

SHELTER RESPONSE EVALUATION FINAL REPORT

Cyclone Pam Response

Vanuatu

SEPTEMBER 2015



In partnership with:

ACKNOWLEDGMENTS

The Shelter Response Evaluation was designed by the Global Shelter Cluster Assessment Coordinator, with technical input from Housing Sector Working Group partners, and the Government of Vanuatu. Funding for the assessment was provided by the International Federation of the Red Cross. Data collection was implemented with support from the Vanuatu National Statistics Office, Area Councils, and Community Disaster Committees. In addition, the Shelter Cluster would like to thank the 827 households that gave their time to contribute towards this assessment.

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EXECUTIVE SUMMARY

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

At the end of March, the Global Shelter Cluster deployed an assessment team to implement a detailed Shelter and Settlements Vulnerability Assessment designed to inform the development of a medium to long term cluster strategy. The assessment found that households across the affected area experienced 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. This, combined with uneven access to resources, livelihoods opportunities, emergency assistance, and the presence of individuals with specific vulnerabilities were identified as factors which affected a household's overall vulnerability in the aftermath of Cyclone Pam.

With the close of emergency shelter activities detailed under the Humanitarian Action Plan (HAP) on 31st July 2015, the Shelter Cluster redeployed the baseline assessment team to conduct a detailed evaluation of the shelter response. The evaluation was designed to inform (1) an evaluation of the effectiveness of the shelter operational response detailed in the humanitarian action plan; (2) identify barriers to recovery, and specifically sought to:

1. Monitor the sheltering conditions for families affected by Cyclone Pam since the baseline assessment;
2. Evaluate the utility of various shelter interventions provided by Shelter Cluster agencies and others stakeholders to enable families and communities to recover;
3. Determine if emergency shelter residual gaps and recovery needs exist and if there are any access barriers;
4. Inform future preparedness and contingency planning with respect to risk reduction, repositioning of materials, and identification of vulnerable groups and sites.

With the aforementioned objectives in mind, the key findings from the evaluation include:

Displacement: 14% of households reported they were continuing to live in a new location as a result of Cyclone Pam, a decrease of 3 percentage points since the baseline assessment. 52% of this population cohort reported that they would return to their pre-crisis site at some point in the future. 35% of households reported that they were hosting at least one other displaced family member or friend in their shelter at the time of assessment, an increase of 6 percentage points since the baseline.

Shelter Assistance: 68% of households reported that they had received some kind of assistance since the launch of humanitarian operations, an increase of 14 percentage points since the baseline. This matches beneficiary numbers reported by partners in the Shelter Cluster 3W. The most commonly reported shelter assistance received was tarpaulins, representing 82% of households reporting receipt of assistance. With the exception of tents, the vast majority of households reported that they had used received assistance at the time of assessment. Where households did not use assistance it was commonly reported that it was stored for future use, highlighting a prevalence of household level preparedness strategies across the affected area. 90% of households who received shelter assistance reported they had completed substantial repair or rebuilding work on their shelter, compared with 29% of those who did not;. This suggests that overall assistance modalities employed by shelter cluster partners were successful in facilitating the recovery of affected households.

Recovery: 85% of households reported that they had completed substantial repairs or rebuilding of their shelter at the time of assessment, an increase of 13 percentage points since the baseline. Female headed households were slightly less likely to have completed substantial repairs or rebuilding to their shelters compared to those headed by males, 79% compared to 85%. 81% of households reported that they were able to recover materials from debris suitable for repairs or reconstruction work, an increase of 36 percentage points since the baseline. The most commonly reported materials recovered included nails and fixings, timber, and natangura leaves. 60% of households reported they had made changes to their building techniques as a result of the Cyclone; including general strengthening, changes to the foundation, and the addition of bracing. 44% of households were identified as having built their shelter on a concrete foundation and 15% were identified as having no foundations at all. 53% and 49% of households respectively had incorporated tie downs / hurricane strapping and bracing to their shelter in the aftermath of the Cyclone. 74% of households reported that they planned to make changes to their roof, walls, and floors at the time of assessment. With the most common planned changes including more strengthening, waterproofing, and changes of material.

Remaining Recovery Needs: 81% of households reported that they had remaining needs to facilitate full shelter recovery. Of this population 79% reported that they required fixing and nails, 53% milled timber, and 22% chainsaws and accessories. 68% of households with remaining recovery needs reported that the primary barrier to accessing the materials and equipment they require was a lack of financial resources. 13% of households reported that the main barrier to full shelter recovery was that they had other priorities. This highlights that as immediate shelter needs are met, a number of households may focus on restoring livelihoods to pre-crisis levels rather than full shelter recovery.

Preparedness: 78% of households reported that they had knowledge of, and access to, at least one evacuation/ storm shelter in their respective communities. The most common evacuation/ storm shelters were safe/ strong houses owned by friends or family, schools, and churches, which were reported by 35%, 33%, and 25% of households respectively. 66% of households reported that they had taken measures to ensure that their shelter was safer in the event of another crisis; common measures included trimming tree tops and branches near shelters, fitting shutters or screens to glass areas, and cleaning property of loose material, 65%, 50%, and 35% of households respectively.

Water and Sanitation: 34% of households reported their primary source of drinking water as rainwater catchment, representing an increase of only 2 percentage points since the baseline. 69% of households reported that they were relying on non-improved latrine types, a proportion which has increased by 16 percentage points since the baseline.

Livelihoods: 70% of households reported that they were primarily engaged in agricultural livelihoods, including subsistence gardening, prior to Cyclone Pam. Regarding post-crisis livelihoods, 64% of households reported that they had not yet restored their primary livelihood to pre-crisis levels.

Health: 31% of households reported that at least one member had instances of diarrhoea since Cyclone Pam. Furthermore, instances of malaria and skin rashes were commonly reported, 13% and 12% of households respectively.

Priority Needs: The most commonly reported priority need was drinking water, 27% of households, followed by food and shelter / housing support, 21% and 16% of households respectively. During the baseline, a significant need for essential Non Food Items (NFIs) was reported by affected households. According to evaluation data, this need has been all but fulfilled. The proportion of households reporting food as a first priority need has increased significantly since the baseline assessment, by 13 percentage points. This can be directly linked to the end of emergency distributions of rice during the latter half of the HAP implementation. With 21% of households reporting shelter / housing as a first priority need, combined with the reported remaining recovery needs, the need for housing assistance to facilitate full shelter recovery remains.

RECOMMENDATIONS

Based on the analysis presented in this evaluation, the following key recommendations for the recovery and preparedness planning process have been developed and endorsed by the Housing Sector Working Group¹:

- As a result of the increased proportion of households reporting hosting displaced friends and/or family, the support needed to relieve pressure on hosting households and the return needs for displaced persons should be discussed when partners are reviewing the findings of the International Organisation for Migration's post-HAP Displacement Tracking Matrix;
- The suitability of tents as a form of assistance in the context of Vanuatu, although not officially supported by the shelter cluster during HAP implementation, should be reviewed as a result of a significant proportion of beneficiaries selling this form of assistance for profit;
- As the response moves into the recovery and preparedness planning phase, household level preparedness measures, such as the stockpiling of received assistance and site improvements, should be explored in more detail to ensure synergies with any national level initiatives;
- 'Build back safer' programming should be reinforced throughout the affected area while focussing additional resources on locations in which the evaluation identified a low prevalence of safer building components, such as foundations, bracing, and tie-downs / hurricane strapping;
- Household efforts at making positive changes to building techniques should continue to be supported through 'build back safer' programming;
- Assessments of the post-crisis structural integrity, and level of preparedness, of existing evacuation / storm shelter solutions utilised by households in the affected area should be conducted. Furthermore in locations with relatively low access to evacuation / storm shelters should be prioritised for interventions planned by Evacuation Centre Working Group partners;
- Outreach strategies should be explored targeting communities where relatively low instances of community and household level preparedness strategies were observed.
- Issues related to delays in the procurement, and thus delivery, of tarpaulins, should be reviewed by the National Disaster Management Office, the Logistics Cluster, Shelter Cluster partners, and Housing Sector Working Group partners to inform preparedness strategies;
- In the event of similar emergencies in the future, early recovery shelter assistance modalities should be mobilised as quickly as possible to support the high ability for self-recovery amongst affected populations in Vanuatu.

¹ Building on the shelter cluster coordination platform, which ended on 31st July 2015, and partners' recovery capacity, the Public Works Department (Ministry of Infrastructure and Public Utilities - MIPU) established a Housing Sector Working Group (HSWG) which launched on 1st of August, with the support of the Department of Local Authorities (Ministry Of Internal Affairs - MOIA) and the National Disaster Management Office (Ministry of Climate Change and Adaptation - MCCA).

