations. This can be explained by the almost universal absence of electrical grid infrastructure in the vast majority of rural locations throughout the affected area and the high start-up costs associated with installing solar panels on roofs.

Electricity supply was most severely affected in urban areas, with a 57% decrease in the proportion of households reporting electricity supply at their shelter as a result of the cyclone. Where households did have electricity at their shelters in rural areas, only a 23% decrease in availability was reported. This can be explained as a result of 88% of these households relying on solar power and thus having the ability to store roof panels in a safe location during the cyclone and re-install in the aftermath.

Figure 24: Households reporting access to electricity supply by urban, peri-urban, and rural area

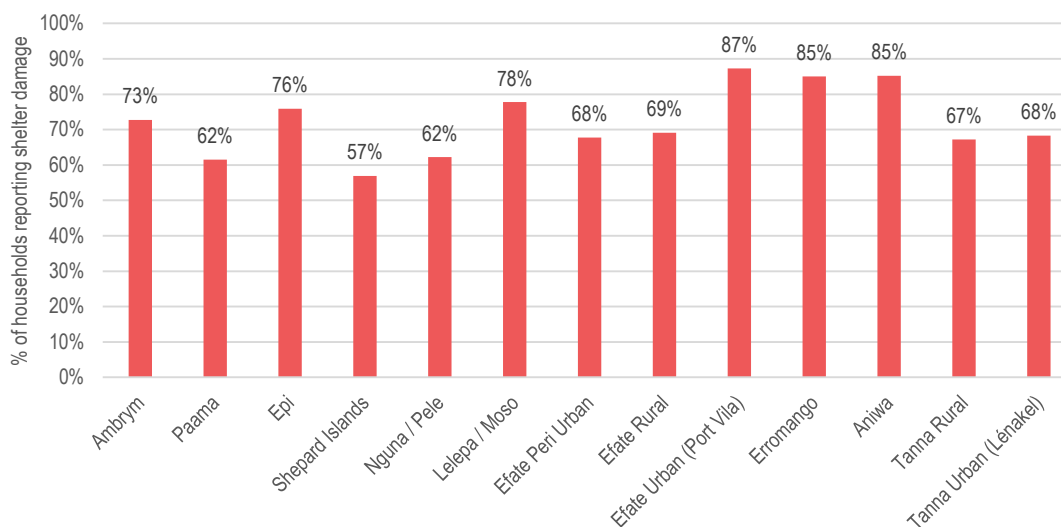


SHELTER RECOVERY

Confirming anecdotal evidence of rapid recovery throughout the affected area of Vanuatu, where many affected households were reported to have quickly rebuilt at least a makeshift shelter in the immediate aftermath of the cyclone, 72% of households reported that they had completed substantial repair / reconstruction work on their shelter by the time of assessment⁵. Indeed, rapid recovery was identified in all assessed locations, with proportion of households having completed substantial repairs ranging from 57% in the Shepard Islands, to 87%, in Efate Urban (Port Vila).

The difference in recovery rates within this wide reported range can be explained by the significantly higher ability of households in Efate Urban (Port Vila) to access materials and tools required for repairs and rebuilding in local markets. In contrast, the Shepard Islands is almost wholly reliant on local boat transportation for such materials and tools, which was severely disrupted as a result of the cyclone due to damage to boats.

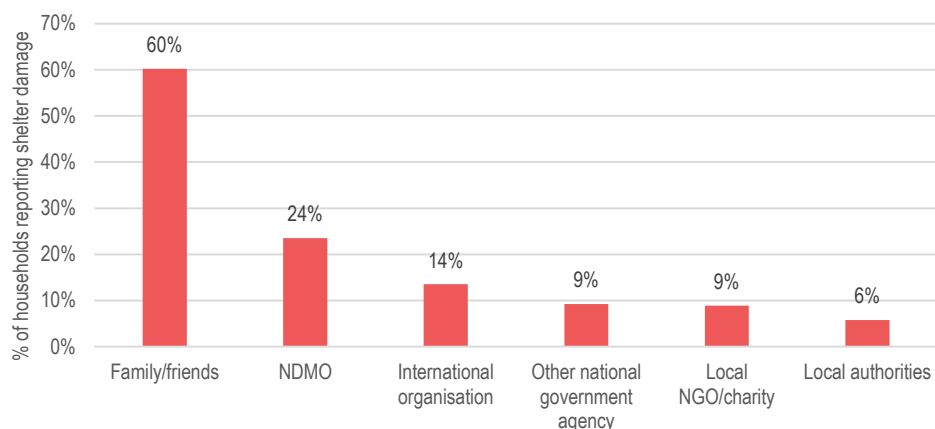
Figure 25: Households reporting having completed substantial shelter repairs or reconstruction



The majority of households across the affected area, 60%, reported that they had already completed substantial repairs or reconstruction by the time of assessment, with no external support. For the remaining 40% of households that reported receiving some kind of external support, the vast majority, 60%, reported that this support had come from family and / or friends. This highlights the strength of community based support mechanisms in the aftermath of disasters in Vanuatu, and presents an opportunity for the integration of community members in disaster preparedness and 'build back better' shelter programming in the recovery phase.

⁵ For the purposes of this assessment substantial repair / reconstruction work was defined by households which perceived that their immediate shelter needs had been met.

Figure 26: Reported source of repair or reconstruction support

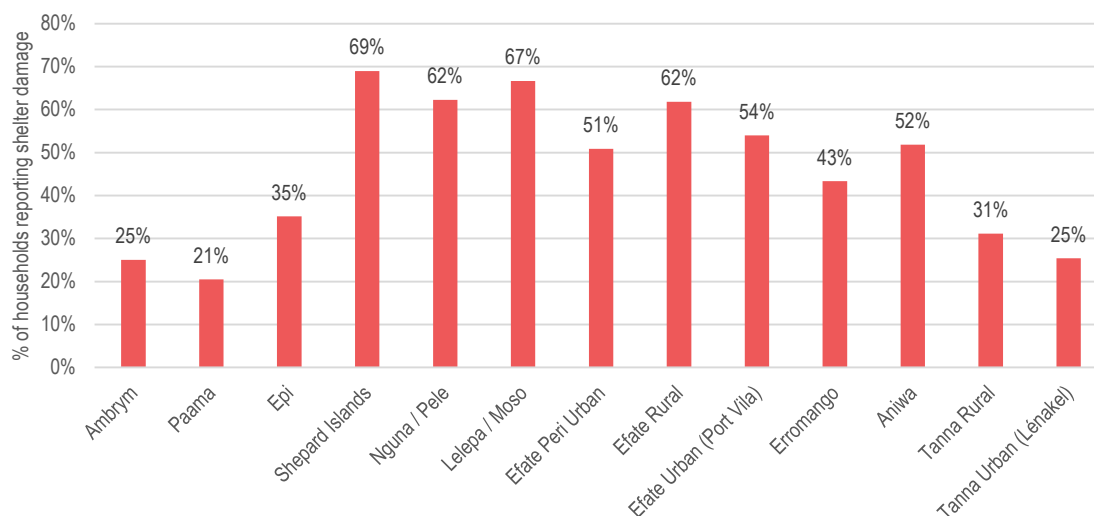


Less than half of households, 45%, reported that they could recover materials in a condition suitable for use during repairs or reconstruction. However, this proportion was found to vary considerably by location. Households in the Shepard Islands, Lelepa / Moso, and Nguna / Pele most commonly reported that they were able to recover suitable materials, 69%, 67%, and 62% of households respectively. Conversely, in Paama, Tanna Urban (Lenakel), and Ambrym the prevalence of households with the ability to recover suitable shelter materials was the lowest, 21%, 25%, and 25% respectively.

Pre-crisis roof materials in the Shepard Islands, Lelepa / Moso, and Nguna / Pele were predominately made of CGI and walls of either CGI (Lelepa / Moso and the Shepard Islands) or concrete (Nguna / Pele). While in Paama, Tanna Urban (Lenakel), and Ambrym roofs were most commonly constructed with natangora, natangora & other mixes, or other thatching and walls from bamboo. This suggests that CGI and concrete slabs, while still being vulnerable to the effects of high winds during a Cyclone, are significantly easier to recover in a suitable condition for repairs and reconstruction than natural materials such as natangora, other thatching, and bamboo.

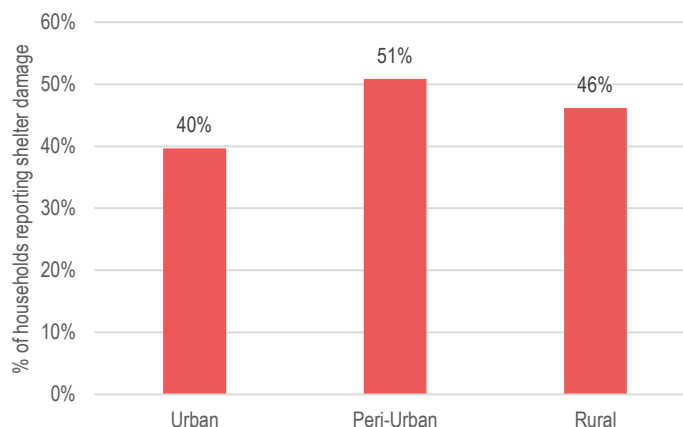
The significant time it will take for communities in the affected area to re-establish stocks of natural building materials, for example natangora, bamboo, and other thatching leaves, represents an additional potential for increased vulnerability. Shelter interventions should therefore support both the re-establishment of natural building material stocks and facilitate the delivery of such materials from other locations not significantly affected or unaffected by Cyclone Pam.

Figure 27: Households reporting being able to use recovered materials for shelter repair / reconstruction



By a small margin, households in urban locations more commonly reported that they were unable to recover suitable materials to conduct shelter repairs or reconstruction (60%) than their counterparts in peri-urban or rural locations, 49% and 54% of households respectively.

Figure 28: Reported ability of households to use recovered materials for shelter repair / reconstruction, by urban, peri-urban or rural area

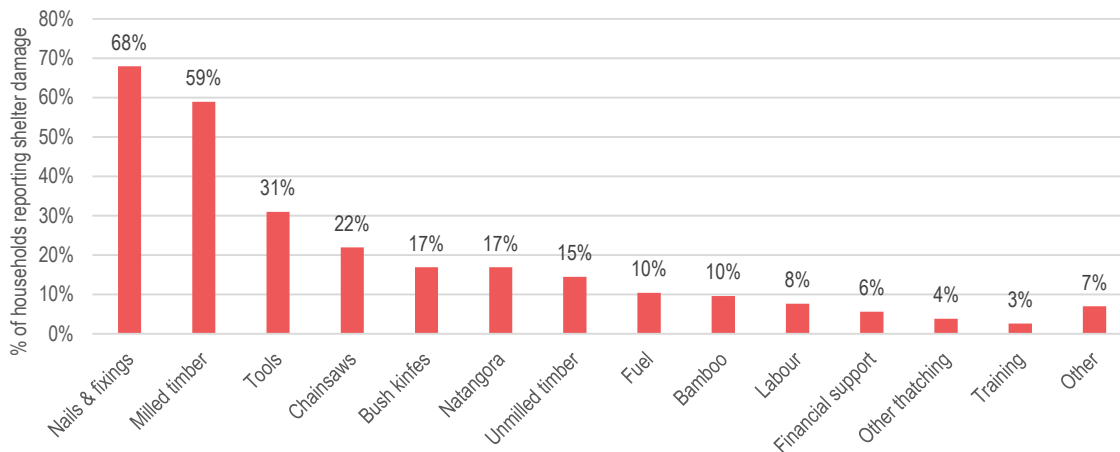


The most commonly reported resource required for the repair and reconstruction of shelters was nails and fixings, with 68% of households across the affected area reporting a need for this type of shelter support. Considerable proportions of households reported a need for milled timber, tools, and chainsaws, 59%, 31% and 22% respectively. Only a minority reported that they required labour, financial support, or training, to repair or reconstruct their shelter; reported by 8%, 6%, and 3% of households respectively. This highlights that households perceive that they will be able to self-recover given access to key materials and tools, with little to no external support.