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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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INTRODUCTION

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

In the aftermath of the Cyclone, the Global Shelter Cluster deployed an assessment team in order to lead the implementation of a detailed shelter and settlements vulnerability assessment. The assessment sought to: verify the coverage of emergency shelter and Non Food Items (NFI) assistance and conduct gap analysis; enable the Shelter Cluster to define a comprehensive shelter and 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.

The assessment found that households across the affected area experienced differential 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 used for construction of their shelter. This, combined with uneven access to resources, livelihoods opportunities, emergency assistance, and the presence of individuals with specific vulnerabilities, were identified as factors which affected a household's overall vulnerability in the aftermath of Cyclone Pam.

Based on the analysis presented in the Shelter and Settlements Vulnerability Assessment final report, the following key recommendations for the remainder of programming detailed in the Humanitarian Action Plan (HAP) and recovery phase shelter programming were identified and endorsed by shelter cluster actors:

- A holistic approach to defining household level vulnerability should be developed; including consideration of households with individuals with specific vulnerabilities, as well as households with shelter specific vulnerabilities;
- Displaced families, who continue to be hosted by friends and family throughout the affected area should be considered as a 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.

The HAP Shelter Response Strategy, which this evaluation focused on, consisted of the following three distinct objectives:

| Cluster Objective 1: Provide emergency shelter and non-food items for people whose houses have been partially damaged or destroyed | | | Supports Strategic Objective 1 |
|--|----------------------|---|--------------------------------|
| Indicator | | | Target |
| # of damaged households that have access to appropriate emergency shelter materials | | | Baseline |
| Activities | Locations | Indicator | Target |
| Tarpaulin distribution | All affected islands | # of damaged households that have received tarpaulins | 18,000 |
| Tool kits | All affected islands | # of damaged households that have access to tools | 18,000 |
| Kitchen sets | All affected islands | # of damaged households that have received kitchen sets | 8,500 |
| Cluster Objective 2: Assist affected people with repair and reconstruction of houses, water and sanitation facilities | | | Supports Strategic Objective 2 |
| Indicator | | | Target |
| # of households that have achieved a durable roofing solution | | | 18,000 |
| # of supplementary hardware interventions that contribute to durable housing (tools, structural materials) | | | 18,000 |
| Activities | Locations | Indicator | Target |
| Ensuring access to roofing materials | All affected islands | # of households that have achieved a durable roofing solution | 18,000 |
| Shelter technical education and training | All affected islands | # of households that have participated in shelter training / education | 18,000 |
| Support for access to materials; debris removal, timber milling | All affected islands | # of households that have access to recovery materials | 18,000 |
| Fixing kit (nails, strapping, wire) | All affected islands | # of households that have received a fixing kit | 18,000 |
| Cluster Objective 3: Investment in safer community buildings | | | Supports Strategic Objective 3 |
| Indicator | | | Target |
| # of households in the affected areas that have access to safer community buildings | | | Baseline |
| Activities | Locations | Indicator | Target |
| Technical building or engineering advice | All affected islands | # of households in the affected areas that have access to safer community buildings | 18,000 |
| Material support for repairs and improvements | All affected islands | # of households in the affected areas that have access to safer community buildings | 18,000 |

The HAP Shelter Cluster Response Strategy, as per instructions from the Government of Vanuatu, was designed to be implemented in a reduced timeframe from an initially planned six months which then went down to three months. Furthermore, the Government of Vanuatu requested that humanitarian actors focused on objective 1, provision of emergency shelter assistance, rather than the longer term assistance detailed under objective 2 and 3; which will be covered under a Government led recovery framework.

With the close of emergency shelter activities detailed under the HAP on 31st July 2015, the Shelter Cluster redeployed the baseline assessment team to conduct a detailed evaluation of the shelter response. The Shelter Cluster is now focused on the preparedness planning process as per the Cyclone Pam cluster coordination guidelines. The shelter / housing recovery phase is being coordinated through the Housing Sector Working Group, led by the Public Works Department and the Department of Local Authorities, with the support of UN Habitat.

METHODOLOGY

OBJECTIVES

Following the completion of shelter activities outlined in the Humanitarian Action Plan (HAP) and the beginning of the transition from the emergency phase to longer term preparedness / recovery programming, the Shelter Cluster redeployed the baseline assessment team in August 2015 in order to conduct a detailed evaluation of the shelter response. The overall objective of the evaluation was to inform (1) an evaluation of the effectiveness of the shelter operational response detailed in the humanitarian action plan (2) identify barriers to recovery. Through the redeployment of its assessment team, the Shelter Cluster specifically sought to:

1. Monitor the sheltering conditions for families affected by Cyclone Pam since the baseline assessment;
2. Evaluate the utility of various shelter interventions provided by Shelter Cluster agencies and others stakeholders to enable families and communities to recover;
3. Determine if emergency shelter residual gaps and recovery needs exist & if there are any access barriers;
4. Inform future preparedness and contingency planning with respect to risk reduction, prepositioning of materials, and identification of vulnerable groups and sites.

SAMPLING METHODOLOGY

In order to allow for direct comparisons with findings from the baseline assessment, the Shelter Cluster assessment team followed the same sampling methodology whereby a total of 13 sample sites were selected for 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. The 13 sample sites were selected as areas that had reportedly sustained significant shelter damage as a result of Cyclone Pam. The sampling strategy utilised throughout the assessment was designed to provide shelter actors with a representative sample of cyclone affected islands and sites which had been targeted for interventions detailed in the HAP with a confidence level of 90% and a margin of error of 10%.

DATA COLLECTION

Data collection was conducted between 17th August and 4th September 2015 by a team of enumerators recruited from the Vanuatu National Statistics Office, Area Councils, Community Disaster Committees, and the University of the South Pacific. Responses from participating households were recorded on an Open Data Kit based data collection tool deployed on Android smartphones.

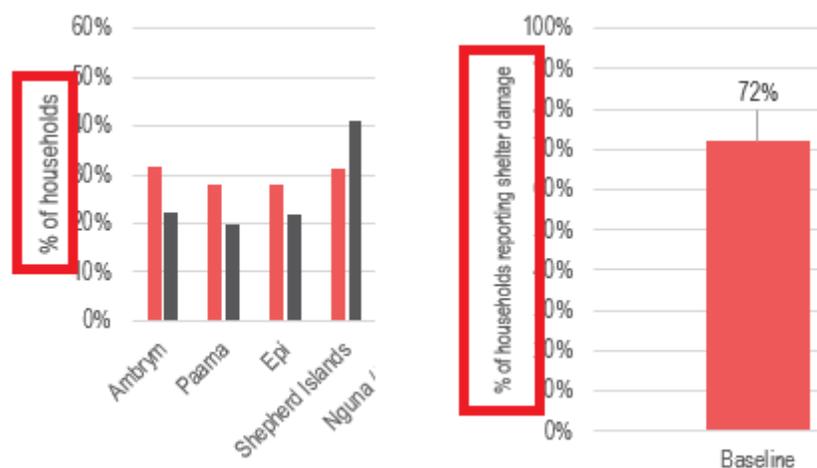
Table 1: Assessed households by island / sample site

| Island / Sample Site | Target Households | Assessed Households |
|-------------------------|-------------------|---------------------|
| Ambrym | 56 | 72 |
| Aniwa | 37 | 37 |
| Efate Peri Urban | 66 | 68 |
| Efate Rural | 64 | 64 |
| Efate Urban (Port Vila) | 66 | 67 |
| Epi | 64 | 83 |
| Erromango | 56 | 64 |
| Lelepa / Moso | 46 | 49 |
| Nguna / Pele | 59 | 60 |
| Paama | 56 | 56 |
| Shepard Islands | 62 | 71 |
| Tanna Rural | 66 | 67 |
| Tanna Urban (Lénakel) | 65 | 69 |
| Total | 763 | 827 |

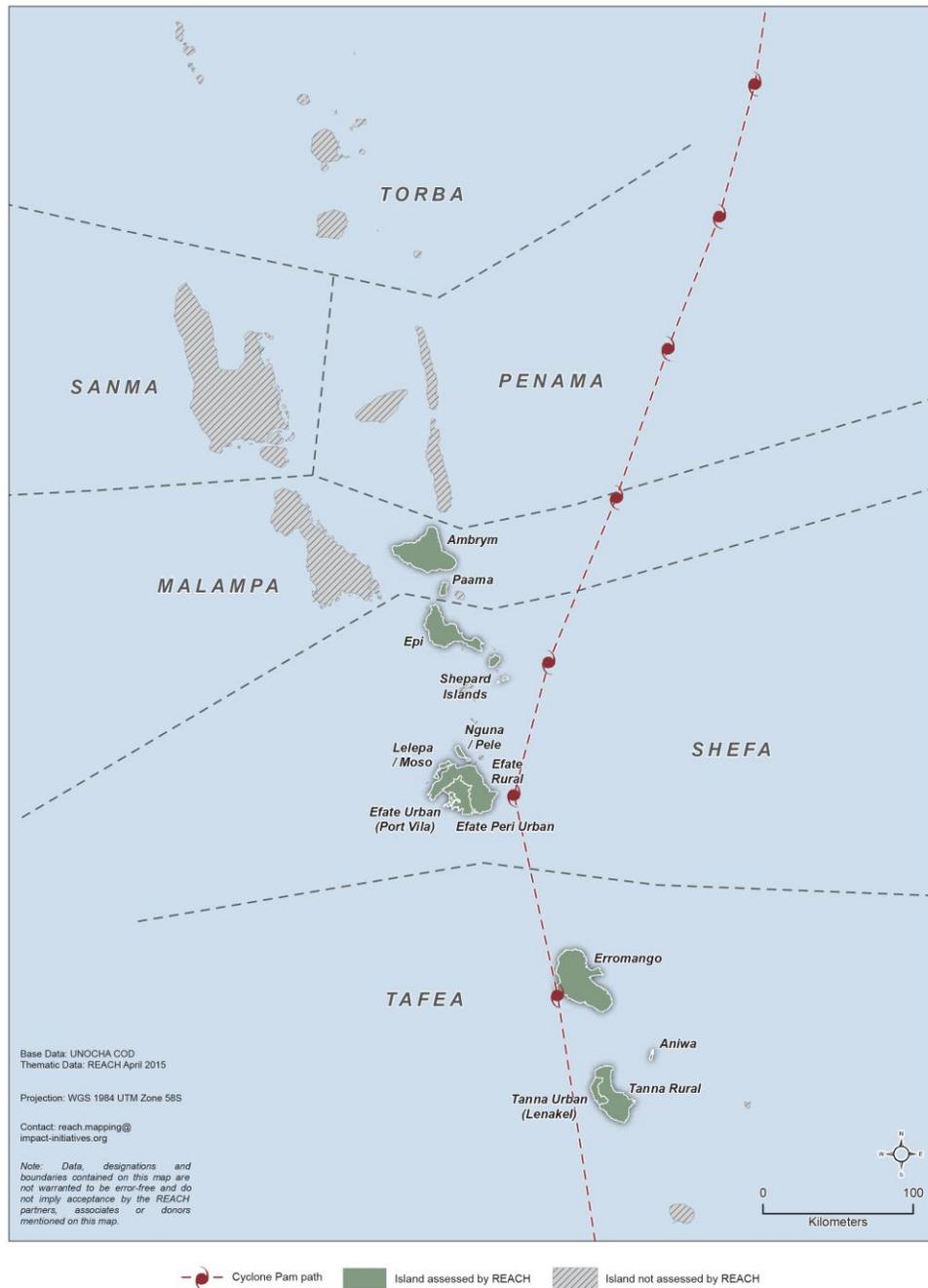
LIMITATIONS

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 invariably have a lower confidence level. As such, findings calculated on this basis should only be considered as indicative. Findings calculated on specific sub-sets of the population are identified on the y-axis. Whereby “% of households” is the full sample and, for example, “% of households reporting....” represents a specific subset of the population.

Figure 1: Limitations example



Map 1: Sample sites



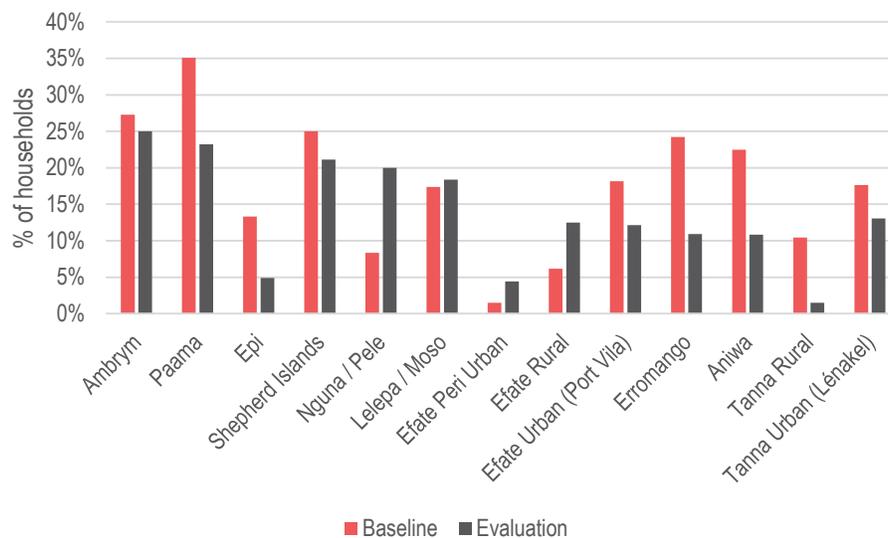
FINDINGS

DISPLACEMENT

Through the baseline assessment, it was determined that 17% of households across the affected area had been displaced from their original location as a result of Cyclone Pam and were continuing to live in the new location at the time of data collection. The overall proportion of households continuing to live in a new location at the time of the evaluation had decreased slightly to 14%. However, the change between the baseline and evaluation was more pronounced in certain sample sites. For example, while 10% of households in Tanna Rural were living in a new location at the time of the baseline, this had decreased to only 1% at the time of the evaluation. A similar trend can be observed in Epi where 13% of households reported living in a new location during the baseline and only 5% during the evaluation.

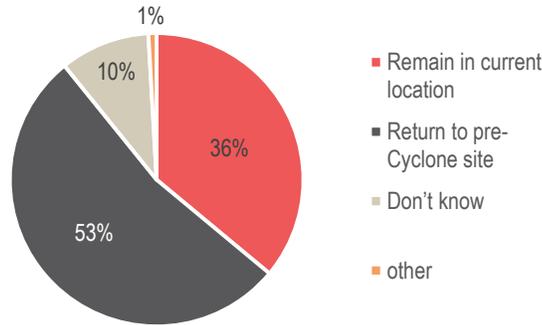
In Nguna / Pele, Lelepa / Moso, Efate Peri Urban, and Efate Rural, an increase in the proportion of households living in a new location since the baseline was observed. The causes of this apparent increase in displacement should be explored further to identify the impact, if any, on planned shelter recovery and preparedness programming.

Figure 2: Households living in a new location post-Cyclone Pam



Regarding household intentions, it was most commonly reported by 52% of the households still living in a new location at the time of the evaluation that they planned to return to their original pre-Cyclone site at some point in the future. Despite this, a significant proportion of this population did report- 36% - that they planned on remaining in their current location. In recognition of the potentially differing needs between households planning to return to their original site and those planning to remain in a new location, shelter partners should explore specific intervention packages during the recovery planning process.

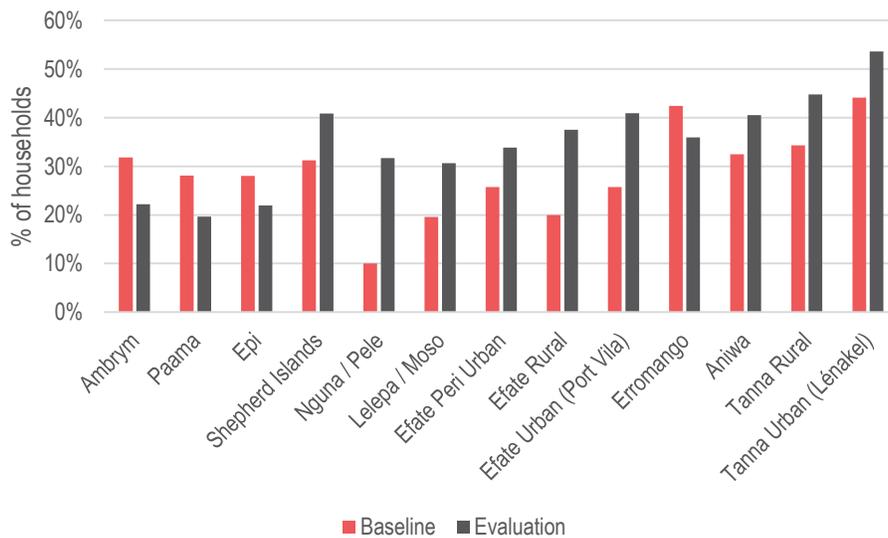
Figure 3: Displaced households' intentions



The baseline assessment report recommended that households hosting displaced family members or friends in their shelter(s), 29% at the time of the baseline, should have been considered a group with specific needs as a result of the pressure put on available households resources when hosting additional persons. Furthermore, it was recommended that specific interventions should be explored to facilitate the return of displaced persons and relieve any pressure placed on hosting households.