However, this does not preclude a shelter response which includes training support. Despite the seemingly widespread perception amongst households that they do not require training support, the fact that households have reported

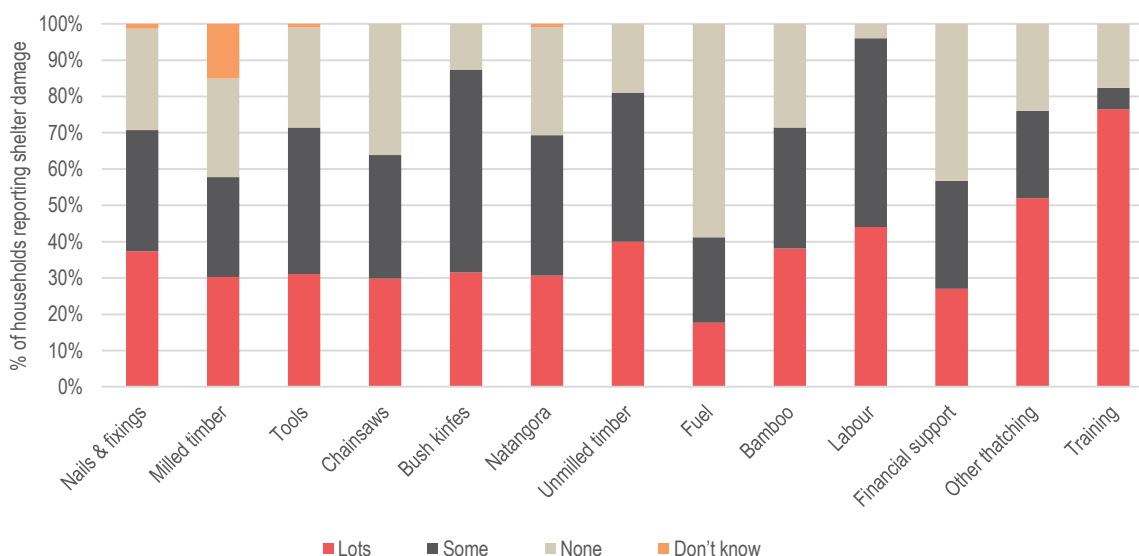
rebuilding with the same pre-crisis materials highlights a potential for future vulnerability. As such, this situation presents an opportunity for 'build back safer' interventions to be included in the Shelter Cluster response strategy.

Figure 29: Reported needs for shelter support for repair / reconstruction



For the three most commonly reported needs to facilitate shelter repairs or reconstruction it was reported that they are significant gaps in availability. Households across the affected area most commonly reported that there were either none of these, or at most some, available for them at the time of assessment; 61%, 55%, and 68% of households respectively. Bridging the gap between needs and availability represents a potential area of focus for shelter interventions to be delivered in future by humanitarian and governmental actors.

Figure 30: Reported availability of materials / tools / support required for repairs or reconstruction

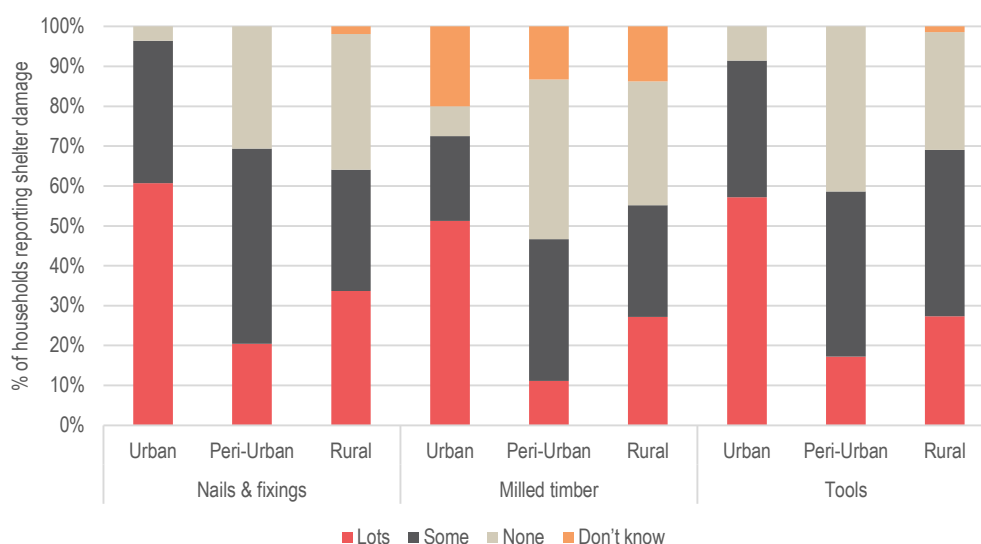


The availability of the most commonly reported materials, tools, or support required for repairs or varied considerably between urban, peri-urban, and rural locations. The greatest level of availability was reported in urban locations, where

the majority of households reported they were able to acquire a sufficient quantity of nails & fixings, milled timber, and tools for repairs or reconstruction, 61%, 51%, and 57% respectively.

The lowest availability of nails & fixings was reported in rural locations, with 34% of households in these areas reporting that they had no access to this construction material. Similarly, the lowest levels of availability of both milled timber and tools were reported in peri-urban areas, with 40% and 41% of households respectively reporting no access to materials. The lack of availability of required resources for repair or reconstruction can be attributed in rural areas to the lack of markets, and in peri-urban areas to the relatively high costs associated with procuring such items in urban markets. Therefore, future shelter programming should consider the relative lack of availability of key shelter repair or reconstruction materials in peri-urban and rural locations compared to urban locations.

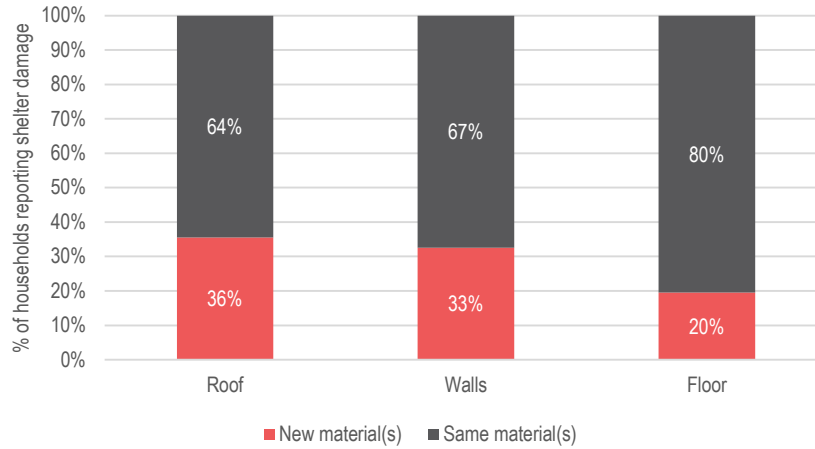
Figure 31: Reported availability of shelter support required for repairs and reconstruction, by urban, peri-urban, and rural area



For the most part, households that reported damage to their shelter used the same materials as prior to Cyclone Pam for repairs and / or reconstruction of core shelter components, with 64% of households reporting using the same material for roofs, 67% for walls, and 80% for floors.

Of the households that had started rebuilding their shelter using different materials, 57% reported that they were utilising either tarpaulins, or a mix of tarpaulins and other materials, as roofing material(s). Similarly, 26% of this proportion of households reported that they had made the same change to their wall material at the time of assessment. Regarding changes to floor materials, almost half of these households, 47%, reported that they had changed to having no floor material at the time of assessment. Instead, their shelters were no free standing on dirt, sand, or coral. It should be noted that the choice of materials reported here is commonly found in emergency shelter solutions. Longer term reconstruction of permanent structures will not necessarily use the same materials as those materials reportedly used here.

Figure 32: Reported changes to shelter component materials

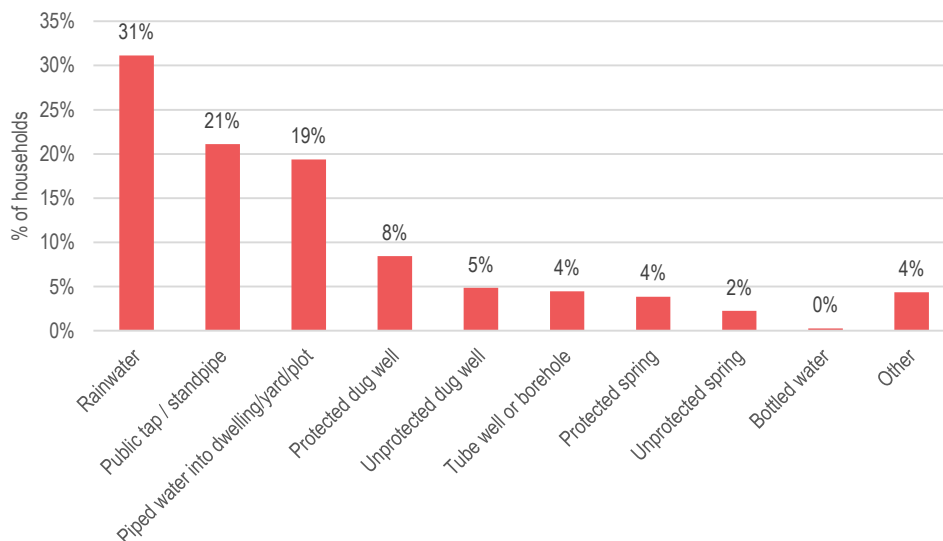


WATER AND SANITATION

Water

Prior to Cyclone Pram, the most commonly reported types of drinking water source included rainwater collection (reported by 31%), public taps / standpipes (21%), and piped water into the dwelling or plot (19%). Some significant differences in primary sources of drinking water were observed between sample sites. In 85% of sample sites, rainwater collection was either the first, second, or third most commonly reported primary source of drinking water. In contrast, on Tanna Island, Tanna Rural and Tanna Urban (Lenakel) sample sites, rainwater was reportedly not utilized by households as one of their top three primary sources of drinking water.

Figure 33: Primary source of drinking water



Rainwater catchment systems were commonly reported as a primary source of drinking water in both peri-urban and rural locations, by 24% and 37% of households respectively. As above, this presents a potential increase in vulnerability as a result of damage to roofs and guttering, which may in turn have affected the functioning of many rain water

catchment systems. This therefore presents an opportunity for integrated shelter and WASH programming, focussing on the provision of guttering, and in some cases water tanks, to restore the functionality of this much relied upon source of drinking water.

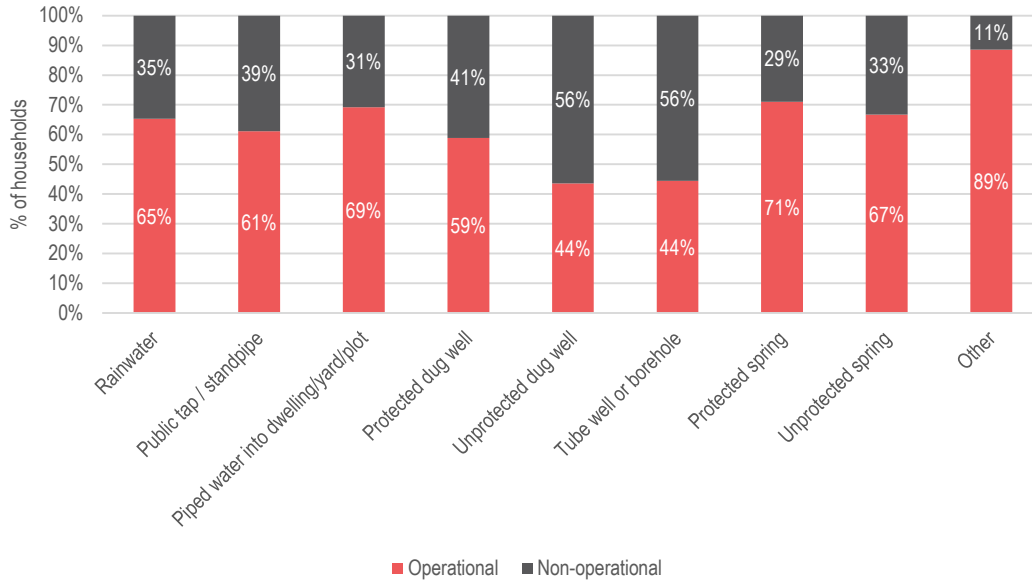
Table 2: Top three sources of drinking water, by urban, peri-urban, and rural area

Land usage	Rank	Drinking water source	% of households
Urban	1st	Piped water into dwelling/yard/plot	35%
	2nd	Public tap / standpipe	25%
	3rd	Tube well or borehole	8%
Peri-Urban	1st	Piped water into dwelling/yard/plot	36%
	2nd	Rainwater	24%
	3rd	Public tap / standpipe	18%
Rural	1st	Rainwater	37%
	2nd	Piped water into dwelling/yard/plot	14%
	3rd	Protected dug well	10%

64% of households reported that their primary source of drinking water remained operational after Cyclone Pam. Data suggests that dug wells and tube wells / boreholes were most affected by the cyclone, with 56% of households utilising each type reporting that they were non-operational at the time of assessment. With rainwater collection systems accounting for 31% of households' primary source of drinking water, the fact that 35% utilising this source reported that it was non-operational at the time of assessment is a cause of concern. This does however present an opportunity for integrated WASH and shelter programming, which could see the provision of guttering, and where necessary water collection tanks, to households whose collection system has been damaged as a result of Cyclone Pam. In this regard, long term shelter recovery could explore alternative roofing material solutions for rainwater harvesting, as until now, only CGI sheet-clad roofing has allowed households to do this. In the meantime, dwelling, shelter and community building construction or retrofitting programmes should be accompanied by awareness campaigns and capacity building on the proper tools, devices and workmanship needed to fix this type of roof cladding material properly.