Through the evaluation, it was determined that the overall proportion of households reporting that they were hosting displaced family members or friends had increased from 29% to 35%. As a result, the aforementioned baseline recommendation has potentially become more acute and therefore the need, if any, for additional support amongst hosting households should be explored, and, where necessary, defined for both in terms of the recovery phase and from a preparedness perspective.

Figure 4: Households hosting displaced family members/ friends

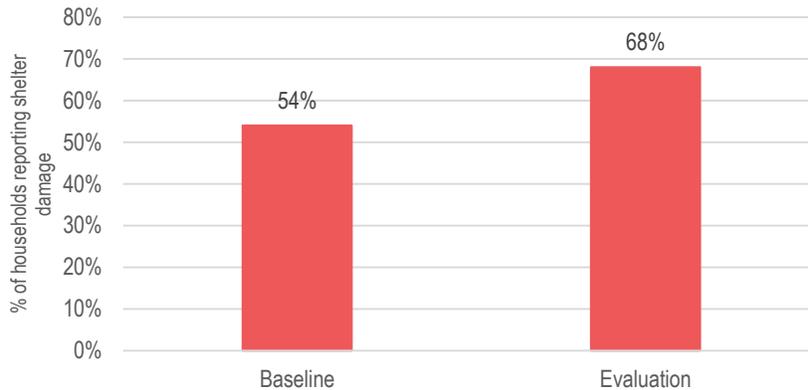


SHELTER ASSISTANCE

At the time of the baseline assessment just over half i.e. 54%, of households across the affected area reported that they had received some kind of shelter assistance. By the time data collection was conducted for the shelter response evaluation, this proportion had risen to 68%. The proportion of households reporting receipt of shelter assistance during this evaluation directly corresponds with Shelter Cluster 3W data. Out of an estimated affected population of 37,600 households², the Shelter Cluster provided assistance to over 26,000, or 69% of the estimated affected households.

With the close of the HAP and the end of emergency phase shelter interventions, potential gaps in shelter assistance should be explored further during the planning of recovery and preparedness programming. It should, however, be noted that implementation of early recovery shelter programming including tool kits, fixing kits, and safe shelter awareness trainings, has continued after the close of the HAP. As such, it is likely that the proportion of households reporting that they have not received assistance will continue to decrease.

Figure 5: Households reporting receipt of shelter assistance

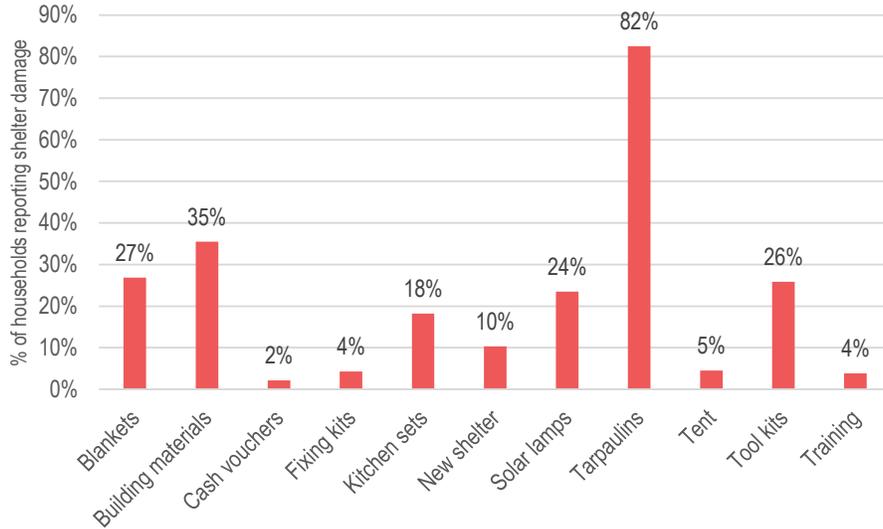


As with the baseline, tarpaulins made up the overwhelming majority of assistance reportedly received by households across the affected area; with 82% of households which sustained shelter damage reporting receipt of this form of assistance during the evaluation. The predominance of tarpaulins as a reported form of assistance received across the affected area is in line with shelter cluster 3W reporting wherein the HAP target of 18,000 households was surpassed by an additional 6,018 households. In addition to tarpaulins, significant proportions of cyclone affected households reported receipt of building materials (35%), blankets (27%), and tool kits (26%).

The low proportion of households which reported participation in training delivered by a Shelter Cluster partner may be a result of distribution modalities employed by partners whereby cluster partners delivered training to beneficiaries during distributions rather than as a standalone training package. Certainly this assumption is reflected in the high proportion of households which reported receiving best usage instructions in tandem to receiving distributions of assistance packages (see Figure 10 for details).

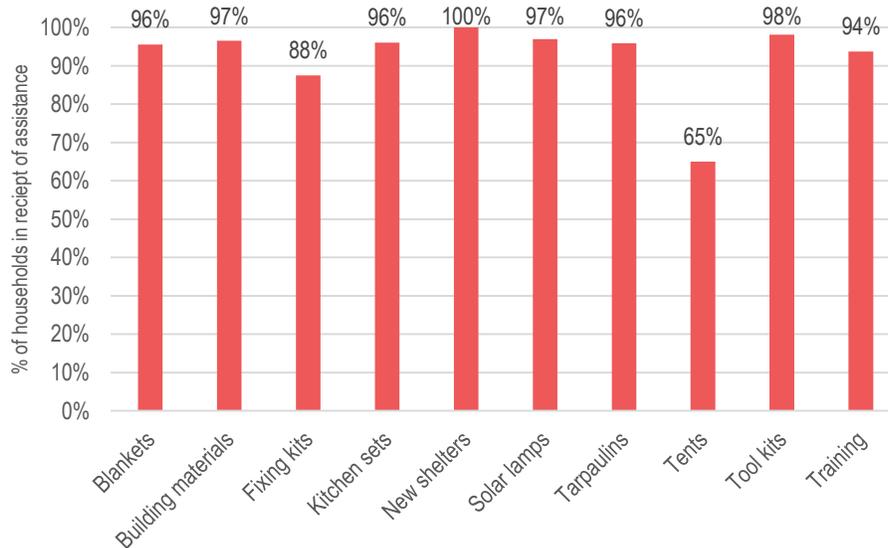
² World Bank, Vanuatu Post Disaster Needs Assessment, 2015

Figure 6: Types of shelter assistance received



The majority of households in receipt of each modality of assistance measured through the evaluation had begun using the assistance at the time of assessment. For all assistance types, except tents, over 80% of households reported that they had used the received assistance. For those in receipt of tents, only 65% reported that they had used them at the time of assessment. This highlights that tents are perhaps an unsuitable modality of shelter assistance in the context of Vanuatu.

Figure 7: Households reporting use of received interventions

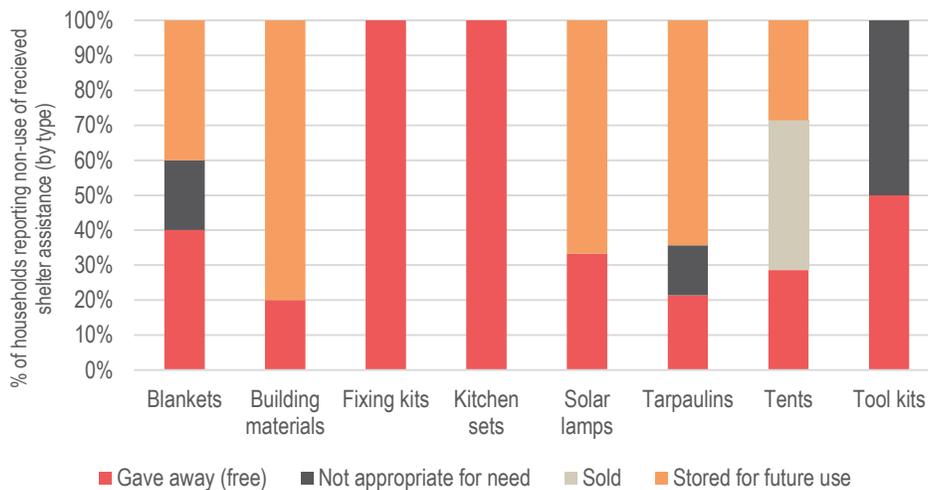


The reasons for non-use of received assistance vary by modality of assistance. Of households reporting receipt of fixing kits and kitchen sets, 100% who had not used them by the time of assessment reported that they had given them away for free. Giving away for free does not necessarily suggest that certain assistance packages were not useful, it could suggest that households gave them away to support other more affected households in the community or pooled

the assistance into a common stock. The majority of households who received building materials, solar lamps, and tarpaulins, but had not used them at the time of assessment reported that they had stored them for future use, 87%, 67%, and 64% of households respectively. While this does suggest that this group of households did not necessarily require this form of emergency assistance as a priority, it does highlight a prevalence of household level preparedness strategy across the affected area. As the Cyclone Pam response moves into the recovery and preparedness planning phase, household level preparedness strategies should be explored further.