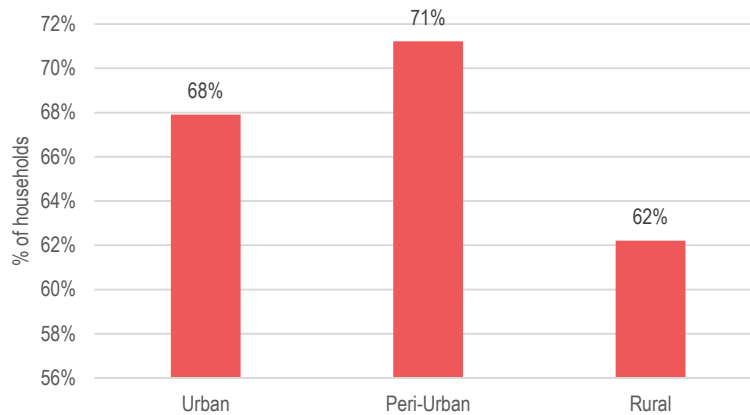
Regarding differences between sample sites, damage to primary sources of drinking water was identified as being most extensive in Tanna Rural and the Shepard Islands; with 54% and 50% of households respectively reporting that their primary source of drinking water was non-operational at the time of assessment.

Figure 34: Reported functionality of primary drinking water sources



While the majority of households across the affected area reported that their primary source of drinking water was functional at the time of assessment, it was slightly more common for households in rural locations to report non-functionality, 38%, compared to 32% of households in urban and 29% in peri-urban locations.

Figure 35: Functionality of primary drinking water source, by urban, peri-urban and rural area



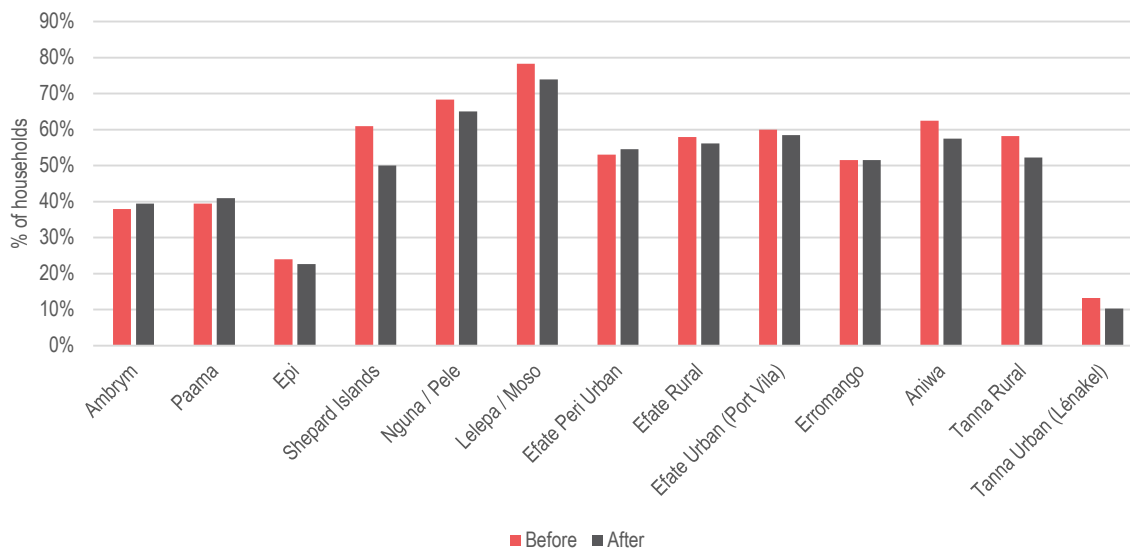
Sanitation

In 69% of sample sites—nine of the assessed locations—there was a decrease in the percentage of households that were able to access improved latrines⁶ after the Cyclone compared with before. A decrease in household ability to access improved latrines was most acute in Tanna Urban (Lenakel), the Shepard Islands, and Tanna Rural where there was a respectively a 22%, 18%, and 10% decrease in the proportion of households' reporting access to improved latrines after the Cyclone.

⁶ Improved latrines include non-shared flush/pour flush to piped sewer system, flush/pour flush to septic tank, flush/pour flush to pit latrine, ventilated improved pit (VIP) latrine, and pit latrine with slab

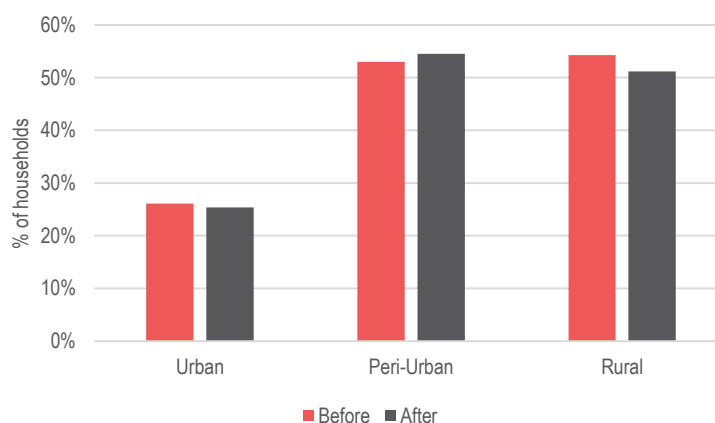
The lack of access to improved latrines, both pre and post crisis, is a particular cause for concern. Guidelines on suitable latrine construction practices have been available to populations across the affected area for a number of years. As such, there is a clear need for a review of both the materials and methods of outreach to communities.

Figure 36: Access to improved latrines before and after the cyclone



Urban households, predominately those in Tanna Urban (Lenakel) were the least likely to have access to improved, non-shared, latrines before Cyclone Pam; with only 26% of households reporting access to this type of sanitation facility. As a result of the Cyclone, both urban and rural locations saw a decrease in the proportion of households with access to improved latrines, a 3% and 6% decrease in the proportion of households respectively. Interestingly, the assessment found that the proportion of households in peri-urban areas that reported access to improved latrines had marginally increased since the cyclone by 3%.

Figure 37: Access to improved latrines before and after the cyclone, by urban, peri-urban and rural area

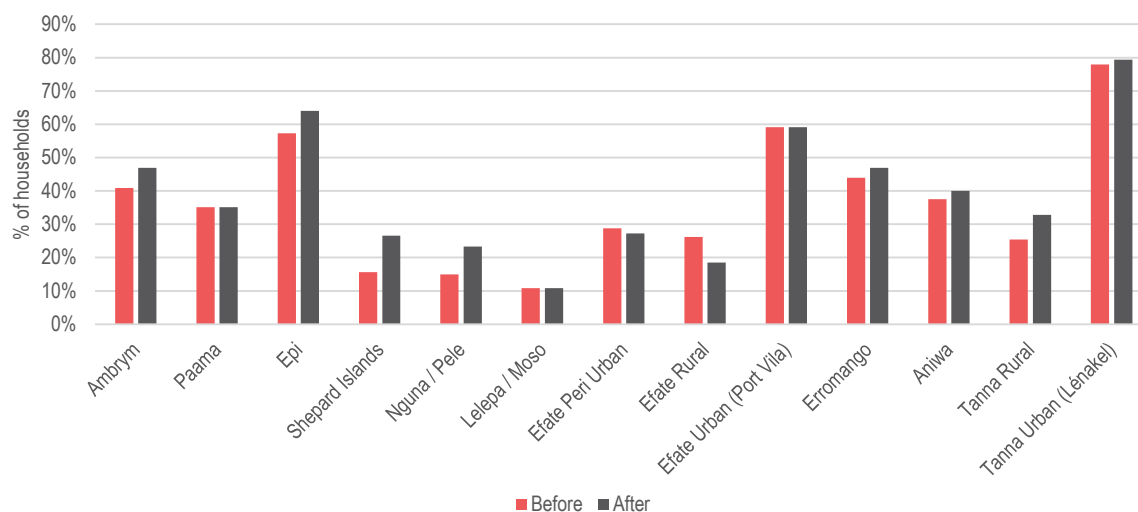


Sharing latrines with other households was identified as being relatively widespread across the affected area, with 41% of households reporting that they shared their primary latrine with at least one other household. The prevalence of household sharing latrines before Cyclone Pam was highest in Tanna Urban (Lenakel) and Efate Urban (Port Vila),

with 78% and 59% of households reporting this practice. Where latrine sharing was reportedly practised, 7 households on average, both before and after Cyclone Pam, were reported to share a single latrine.

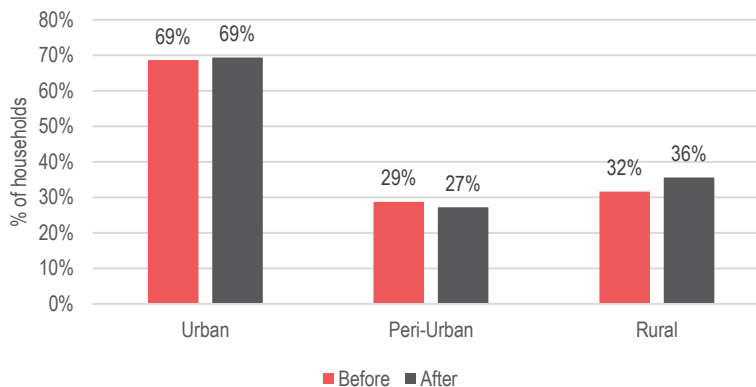
Following Cyclone Pam there was an increase in the proportion of households reporting sharing their latrine with at least one other household in 62% of sample sites, 8 locations. The increase in the proportion of households relying on this practice was highest in the Shepard Islands and Nguna / Pele, with a 41% and 36% increase in each location respectively. The widespread increase in the practice of latrine sharing underscores the significant level of damage sustained by latrines. As such, WASH programming in the recovery phase should focus on the provision of sufficient latrines to ensure that SPHERE minimum standards are being met throughout the affected area.

Figure 38: Households sharing latrines with others before and after Cyclone Pam



Sharing of latrines prior to Cyclone Pam was a reported to be a significantly more common practice in urban locations when compared to rural and peri-urban locations, reported by 69% of households compared to 29% and 32% respectively. The proportion of households sharing latrines in urban locations remained the same, at 69%, in the aftermath of the cyclone. A 13% increase in households reporting this sanitation practise can however be observed in rural areas.