While the sale of assistance was not identified as a widely employed practise across the affected area, 43% of households who had received tents but not used them at the time of assessment reported to have sold them.

Figure 8: Reasons for non-use of received assistance



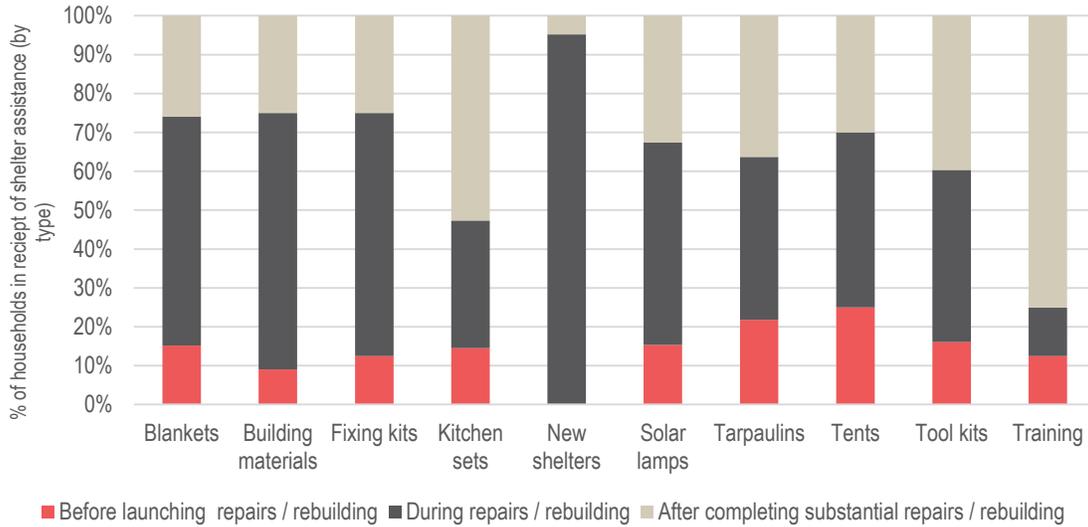
With regards to the timing of assistance, a clear trend can be observed where it was uncommon for assistance to be received by affected households before they had launched repairs / rebuilding of their shelter.

As per the Shelter Response Strategy detailed in the HAP, tarpaulins were intended to constitute emergency assistance to meet immediate sheltering needs of affected households. Furthermore, tarpaulin distributions were planned to be completed by 31st April 2015. However, according to 3W data, tarpaulin distributions continued well past the end of the HAP implementation on 31st July 2015. The continuation of this form of emergency shelter assistance 3 months into the response can in part explain the 36% of households which reported that they had completed substantial repair or rebuilding of their shelter at the time of receipt. Of the 36% of households which reported they had received tarpaulins after repairs or rebuilding of their shelter, 94% of reported that they had used the item at the time of the assessment; suggesting that the tarpaulins were used for supplementary reasons rather than the emergency reasons for which they had initially been intended.

Furthermore, the provision of tarpaulins to beneficiaries after they had completed rebuilding is likely a symptom of this form of assistance being subject to delays in supply chains. The delay in arrival of tarpaulins to Vanuatu resulted in planned distributions being pushed back, and as a result, a large proportion of beneficiaries received tarpaulins after they had finished rebuilding. As a result of this situation, it is clear that the NDMO, Logistics Cluster, and Shelter Cluster need to review the capacity of existing systems to ensure a timely emergency shelter response in remote areas such as Vanuatu where insufficient prepositioned stocks of emergency items are available.

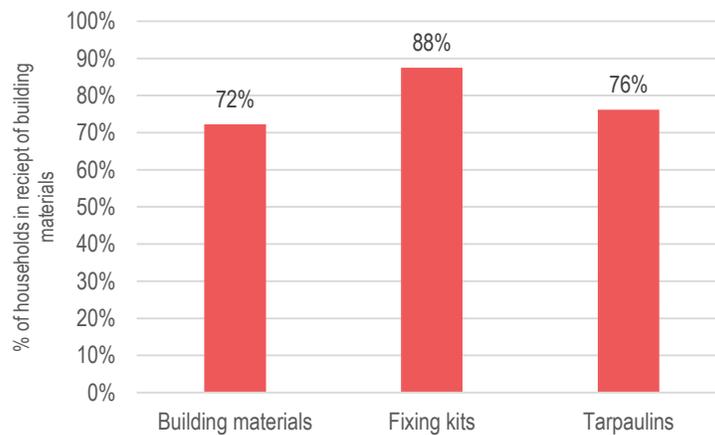
Unlike with tarpaulins, building materials were received by the majority of beneficiaries- 66% of households - while they were in the process of repairing and rebuilding their shelter, suggesting a better developed beneficiary targeting system for this assistance modality. The same trend can also be observed with the receipt of fixing kits, wherein 63% of households reported that they received this modality of assistance during repairs / rebuilding.

Figure 9: Timing of received assistance



As per cluster objective two in the HAP Shelter Response Plan, shelter actors are committed to providing technical shelter training and education to households across the affected area. According to assessment data, this has been successful with the vast majority of beneficiaries of building materials, fixing kits, and tarpaulins reporting that they had received best usage instructions at the time of assistance delivery; 72% of households in receipt of building materials, 88% in receipt of fixing kits, and 76% in receipt of tarpaulins. This arguably offsets the relatively low proportion of households which reported that they participated in a standalone shelter technical training, 4% of households (see Figure 6 above).

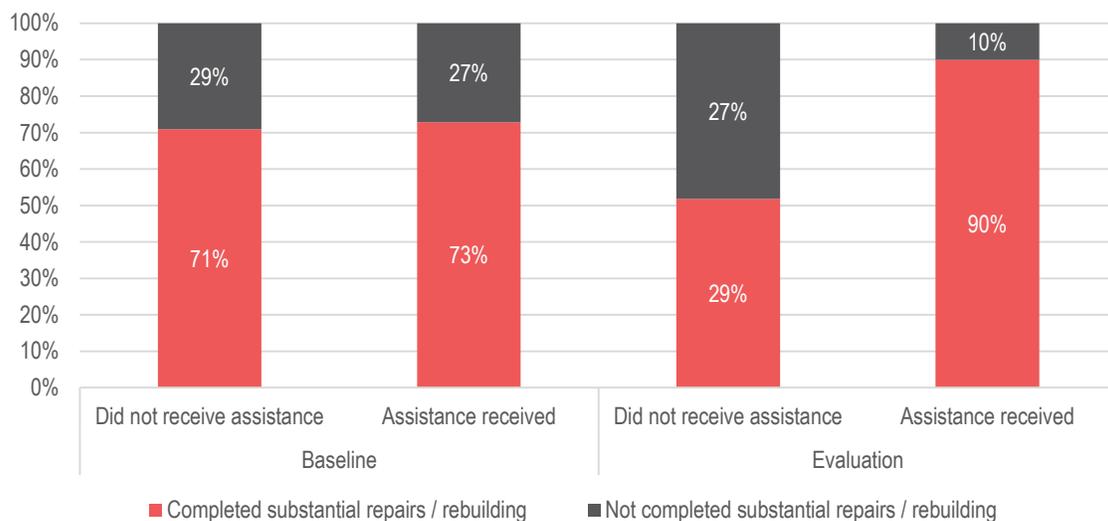
Figure 10: Households reporting receipt of best usage instructions



Data collected during the baseline assessment suggested that assistance had little effect on the ability of households across the affected area to self-recover. Specifically, assistance received prior to the implementation of the baseline assessment was identified as having little effect on the ability of households to have completed substantial repairs / rebuilding work. A majority of both households who had received and not received assistance reported that they had completed substantial repair / rebuilding work on their shelter, 71% and 73% respectively.

During the evaluation however, a much clearer positive correlation between receipt of assistance and the ability of a household to recover can be observed. While 90% of households who received assistance reported that they had completed substantial repair or rebuilding work on their shelter, only 29% of those who did not receive assistance reported the same. This suggests that shelter assistance packages delivered predominately in the second half of the HAP shelter response, for example building materials, more effectively met the recovery needs of affected households.