Figure 39: Households reporting sharing latrines with others before and after the cyclone, by urban, peri-urban, and rural area

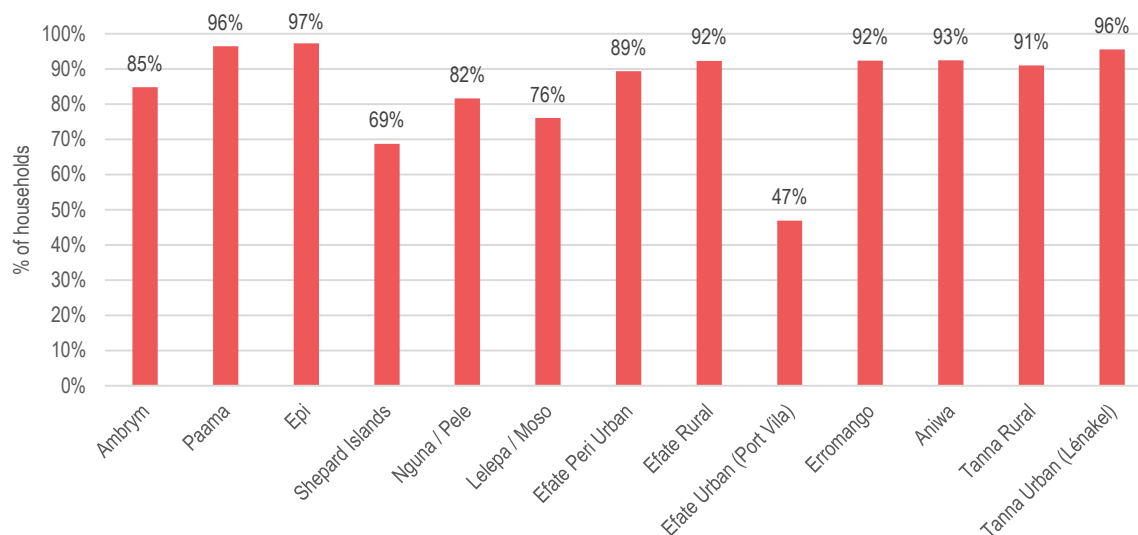


LIVELIHOODS

Subsistence Farming

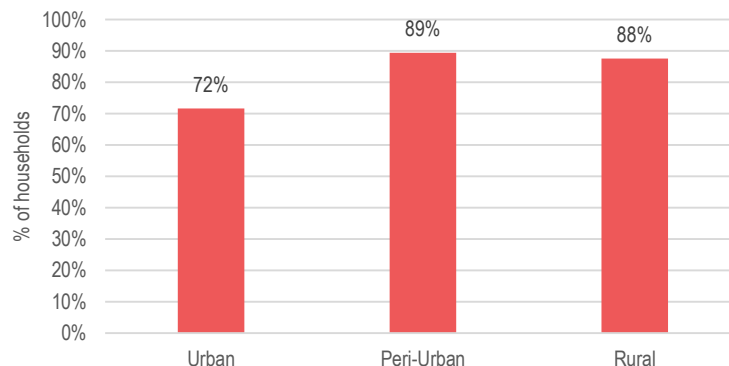
Engagement in subsistence farming was identified as being widespread across the affected area; with 85% of households reporting that they engaged in this form of livelihood. The proportion of households reporting engagement in subsistence farming was lowest in Efate Urban (Port Vila), 47%. In the remaining locations, engagement in this form of livelihood was almost universal, with between 69% and 97% of households per location reporting that they conduct subsistence farming.

Figure 40: Household engaged in subsistence farming



As expected, urban locations were found to have the lowest proportion of households reporting engagement in subsistence farming, 72%, compared to 89% and 88% in peri-urban and rural locations respectively. However within the urban geographic classification there are considerable differences. In Efate Urban (Port Vila) under half, 47%, of households reported that they were engaged in subsistence farming, considerably different to Tanna Urban (Lenakel) where 96% of households engaged in subsistence agriculture.

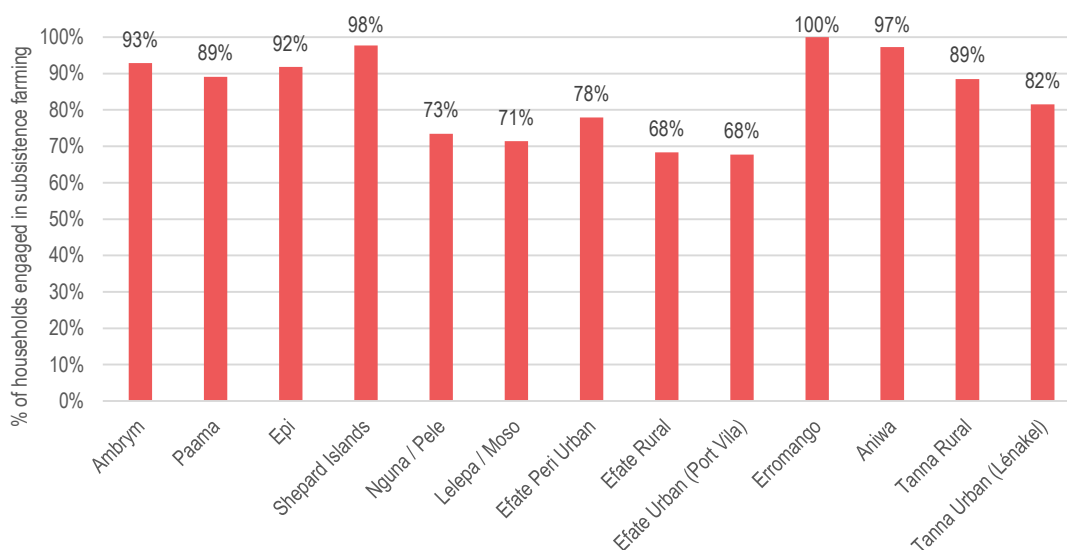
Figure 41: Household engaged in subsistence farming, by urban, peri-urban, and rural area



Recognising the integral role of subsistence farming in Vanuatu, and the significant level of damage sustained as a result of the high winds generated by Cyclone Pam (the World Food Programme has reported extensive damage to agriculture and livestock across the affected area⁷), households in the affected area were asked if they had replanted their gardens. 85% of households across the affected area reported that they had completed replanting their garden at the time of assessment. This highlights the importance of gardens in securing sufficient food to meet household needs. However, it should be noted that even the fastest growing crops cultivated in Vanuatu are estimated to take up to three months to reach maturity. As such, continued food insecurity of households across the affected area can be expected. In addition, food security interventions should take the opportunity to explore crop types and cultivation practices that will ensure an increase resilience to the high winds generated by tropical cyclones.

Of those households with gardens, the vast majority of households in all sample sites (68%) reported that they had completed replanting by the time of the assessment. In Erromango, replanting had been completed across the island, with 100% of households reporting they had completed replanting.

Figure 42: Households reported having completed replanting of gardens

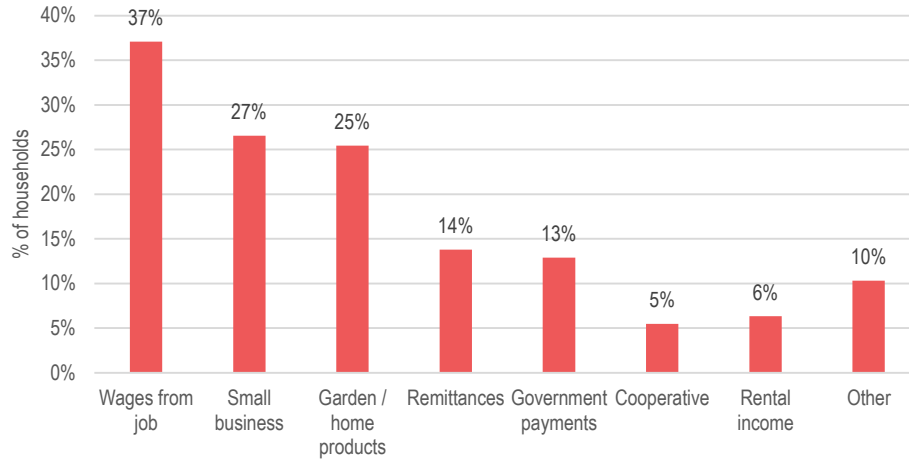


Income Generating Livelihoods

While the majority of households across the affected area reported relying solely on subsistence farming, just under half of households across the affected area reported some engagement in income generating livelihoods. Where households reported that members did engage in income generating livelihoods, earning wages from jobs, small businesses, and the sale of garden / home products were most commonly reported, by 37%, 27%, and 25% of households respectively.

⁷ The World Food Programme, *Vanuatu: The Impact of Cyclone Pam*, March 2015

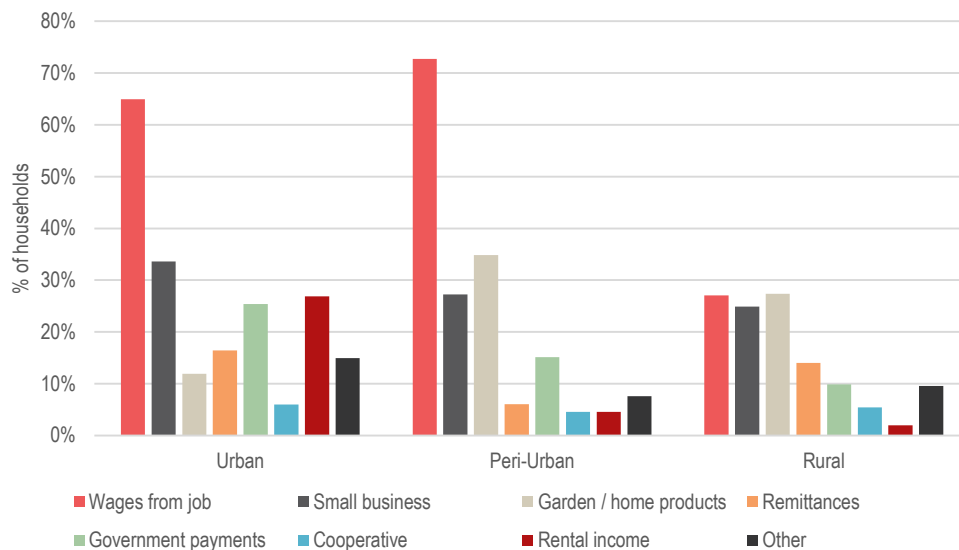
Figure 43: Income generating livelihoods



Salaried employment was a significantly more common reported income generating activity in urban and peri-urban locations (for 65% and 62% of households respectively) compared to rural locations (27% of households). Households reporting income generated through renting either rooms, a separate shelter, or land was more prevalent in urban locations when compared to peri-urban and rural locations, reported by 27% of households compared to 5% and 2% respectively.

In addition to reporting a high reliance on salaried employment, households in peri-urban areas, much like those in rural areas, reported that they also engaged in the sale of garden / home produce, 35% of households. Besides the importance of this activity as a source of income in peri-urban locations, this activity is highly significant for ensuring food security at the neighbourhood and wider city levels. Housing, territorial planning and zoning policies and measures should therefore ensure that this practice is at least not prevented, and at best, encouraged.

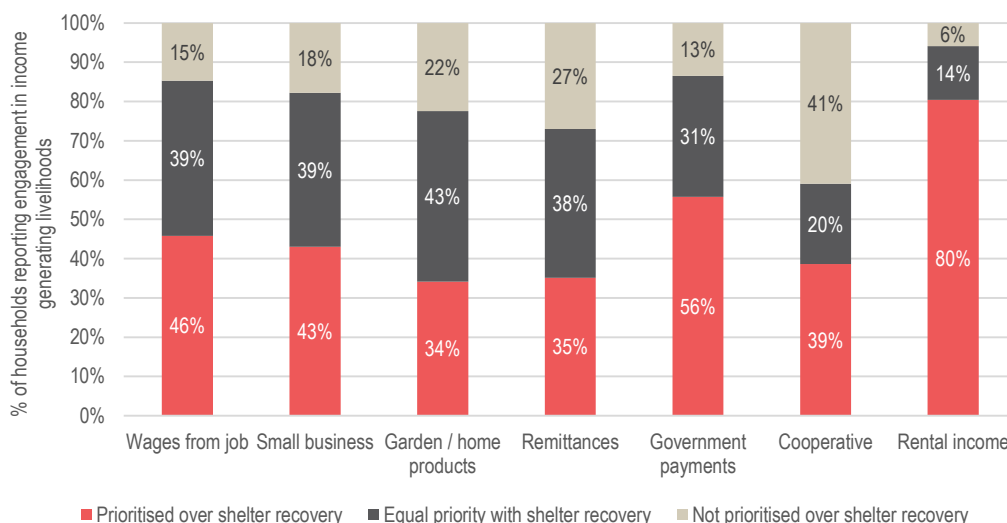
Figure 44: Income generating livelihoods, by urban, peri-urban, and rural area



For households receiving income from either a salaried job or a small business it was most commonly reported that restarting the livelihood activity was prioritised over shelter recovery, 46% and 43% of households reporting the aforementioned livelihoods respectively. However, a considerable proportion of both groups reported that shelter recovery and the restarting of livelihoods of prioritised equally, both 39%. Where households reported that they received rental income from letting rooms in their shelter, separate shelter(s), or land, the vast majority reported that they had prioritised restarting this income generating activity over shelter recovery, 80%.

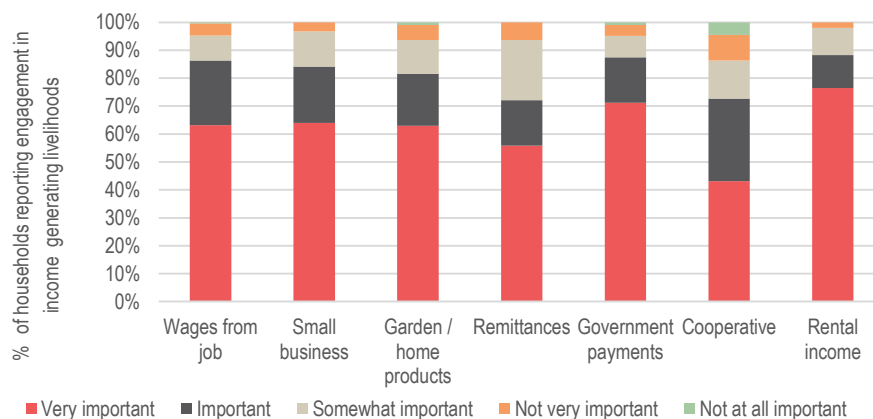
Across the majority of livelihood types, only a minority of households reported that they had not prioritised restarting livelihood activities over shelter recovery. This highlights the importance of income generation in emergency recovery in the immediate aftermath of Cyclone Pam.

Figure 45: Households reporting prioritising income generating Livelihood recovery over Shelter recovery



With regards to medium to long term recovery, households were asked to rank how important the income generated from livelihoods activities was in ensuring their medium to long term recovery in the aftermath of Cyclone Pam. For the majority of households, income generated through livelihoods activities was reported to be very important for their medium to long term recovery. Only a small minority of households engaged in any of the identified income generating livelihoods activities reported that they were not very important or not important at all in facilitating their households' medium to long term recovery.

Figure 46: Reported importance of livelihood for medium-long term recovery

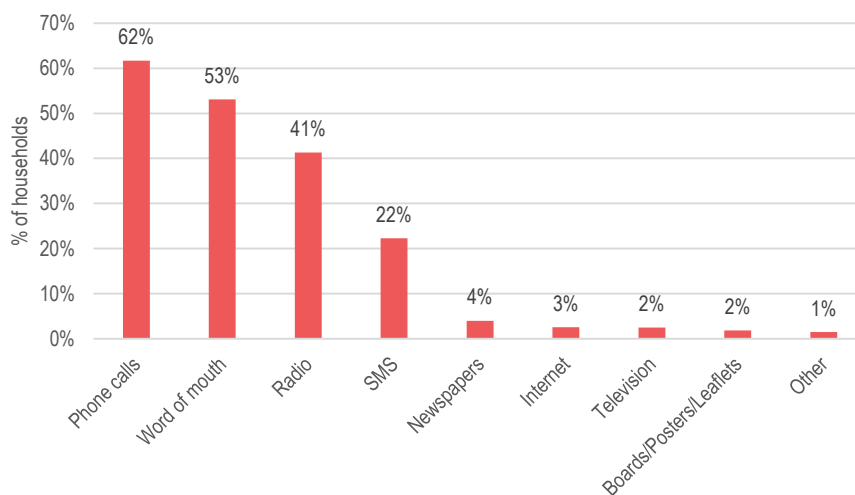


MASS COMMUNICATIONS

The most common channels through which households reported that they regularly receive public information were telephone calls, word of mouth, and radio, reported by 62%, 53%, and 41% of households respectively. Only a small minority of households reported that they receive information through newspapers, the internet, or television, 4%, 3%, and 2% respectively.

With the considerable reliance on telephone calls or word of mouth to receive public information, it is crucial that community focal points are identified, potentially through community disaster committees (CDCs), area councils (ACs), or the chief system, through which information on shelter, and other humanitarian / development, programming can be disseminated. In addition, with 41% of households already receiving information through radio communications, there is an opportunity to facilitate the development of increased access to radios as a means of receiving public information; both about humanitarian programming and potential future sudden onset disasters.

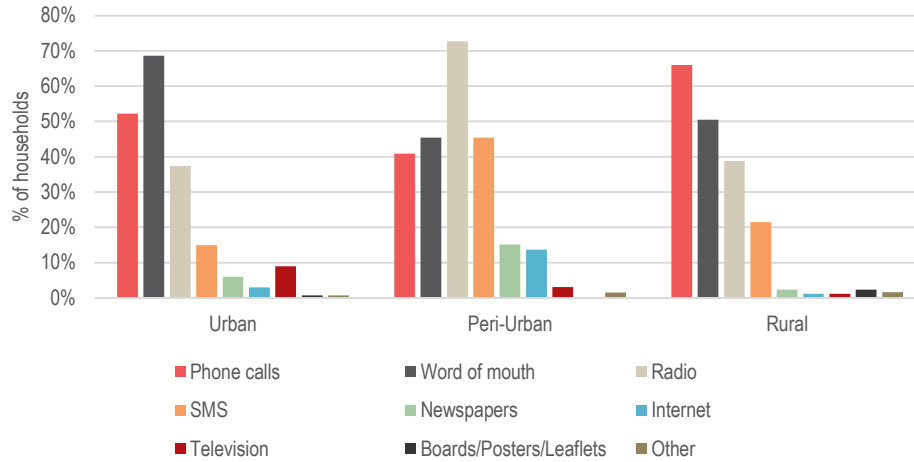
Figure 47: Channels through which households receive public information



Interestingly, rather than utilising the available communications infrastructure (internet, newspapers etc.), households in urban areas most commonly reported that they relied on word of mouth to receive public information, 69%. In rural areas, the most commonly reported channel through which households reported receiving public information was phone calls (66%), followed by word of mouth, (50%). In peri-urban areas the predominant channel through which public information was reportedly received was radio, by 73% of households.

As above, these findings underline the need for context specific strategies with regards to mass communications, in order to communicate messages relevant to shelter interventions and those of other clusters / sectors.

Figure 48: Channels through which households receive public information, by urban, peri-urban, and rural area

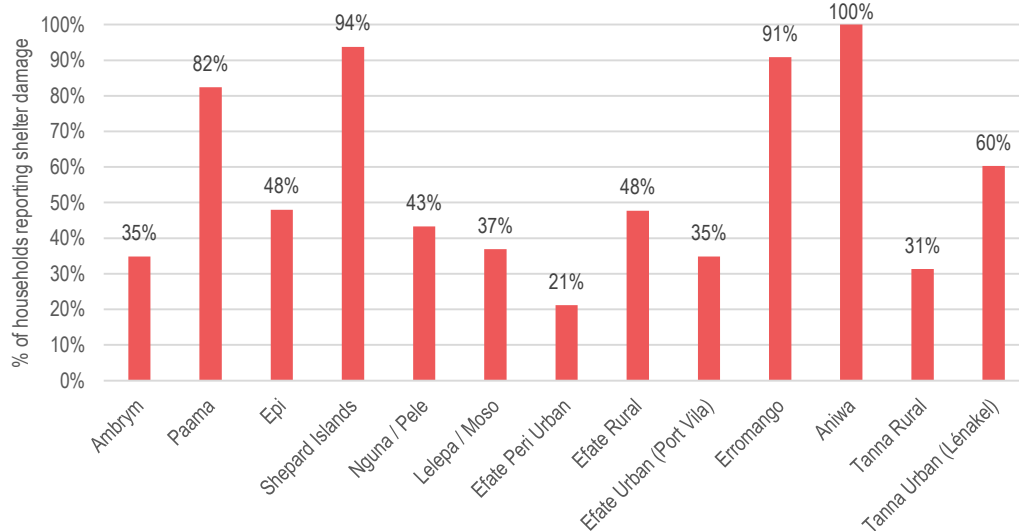


ASSISTANCE

Shelter Assistance

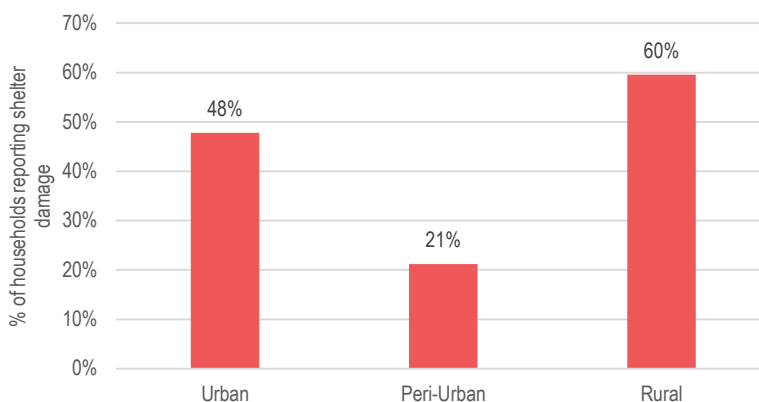
Slightly under half of households across the affected area (46%) reported that they had not received emergency shelter assistance at the time of the assessment. It is clear from Figure 50, below, that the receipt of emergency shelter assistance varies considerably between the assessed areas. The most significant gaps in assistance provision were reported in Efate Peri Urban, Tanna Rural, Efate Urban (Port Vila), and Ambrym, with 79%, 69%, 65%, and 65% of households respectively reporting that they had received no shelter assistance at the time of assessment. With this in mind, remaining emergency phase shelter programming should focus on ensuring households with shelters which have sustained damage and have not had the means to complete substantial repairs or reconstruction are targeted.

Figure 49: Households reporting receipt of emergency shelter assistance



According to assessment data the biggest gap in emergency shelter interventions is in peri-urban locations, where only 21% of households reported that they had received any time of assistance at the time of assessment. The highest proportion of households reporting receipt of shelter assistance were in rural areas, 60%, despite the considerable logistical challenges in accessing affected households.

Figure 50: Households reporting receipt of shelter assistance by urban, peri-urban, and rural area



Taking into account households that reported damage to their shelter, those which reported not having received any type of shelter assistance at the time of assessment, and those who reported they were unable to complete substantial repairs or reconstruction to their shelter, table 3 below details an estimated caseload of affected households which potentially constitutes a gap in shelter assistance delivered during the emergency phase of the Cyclone Pam response. The largest estimated remaining caseload for emergency shelter interventions was identified in Efate Urban (Port Vila). In addition, significant gaps were observed in Efate Peri Urban, 200 households, the Shepard Islands, 186 households, and Tanna Urban (Lenakel), 185 households.

Table 3: Estimated shelter assistance gaps⁸

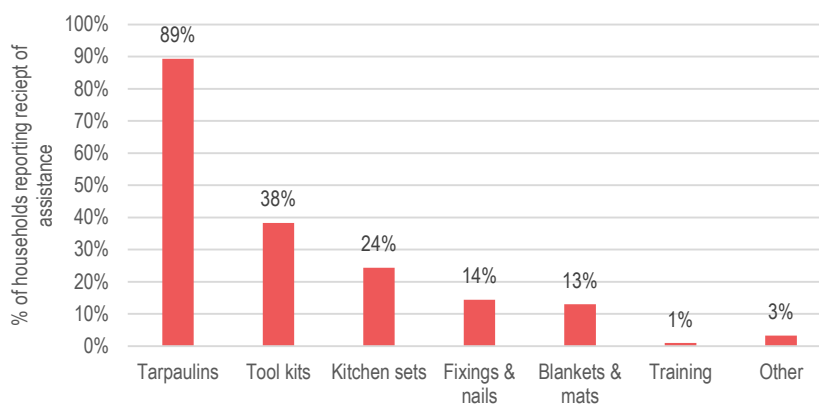
Sample Site	Estimated Assistance Gap (Households)
Ambrym	73
Paama	46
Epi	62
Shepard Islands	186
Nguna / Pele	63
Lelepa / Moso	7
Efate Peri Urban	200
Efate Rural	87
Efate Urban (Port Vila)	152
Erromango	31
Aniwa	5
Tanna Rural	139
Tanna Urban (Lenakel)	185
Total households:	1236

⁸ Shelter assistance gap estimates are subject to a 90% confidence level and a 10% margin of error

For the 54% of households which reported having received shelter assistance by the time of assessment, the most common mode of assistance received was tarpaulins, which were reported received by 89% of these households. In addition to tarpaulins, considerable proportions of households reported that they had received tool kits and kitchen sets, reported respectively by 38% and 24% of households that reported receiving shelter assistance.