Figure 11: Self Recovery vs. Receipt of Assistance



RECOVERY

Repairs & Rebuilding

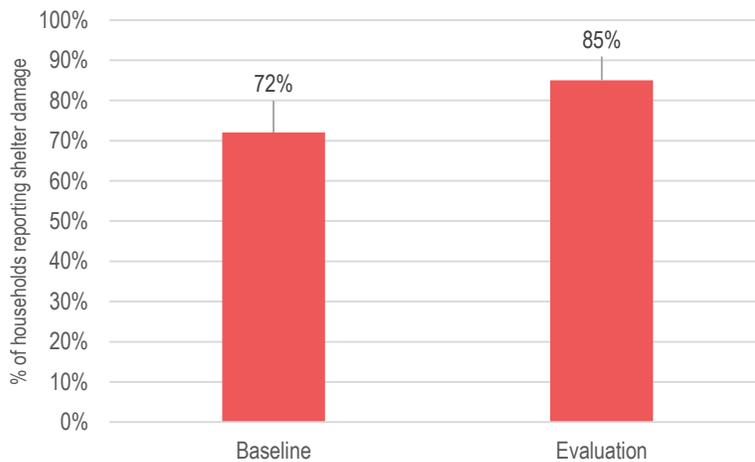
The baseline assessment confirmed anecdotal evidence suggesting the significant ability of the affected population to recover, with 72% reporting that they had at least completed substantial repairs or reconstruction of their shelter at the time of assessment³. During the evaluation, the proportion of the affected population which had completed substantial repairs or reconstruction work to their shelter had risen by 13 percentage points to 85%. A slight difference in recovery

³ For the purposes of this assessment substantial repair / reconstruction work was defined by households which perceived that their immediate shelter needs had been met.

rates can be observed between female and male headed households, with 79% of female headed compared to 85% of male headed reporting having completed substantial repairs or reconstruction to their shelter.

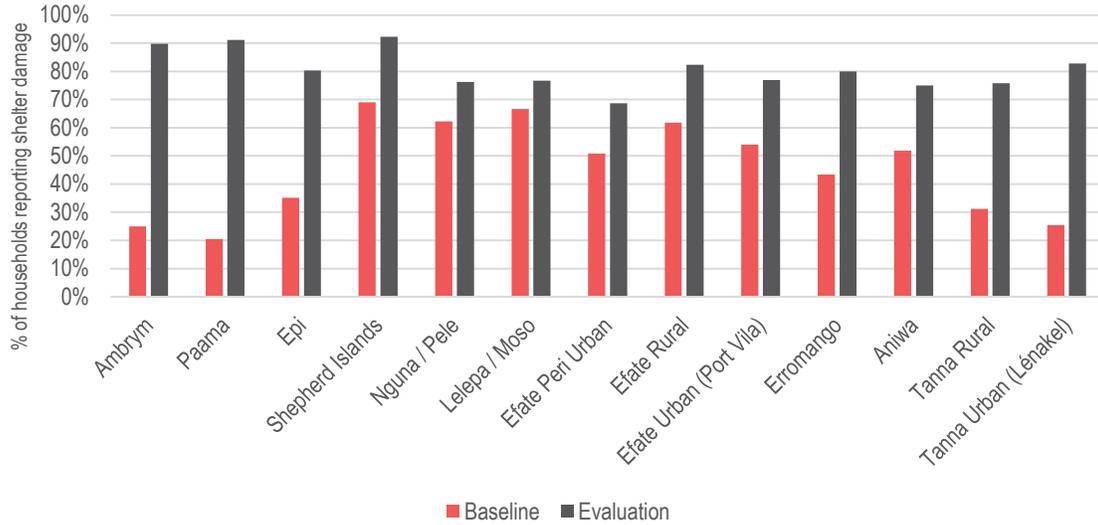
While baseline data had suggested that shelter assistance had little impact on the ability of households to recover, highlighting an ability for self-recovery sufficient to meet at least emergency shelter needs, data from the evaluation shows that shelter assistance has allowed more households to recover (see Figure 11). This suggests that recovery shelter assistance packages which were delivered in the latter half of HAP implementation, such as building materials, training, tool kits, and fixing kits, were relatively successful in supporting recovery.

Figure 12: Households reporting having completed substantial shelter repairs or reconstruction



Less than half of households across the affected area (45%) reported that they were able to recover materials in a suitable condition for repairs and reconstruction work at the time of the baseline assessment. However, according to data collected during the evaluation, the proportion of households relying on recovered materials for the repair or reconstruction of shelters had increased significantly to 81%. Furthermore, during the baseline a majority of households reporting the recovery of materials in a suitable condition for repairs or reconstruction were only identified in a minority of sample sites. However, by the time of the evaluation over 70% of households in all sample sites reported that they were able to conduct this recovery activity.

Figure 13: Households reporting being able to use recovered materials for shelter repair / reconstruction

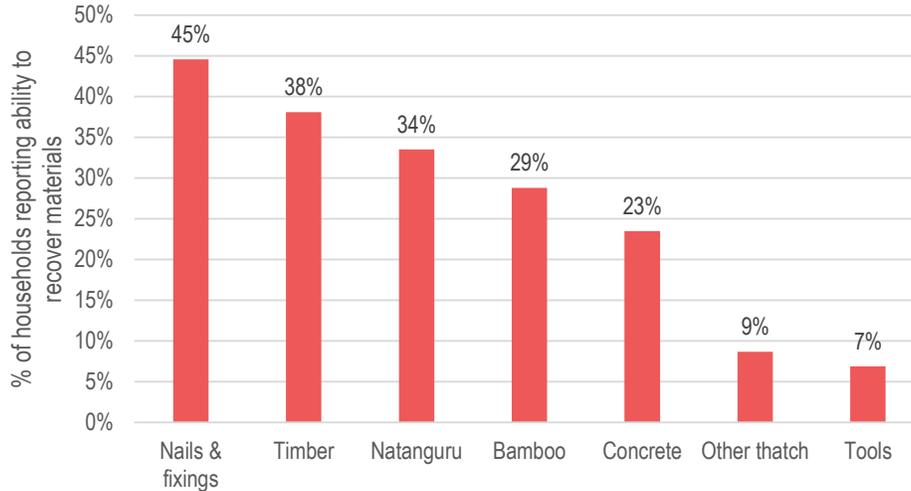


The significantly increased proportion of the population reporting that they had recovered materials for shelter repairs and reconstruction highlights the significant investment in time and resources required to recover suitable materials. This prevailing situation can be in part explained by affected populations attempting to restore shelter conditions to pre-crisis levels rather than focusing only on immediate emergency shelter needs.

Almost half, 45%, of households who recovered materials reported that they had recovered nails and fixings, a material which would arguably require a significant time investment in sifting through debris. Furthermore, a significant population, 38%, reported the ability to recover timber. This can be explained by the widespread availability of felled trees throughout much of the affected area which provided affected populations with the opportunity to harvest timber. This was also potentially facilitated by the restoration of transportation / delivery services in the latter half of the HAP, and interventions by humanitarian actors, resulting in an increased availability of tools, equipment and consumables.

A considerable proportion of households who recovered materials reported that they were able to recover natural materials such as natanguru and bamboo in a suitable condition. This situation can arguably be attributed to necessity as a result of the significant time it will take for the re-establishment of stocks of natural building materials and a lack of available resources to transport man-made materials from commercial centres.

Figure 14: Types of materials recovered in suitable condition

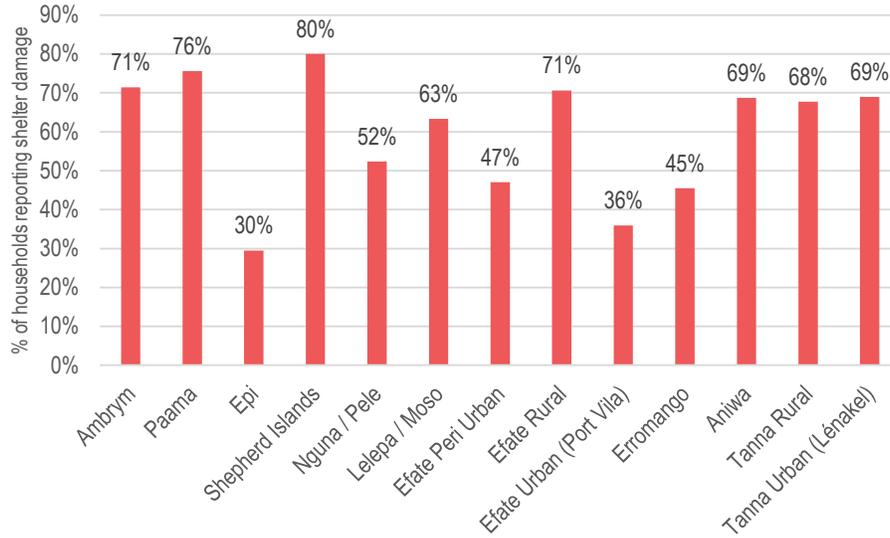


Shelter Improvements

Overall, the majority of households, 60%, across the affected area reported that they had made changes to their shelter building techniques as a result of damage sustained during Cyclone Pam. The proportion of households reporting that they made changes to their building techniques is, for the most part, highest on islands which sustained the most significant levels of shelter damage as a result of Cyclone Pam. This could in part be explained by the concentration of shelter interventions in locations which had sustained higher levels of damage.