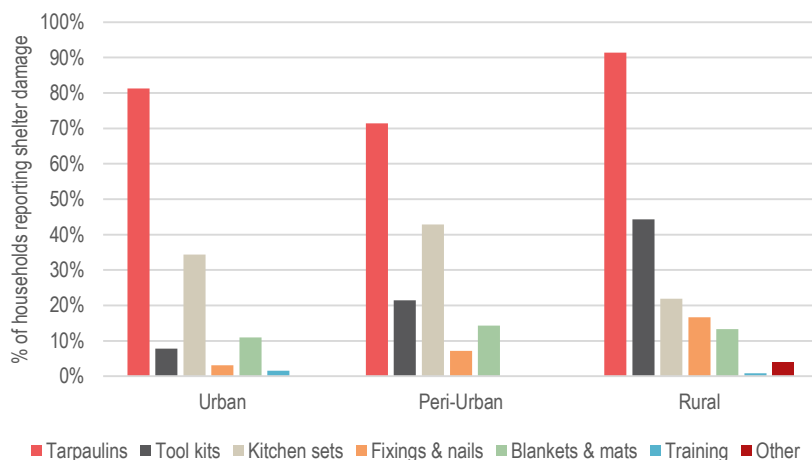
Despite fixings and nails being the most commonly reported material needed to facilitate shelter recovery by 68% of households across the affected area (figure 30), only a minority of households, 14%, reported that they had received this mode of assistance at the time of the assessment. This should therefore be taken as an opportunity to reorient shelter programming to include the provision of fixing and nails during the recovery phase.

Figure 51: Types of shelter assistance received



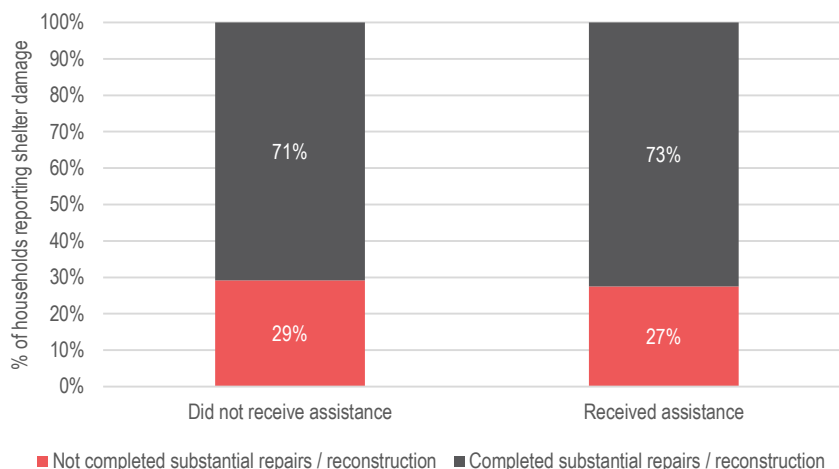
Tarpaulins were the most commonly received mode of shelter assistance across urban, peri-urban, and rural locations. While tool kits were the second most common form of assistance received across the affected area, they were most commonly received in rural locations, with 44% of households reporting receipt of this form of assistance. Conversely, kitchen sets were more commonly received in urban and peri-urban locations, 34% and 43% of households respectively, than in rural locations, 22% of households.

Figure 52: Types of shelter assistance received by urban, peri-urban, and rural area



Data suggests that the receipt of assistance had little effect on the ability of a household to have completed substantial repairs or reconstruction of their shelter by the time of the assessment. The majority of both those households who received of shelter assistance and those who did not reported that they had completed substantial repairs or reconstruction to their shelter at the time of the assessment, 73% and 71% of the aforementioned household groups respectively. With this in mind it is essential that a detailed review of emergency shelter response modalities in the context of Vanuatu be undertaken by the shelter cluster.

Figure 53: Self recovery vs. receipt of assistance



Community Consultations

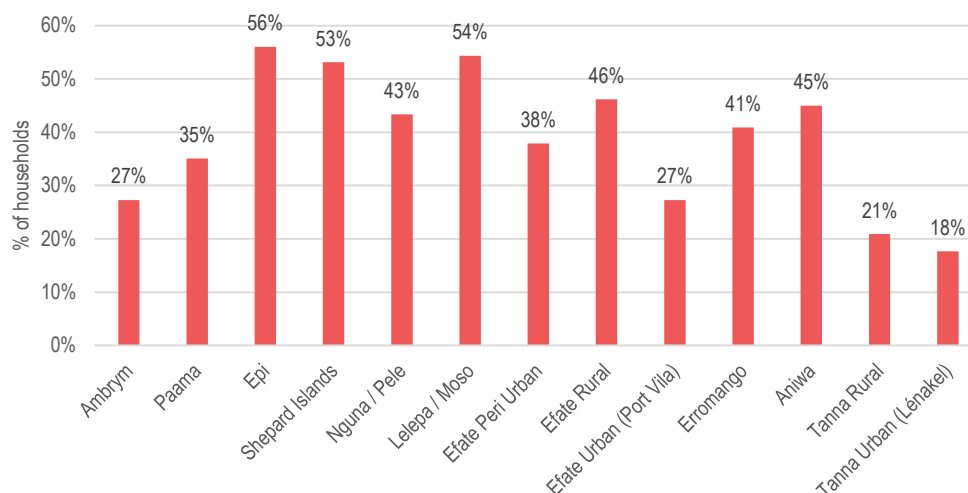
In line with the goals of the World Humanitarian Summit (WHS) Regional Consultation for the Pacific to improve the services offered by humanitarian actors and maximize their impact on people in need,⁹ households were asked if they were able to identify individuals or institutions within their community which had been consulted during the design process of emergency humanitarian interventions.

Overall, less than half of households, 38%, reported that they were aware of identified individuals or institutions within their community that had been consulted during the design process of emergency humanitarian interventions. Despite the base for the majority of emergency phase humanitarian interventions being Vanuatu’s capital Port Vila, only a minority of households in Efate Peri Urban, Efate Rural, or Efate Urban (Port Vila) reported that they were aware of community consultations prior to the launch of emergency interventions, 38%, 46%, and 27% respectively.

As a result of the significant level of support provided to affected households from within their respective communities, see figure 23, humanitarian actors should place more focus on engaging communities in the design and implementation of emergency interventions to ensure relevance of assistance delivered and to secure community buy-in to the process.

⁹ World Humanitarian Summit – Concept Note

Figure 54: Households reporting awareness of community consultations during emergency phase



Reported Priority Needs

Again underlining the considerable capacity for self-recovery amongst the affected population, the most commonly reported first priority need across the affected area was building tools, reported by 22% of households. In addition, shelter and housing materials was commonly reported as a first priority need, representing 16% of households across the affected area. With the considerable damage to primary drinking water sources reported in mind, 18% of households reported drinking water as a first priority need. Recognising the significant reliance of the affected population on subsistence gardening, gardening tools were also commonly reported by households as a first, second, or third priority need, as detailed in the table below.

Reported priority needs, as detailed in figure 41, should be closely considered during the development of shelter, and other humanitarian, programming as the Cyclone Pam response moves into the recovery phase. As above, a focus should be placed on facilitating self-recovery, both in terms of shelter and more broadly, through the provision of materials and equipment such as building tools, gardening tools, and shelter / housing materials.

Figure 55: Top reported priority needs

	First Priority	Second Priority	Third Priority
Building tools	22%	19%	9%
Clothing	2%	5%	9%
Drinking water	18%	11%	11%
Education	4%	5%	4%
Electricity supply	3%	3%	5%
Employment	1%	2%	2%
Fishing equipment	2%	2%	3%
Food	8%	16%	14%
Gardening tools	12%	14%	11%
Health	7%	7%	13%
Hygiene items	2%	3%	7%
Roads	0%	1%	1%
Shelter/Housing materials	16%	8%	6%
Transportation	0%	1%	1%
Water for domestic use	0%	1%	1%
Other	3%	1%	2%
None	0%	0%	1%

Significant differences can be observed between top reported priority needs between urban, peri-urban, and rural locations. Building tools were reported by almost half of all households living in urban locations as a first priority needs, 49%; highlighting the need for external interventions to facilitate self-recovery.

In peri-urban and rural locations it was common for households to report their first priority need as drinking water, 35% and 18% of households; despite 71% and 68% of households reporting that their primary source of drinking water was functional at the time of assessment. This suggests that even with drinking water sources largely functional, households in peri-urban locations still face significant difficulties accessing enough drinking water to meet household needs.

Unlike in urban locations, shelter and housing materials were reported as a first priority need in both peri-urban and rural locations, by 26% and 18% of households, compared to 3% in urban areas. This again highlights the difficulties in sourcing sufficient shelter materials in peri-urban areas (as a result of prohibitively high costs in urban markets) and in rural locations (as a result of a lack of easily accessible markets).

Figure 56: Top reported priority needs, by urban, peri-urban, and rural area

	First priority			Second priority			Third priority		
	Urban	Peri-Urban	Rural	Urban	Peri-Urban	Rural	Urban	Peri-Urban	Rural
Building tools	49%	8%	18%	35%	3%	17%	11%	9%	9%
Clothing	1%	2%	2%	7%	8%	4%	16%	2%	8%
Drinking water	2%	35%	20%	1%	12%	13%	1%	18%	12%
Education	0%	2%	5%	1%	9%	5%	1%	9%	5%
Electricity supply	1%	0%	3%	1%	2%	4%	1%	8%	6%
Employment	2%	0%	1%	0%	6%	2%	3%	0%	1%
Fishing equipment	0%	0%	2%	4%	0%	2%	3%	2%	3%
Food	1%	9%	10%	7%	29%	16%	3%	21%	15%
Gardening tools	27%	5%	10%	20%	6%	14%	10%	11%	11%
Health	9%	11%	6%	12%	11%	6%	27%	6%	11%
Hygiene items	1%	0%	3%	7%	0%	3%	16%	5%	6%
Roads	0%	0%	0%	0%	2%	2%	0%	0%	1%
Shelter/Housing materials	3%	26%	18%	3%	8%	9%	3%	6%	7%
Transportation	0%	0%	0%	0%	0%	1%	0%	0%	1%
Water for domestic use	2%	0%	0%	0%	3%	1%	1%	2%	0%
Other	1%	5%	2%	0%	3%	1%	1%	3%	3%
None	0%	0%	0%	1%	0%	0%	3%	0%	0%

CONCLUSION

This assessment, implemented in the aftermath of category 5 tropical Cyclone Pam, sought to verify the coverage of emergency shelter & NFI assistance and conduct gap analysis, enable the shelter cluster to define a comprehensive shelter & settlements recovery strategy, inform the Cyclone Pam revised flash appeal, and establish a baseline and method for a potential longitudinal study of recovery. Confirming anecdotal evidence, self-recovery was observed as being widespread across the affected area. With households largely having completed substantial repairs or reconstruction to their shelter by the time of assessment. In spite of this, there remain a number of potential causes for increasing vulnerability which should be taken into consideration when defining the medium to long term recovery phase strategy of the shelter cluster.

As a result of the considerable proportion of households identified as having members with pre-existing vulnerabilities (pregnant and lactating women, persons with chronic illnesses, and persons with disabilities), shelter cluster actors should take a holistic approach when assessing suitability for interventions; rather than focussing solely on shelter vulnerability. Given the high observed capacity for self-recovery and significant amount of reconstruction that had taken place in the direct aftermath of the cyclone, often with no external assistance, alternative assistance strategies should be considered which facilitate recovery through other means, as well as the provision of direct shelter assistance. In consultation with communities, particular support to restoring livelihoods—identified by the majority of wage-earning households as a higher priority than shelter recovery—should be considered.

While many families were temporarily displaced by the cyclone and had since returned home, the assessment found that 29% of households were still hosting displaced friends and or family members at the time of assessment, either inside their shelter or on their plot of land. Families who are unable to return to their homes are likely to be particularly vulnerable, and targeted assistance should be considered for this group to facilitate their return, and relieve pressure on their host family, where limited resources may be particularly stretched.

The different modalities of emergency shelter intervention to date, were for the most part, identified as having had little impact on the ability of households to recover in the immediate post-crisis period; 71% of households who did not receive assistance reported the completion of substantial repair or reconstruction work, compared to 73% of those who did receive assistance. This does not however rule out the need for shelter interventions to support medium to long term recovery. In addition to the need for a focus on shelter responses which are contextually appropriate, and respond to differing damage levels, significant needs were reported across the affected area for increased access to nails & fixings (reported by 68% of households reporting shelter damage), milled timber (59%), and tools (59%). This situation presents a clear need for a detailed review of the emergency shelter response and for the exploration of forms of assistance that are appropriate in the aftermath of sudden onset emergencies in the context of Vanuatu.

The rehabilitation of rainwater catchment systems presents an opportunity for integrated shelter and WASH programming. As a commonly identified primary source of drinking water (31% of households) which had reportedly sustained relatively high levels of damage, combined with the high levels of damage sustained to roofs across the affected area, there is a clear opportunity for the provision of integrated shelter and WASH assistance packages or joint interventions between shelter and WASH actors, including roofing materials, tools, nails & fixings, guttering, and where necessary water tanks.