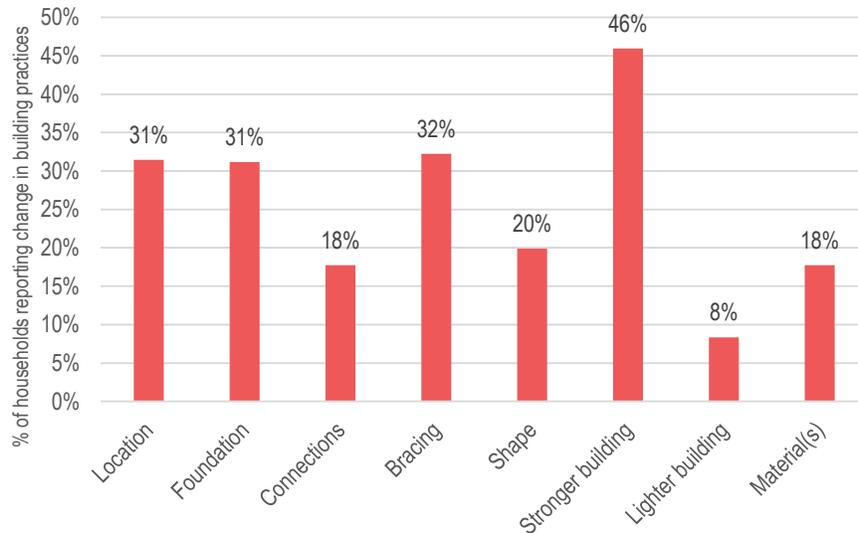
Another commonly cited reason amongst households for changing building techniques, other than solely damage from Cyclone Pam, was that they had heard radio messaging on better building techniques, cited by 23% of households. Interestingly, another commonly cited reason by 12% of households for changing building techniques was the availability of suitable tools, suggesting that tool kits distributed by humanitarian actors have had a positive effect on preparedness for future events like Cyclone Pam.

Figure 15: Reported changes in building techniques



The most commonly reported change to building techniques was the general strengthening of the building, 46% of households. Other commonly reported changes include the addition of bracing, 32% of households, a change in the location of the shelter, 31% of households, and changes to the foundation, 31%. Similar to the results of the baseline, the proportion of households reporting that they had changed the material of their shelter was relatively low, constituting 18% of the affected population, this could indicate a non-availability of other materials. Furthermore, the majority of this proportion of households, 76%, reported that they had been able to recover from debris shelter materials, which would have undoubtedly been the same pre-crisis materials, in suitable condition for repairs or rebuilding.

Figure 16: Reported changes to building techniques



While the reported changes in building techniques provide some insight into changes made by cyclone affected households, the Shelter Cluster assessment team trained enumerators to identify if specific safer building components

(bracing, tie downs, and reinforced foundations) had been incorporated into assessed shelters through direct observation.

Concrete foundations were the most commonly identified typology, reported by 43.6% of households overall, followed by wooden posts in the ground, which was reported by 41.7%. Finally, 14.7% of shelters were built with no foundations. The highest proportion of shelters with no foundations were identified in Paama, 34%, Ambrym, 31%, and the Shepherd Islands, 22%. The aforementioned locations could therefore potentially be prioritised for 'Build Back Safer' programming as the response moves into the recovery / preparedness phase.

Just over half of shelters, 53%, were identified as having had incorporated tie downs / hurricane strapping into the design. The presence of these safer building components varied significantly by island. The lowest prevalence of this technique was identified as being in Epi, Tanna Urban (Lénakel), and Tanna Rural, 32%, 36%, and 40% of households respectively. While the aforementioned islands could arguably be prioritised for 'Build Back Safer' programming, the low adoption of tie downs / hurricane strapping across the board may constitute a need for reinforced messaging throughout the affected area.

Just under half, 49%, of shelters were identified as having bracing in line with 'Build Back Safer' guidelines. Of particular concern are The Shepherd Islands, Efate Urban (Port Vila), and Paama, where only 30%, 35%, and 36% of shelters respectively were identified as having bracing. However, as with tie down / hurricane strapping above, the low adoption of this technique across the board may necessitate reinforced messaging throughout the affected area.

Figure 17: Enumerator observation of safer building components

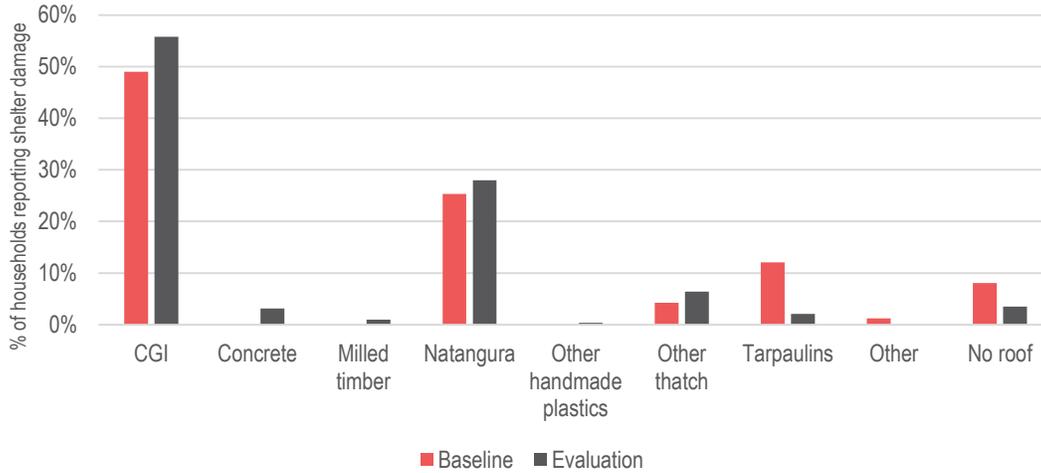
| | Foundations | | | Tie-downs / hurricane strapping | Bracing |
|------------------|---------------------|-----------------------|---------------|---------------------------------|---------|
| | Concrete foundation | Wooden post in ground | No foundation | | |
| Ambrym | 25% | 53% | 22% | 53% | 38% |
| Paama | 20% | 46% | 34% | 57% | 36% |
| Epi | 39% | 52% | 9% | 32% | 46% |
| Shepherd Islands | 32% | 37% | 31% | 58% | 30% |
| Nguna / Pele | 63% | 23% | 13% | 65% | 65% |

| | | | | | |
|-------------------------|-----|-----|-----|-----|-----|
| Lelepa / Moso | 55% | 33% | 12% | 65% | 55% |
| Efate Peri Urban | 65% | 29% | 6% | 62% | 56% |
| Efate Rural | 64% | 20% | 16% | 66% | 61% |
| Efate Urban (Port Vila) | 48% | 35% | 17% | 56% | 35% |
| Erromango | 30% | 70% | 0% | 53% | 61% |
| Aniwa | 30% | 70% | 0% | 51% | 49% |
| Tanna Rural | 31% | 51% | 18% | 40% | 52% |
| Tanna Urban (Lénakel) | 62% | 29% | 9% | 36% | 57% |

In terms of materials utilised for roof construction, there is a clear trend of a lessening reliance on unsustainable roofing solutions and an increasing use of more durable solutions between the baseline and evaluation. The proportion of households that reported using tarpaulins as their primary roofing material during the baseline has decreased by 10 percentage points to 2% population in the affected area. Additionally, the proportion of households who were identified as having no roof on the primary sleeping shelter during the baseline has decreased by 5 percentage points to 4% of households.

Conversely, as mentioned above, an increase in use of more durable solutions can be observed. For example, the proportion of households who reported their primary roofing material as being Corrugated Galvanised Iron (CGI) has increased by 7 percentage points since the baseline to 56%. The reported use of natangura as a roofing material increased by 3 percentage points to 28% of households since the baseline. The slightly increased availability of natangura leaves for roofing construction can in part be explained by the types of materials households were able to recover for repairs and rebuilding work (34% reported natangura) and potentially by the transport of natangura leaves from non-affected islands, an idea that was raised during shelter cluster meetings.