In cases where affected households had received support in repairing or rebuilding their shelter in the immediate aftermath of the Cyclone, the majority of assessed households reported that this support had been received from family and / or friends. As a result of the significant reliance on community support during immediate post-crisis recovery it is essential that the shelter cluster, and the wider humanitarian community, ensure that community based support mechanisms are fully integrated into medium to long term programming. This is an opportunity to significantly build on the efforts undertaken by humanitarian actors during the emergency phase whereby 38% of households were aware that a member / institution from their community had been consulted prior to the delivery of emergency assistance. In addition to strengthening the capacity of these mechanisms to respond to needs resulting from Cyclone Pam, this

approach is also relevant in relation to disaster risk reduction, in which community-based approaches and mechanisms could be better informed and prepared to support households affected by natural disasters in future. In recognition of the considerable time required to implement a comprehensive 'build back safer' strategy across the affected area, and the community-centric nature of life inherent across Vanuatu, there is an opportunity to explore interventions designed to build the capacity of communities to develop robust community shelters designed to withstand the effects of future sudden onset disasters.

For the most part, households were observed as having used the same materials they had relied on pre-crisis to conduct repair or reconstruction on their shelter in the aftermath of Cyclone Pam, with 64% of households using the same materials for roofing, 67% for walls, and 80% for floors. The majority of those households that had not built back using the same materials were using tarpaulin for emergency shelter solutions, which should not be considered a long term intention. High levels of damaged were sustained by shelters utilising the most commonly observed pre-crisis materials and construction for shelter components. The majority of households that utilised natangora leaves or CGI for their roofing material reported that their roof had been completely destroyed during Cyclone Pam, by 77% and 58% respectively. Regarding wall materials, 56% and 43% of households which utilised bamboo and CGI for wall construction reported complete destruction. Furthermore, the majority of households that had constructed their floors from bamboo (63%) reported that they had been completely destroyed as a result of the cyclone. The widespread use of pre-crisis shelter materials for rebuilding highlights a potential for longer term vulnerability to natural disasters across the affected area, especially if similar construction practices are also used. This presents a key opportunity for the shelter cluster to integrate 'build back safer' programming as part of the medium to long term shelter recovery strategy in order to support communities to rebuild more resilient and less vulnerable structures.

In order to monitor changing needs as the response to Cyclone Pam continues, REACH, through the framework of its partnership with the Global Shelter Cluster, intends to re-deploy to Vanuatu after a period of three months to conduct monitoring of the initial stages of the medium to long term shelter and settlements recovery strategy.

ANNEXES

Annexe 1: Household Data Collection Tool

Demographics

1. 2a. How many males are under 4 years old?
2b. How many females are under 4 years old?
2c. How many males are 5 - 11 years old?
2d. How many females are 5 – 11 years old?
2e. How many males are 12 – 17 years old?
2f. How many females are 12 – 17 years old?
2g. How many males are 18 – 59 years old?
2h. How many females are 18 – 59 years old?
2i. How many males are 60 years old or more?
2j. How many females are 60 years old or more?

**Confirm with the interviewee that the total number of households members is _____.

2. 3a. Are any members of your household pregnant or lactating? Yes No
3b. If yes, how many members of your household are pregnant or lactating?
3. 4a. Do any members of your household have a physical disability? Yes No
4b. If yes, how many members of your household have a physical disability?
4. 5a. Are any members of your household chronically ill? Yes No
5b. If yes, how many members of your household are chronically ill?
5. 6a. Are any members of your household separated / orphaned / unaccompanied children? Yes No
6b. If yes, how many members of your household are separated / orphaned / unaccompanied children?

Displacement

6. Are you currently living in the same location you were prior to Cyclone Pam? Yes No
**If "Yes," answer questions 8 & 9. If "No," skip to question 10.
7. 8a. Were you temporarily displaced from your home during Cyclone Pam? Yes No
8b. Where were you displaced to?
 - Friends / family in same locality
 - Friends / family in different locality
 - Evacuation centre
 - Safe location within same locality (e.g. caves)
 - Safe location within different locality (e.g. caves)
 - Other
- 8c. Specify other temporarily displaced location.
8. 9a. What is the status of your land ownership?
 - Owner
 - Renter
 - Rent free with consent of owner
 - Rent free without consent of owner
 - Other
- 9b. If other, specify type of land ownership.
9. Are you planning to return to your original site? Yes No
10. Are you planning on staying in this new site? Yes No
11. Are you currently sharing your house with displaced family, neighbor, others? Yes No

Shelter – Pre crisis

12. 13a. What was your house's roof made of before Cyclone Pam?

- Natan Gora
- Other thatch
- Tin roof
- Tarpaulins
- Other handmade plastics
- Concrete
- Milled timber
- None
- Other

13b. Specify other roof type

13. 14a. What were your house's walls made of before Cyclone Pam?

- Concrete
- Tin / Iron / Copper
- Cardboard / masonite
- Wood
- Bamboo
- Wild cane
- Thatch
- None
- Other

14b. Specify other walls type

14. 15a. What was your house's floor comprised of before Cyclone Pam?

- Dirt / Soil
- Milled timber
- Bamboo
- Coral
- Black palm
- Sand
- Cement
- Concrete
- Other

15b. Specify other floor type

15. 16a. Did you receive electricity at your house before Cyclone Pam? Yes No

16b. If yes, what was the primary source of electricity at your house before Cyclone Pam?

- Mains / grid
- Fixed solar panel
- Personal generator
- Community generator
- Other

16c. Specify other electricity source(s)

Shelter – Damage

16. Was your house damaged as a result of Cyclone Pam? Yes No

**If "Yes," answer questions 18a – 18d. If "No," skip to question 19.

17. 18a. How badly was your roof damaged as a result of Cyclone Pam?

- Completely (all)
- More than 50%
- Less than 50%
- None

18b. How badly were your walls damaged as a result of Cyclone Pam?

- Completely (all)
- More than 50%
- Less than 50%
- None

18c. How badly were your doors & windows damaged as a result of Cyclone Pam?

- Completely (all)
- More than 50%
- Less than 50%
- None
- Did not have

18d. How badly was your floor damaged as a result of Cyclone Pam?

- Completely (all)
- More than 50%
- Less than 50%
- None

Shelter – Recovery

**Only answer questions 19 – 22 if selected "Yes" for question 17.

18. Have you finished substantially repairing / rebuilding your shelter? Yes No

19. 20a. Have you had any support when repairing / rebuilding your shelter? Yes No

20b. If yes, where did you receive support from?

- Family / friends
- Local authorities
- NDMO
- Other national government agency
- International organisation / NGO
- Local NGO / charity
- None
- Don't know
- Other

20c. Specify other type(s) of support received

20. Can you primarily use recovered debris to conduct repairs / rebuilding? Yes No

21. 22a. What materials / equipment / support do / did you need to rebuild / repair your shelter?

- Fixing & Nails
- Milled Timber
- Unmilled Timber
- Natan Guru
- Other thatch

- Bamboo
- Chainsaws + accessories
- Bush knife
- Other tools
- Fuel
- Training
- Labour
- Financial
- Other
- None
- Other

22b. Specify other materials / equipment / support you need to rebuild / repair your shelter

22c. Are you able to access [materials / equipment / support selected above]?

- Yes - as much as required
- Yes - some
- No – none

22. 23a. Has your house sustained damage in the past as a result of the following natural hazards?

- Storms
- Earthquakes
- Flood water
- Landslides
- None
- Other

23b. Specify other natural hazard(s)

23. 24a. Does your household currently receive electricity? Yes No

24b. What is the primary source of electricity at your house?

- Mains / grid
- Fixed solar panel
- Personal generator
- Community generator
- Other

24c. Specify other electricity source(s)

Shelter Assistance

24. Have you received any shelter assistance in the aftermath of Cyclone Pam? Yes No

**Only answer questions if selected "Yes" to Question 25.

25. 26a. What type of shelter assistance have you received?

- Tarpaulins
- Tools
- Fixings and nails
- Kitchen sets
- Blankets and mats
- Training & education
- Other

26b. Specify other type(s) of shelter assistance received

26. 27a. Where did you get the [type of shelter assistance selected in Q26a] from?

- Family / friends
- Local authorities
- NDMO
- Other national government agency
- International organization / NGO
- Local NGO / charity
- Vanuatu Red Cross
- Other

27b. Specify other source of [shelter assistance]

WASH

27. 28a. What was your households primary source of drinking water prior to Cyclone Pam?

- Public tap/standpipe
- Tube well or borehole
- Protected dug well
- Protected spring
- Rainwater
- Unprotected dug well
- Unprotected spring
- Purchased or donated bottled water
- Other

28b. Specify other source of drinking water

28. Is your primary source of drinking water still functioning? Yes No

29. 30a. What types of toilet facilities did your household have access to BEFORE Cyclone Pam?

- Flush/pour flush to septic tank
- Flush/pour flush to pit latrine
- Ventilated improved pit (VIP) latrine
- Pit latrine with slab
- Flush/pour flush not to sewer/septic tank/pit latrine (somewhere/DK where)
- Pit latrine without slab/open pit
- No facility/bush/field
- Other

30b. Specify other types of toilet facilities

30. 31a. Did your household share toilet facilities with other households BEFORE Cyclone Pam? Yes No

31b. If shared, how many households?

31. 32a. What types of toilet facilities do you have access to NOW?

- Flush/pour flush to septic tank
- Flush/pour flush to pit latrine
- Ventilated improved pit (VIP) latrine
- Pit latrine with slab
- Flush/pour flush not to sewer/septic tank/pit latrine (somewhere/DK where)
- Pit latrine without slab/open pit
- No facility/bush/field
- Other

32b. Specify other types of toilet facilities

32. 33a. Does your household share toilet facilities with other households NOW? Yes No
33b. If share, how many households?

Health

33. 34a. Which of the following health conditions have members of your household experienced since Cyclone Pam?
- Acute respiratory illness
 - Asthma
 - Malaria
 - Diarrhoea and or vomiting
 - None
 - Other
- 34b. Specify other health conditions

Livelihoods

34. 35a. Does your household normally engage in subsistence gardening? Yes No
35b. If yes, have you replanted yet? Yes No
35. Does your household normally conduct cash crop farming? Yes No
36. 37a. Does your household earn income from any of the following sources?
- Garden produce or other homemade products
 - Wages from a job
 - Profits from owning a business
 - Profits from owning a farm
 - Proceeds from being in a cooperative
 - Rent
 - Government payments
 - Remittances
 - Other sources
- 37b. Did your household prioritize re-establishing [income source] over shelter, after Cyclone Pam? Yes No
- 37c. How important is your [income source] for your long-term recover?
- very important
 - important
 - somewhat important
 - not very important
 - not at all important

Assistance

37. Do you know of people in your community who were consulted before aid delivery? Yes No
38. 39a. How does your household receive public information?
- Word of mouth
 - Phone calls
 - Television
 - Radio

- Boards/Posters/Leaflets
- Internet
- SMS
- Newspapers
- Other

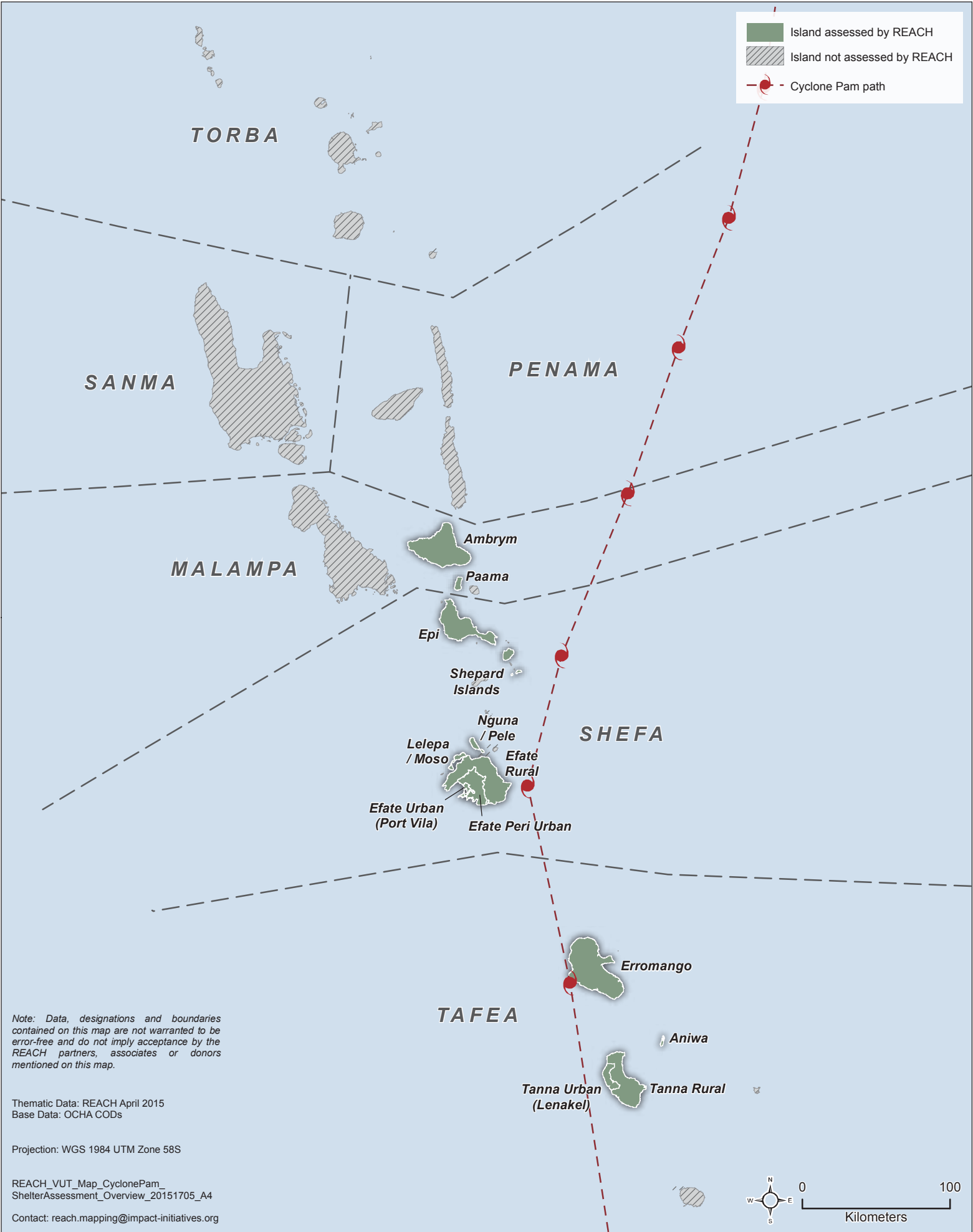
39b. Specify other method of receiving public information

39. What are your household's top 3 priority needs? Rank first, second, and third.

- Drinking water
- Water for domestic use
- Wastewater disposal systems
- Solid waste management
- Security/Policing
- Shelter/Housing
- Roads
- Transportation
- Food
- Electricity supply
- Employment/Jobs
- Education
- Gardening tools
- Building tools
- Fishing equipment
- Clothing
- Hygiene items
- Health
- Other

Other information

- 40. Take a picture of the house (optional)
- 41. Take the GPS point of the house



- Island assessed by REACH
- Island not assessed by REACH
- Cyclone Pam path

Note: Data, designations and boundaries contained on this map are not warranted to be error-free and do not imply acceptance by the REACH partners, associates or donors mentioned on this map.

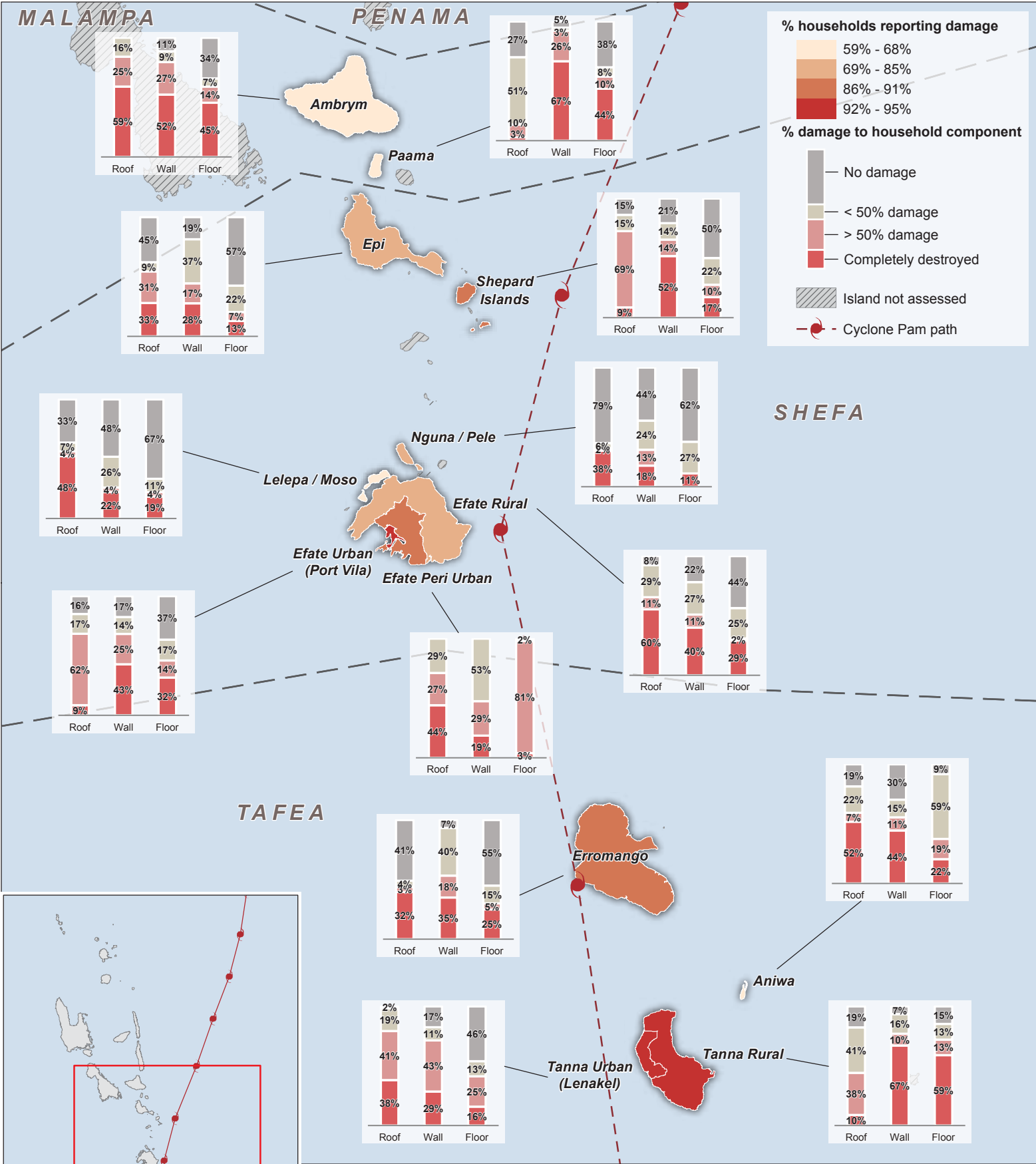
Thematic Data: REACH April 2015
Base Data: OCHA CODs

Projection: WGS 1984 UTM Zone 58S

REACH_VUT_Map_CyclonePam_ShelterAssessment_Overview_20151705_A4

Contact: reach.mapping@impact-initiatives.org

A compass rose showing North (N), South (S), East (E), and West (W). Below it is a scale bar from 0 to 100 Kilometers.



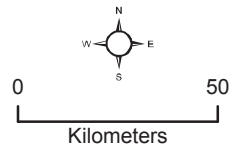
Thematic Data: REACH April 2015
Base Data: OCHA CODs

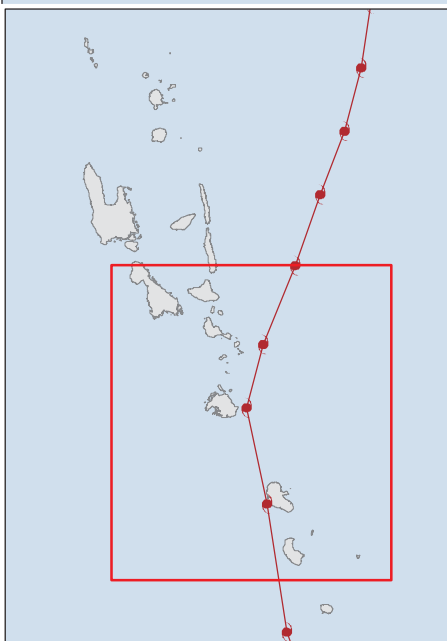
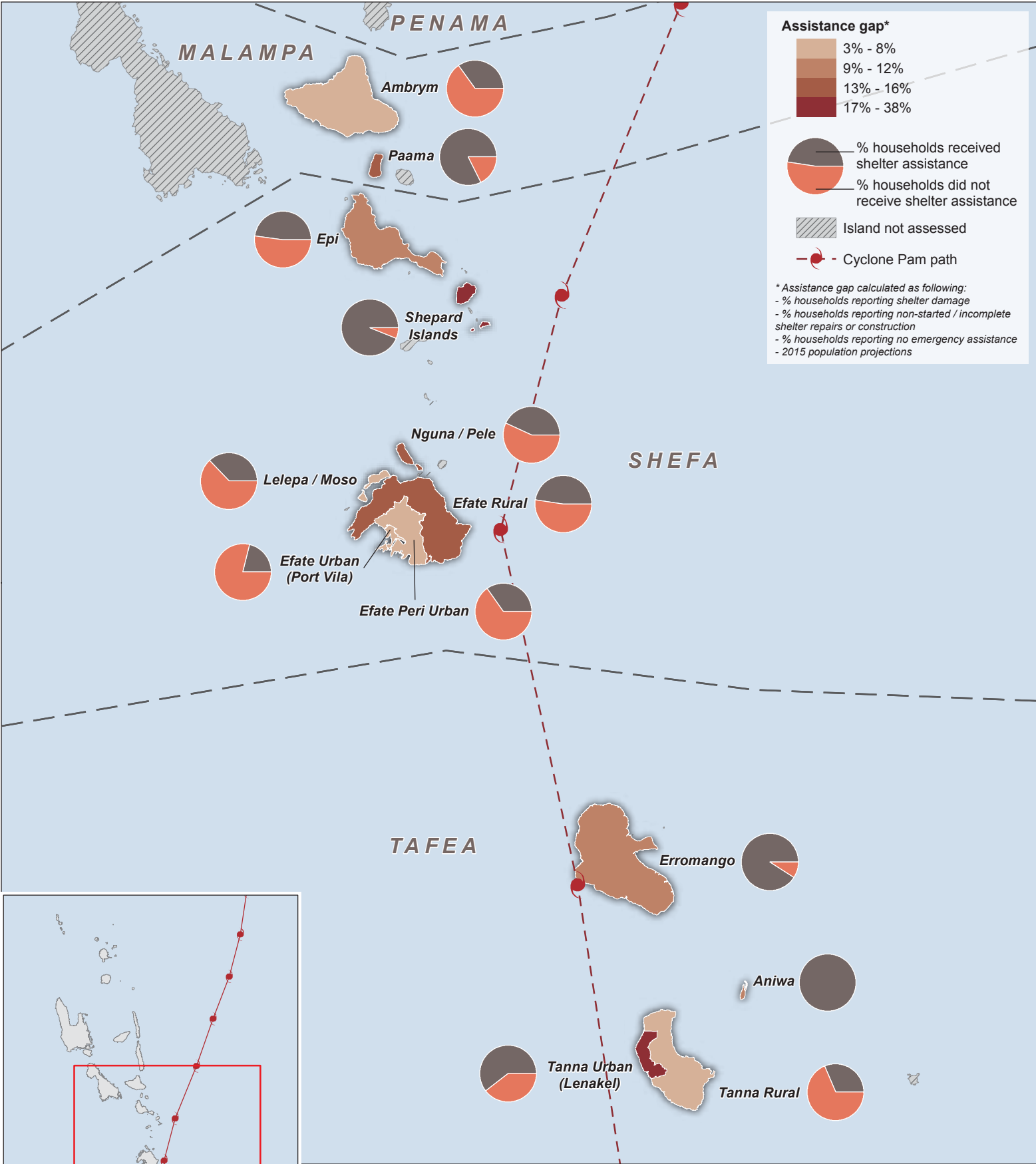
Projection: WGS 1984 UTM Zone 58S

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Thematic Data: REACH April 2015
 Base Data: OCHA CODs
 Projection: WGS 1984 UTM Zone 58S
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