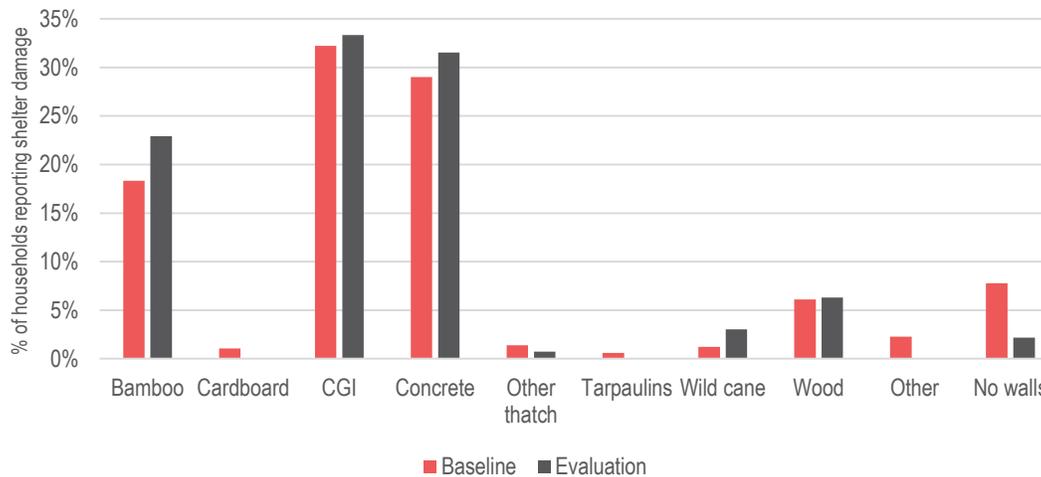
Figure 18: Primary material used for roof construction



A similar trend can be observed when looking at the change in usage of wall materials between the baseline and evaluation. The proportion of households utilising tarpaulins as a roofing solution, and those who were identified as having no walls at all during the baseline have both decreased; tarpaulins by 1 percentage point to 0% and those with no walls by 6 percentage points to 2% of households.

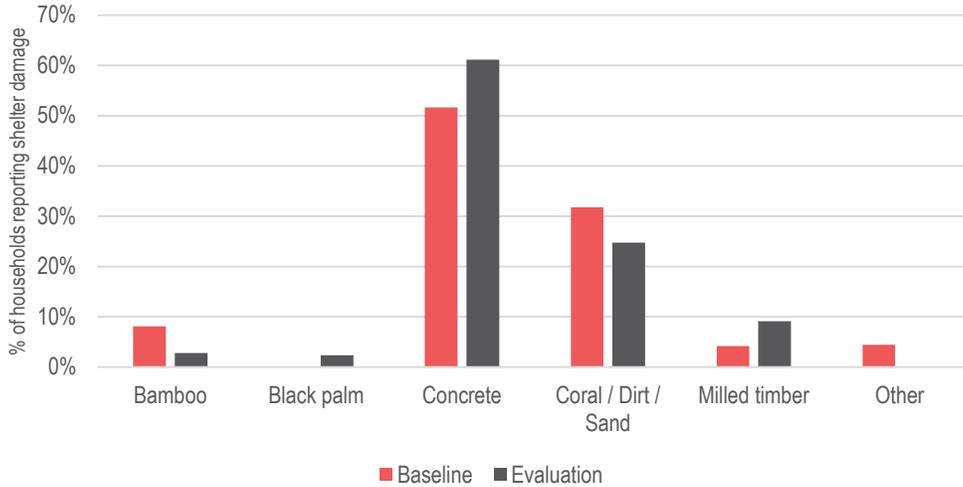
The use of bamboo, concrete, and CGI as materials for wall construction have all increased slightly since the baseline. Bamboo by 5 percentage points to 23%, concrete by 3 percentage points to 32%, and CGI by 1 percentage point to 33%. The increased use of bamboo, CGI, and concrete directly correlates with the materials which have reportedly been recovered by households to be used in shelter repairs or reconstruction (see Figure 14).

Figure 19: Primary material used for wall construction



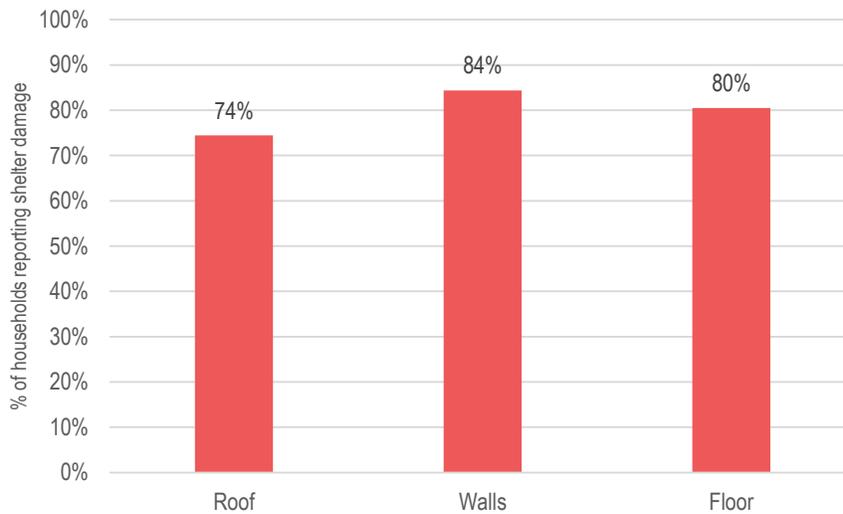
In terms of floor materials, a decrease in the number of households without any floor can be observed between the baseline and the evaluation; the proportion of households reliant on this floor solution has decreased by 7 percentage points to 25%. Conversely, the proportion of households reporting that they had a concrete floor has increased by 9 percentage points to 61%.

Figure 20: Primary material used for floor construction



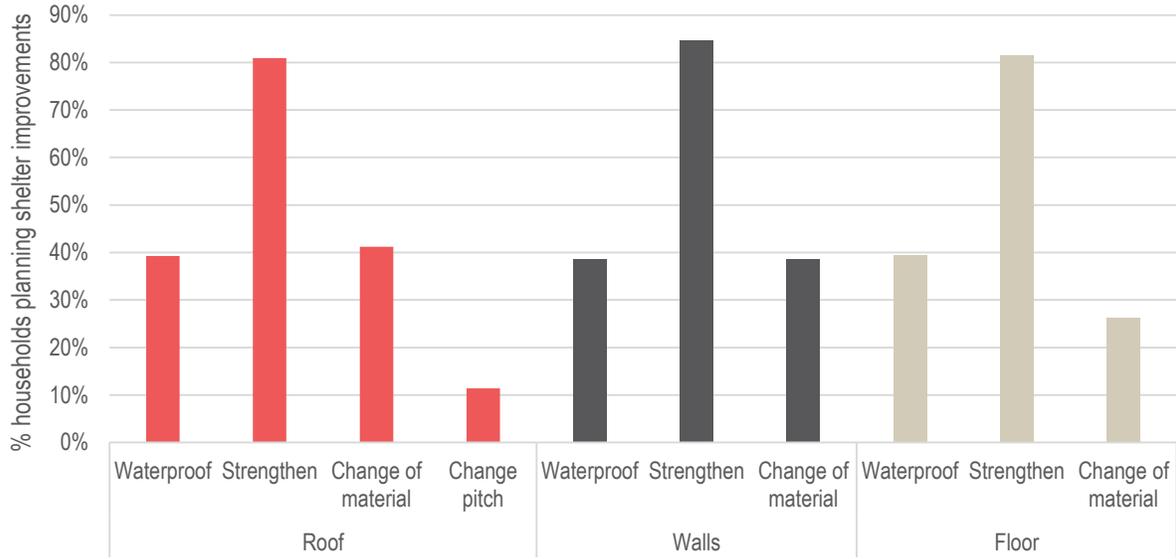
Among assessed households indicating that they were planning shelter improvements, walls were the most commonly cited shelter component for improvement at 84%, followed by floor at 80% and roof at 74%. Regarding the number of components households were planning improvements for, the vast majority, 74%, reported that they planned improvements on all three shelter components (roof, walls, and floor) with the remaining reporting plans to improve only one or two components, 7% and 16% respectively.

Figure 21: Households planning shelter improvements by component



For all three shelter components, the majority of households reported that they planned to make improvements in order to improve the general strength of the component, with 85% reporting this intention for walls and 81% for roof and floors. Meanwhile, 41% of households reported an intention to change the material of their roof, compared to 39% of households planning to make improvements to walls and 26% for floors. The proportion of households planning to make selected shelter components more waterproof was equivalent for roof, walls and floor at 39%.

Figure 22: Planned shelter improvements by component

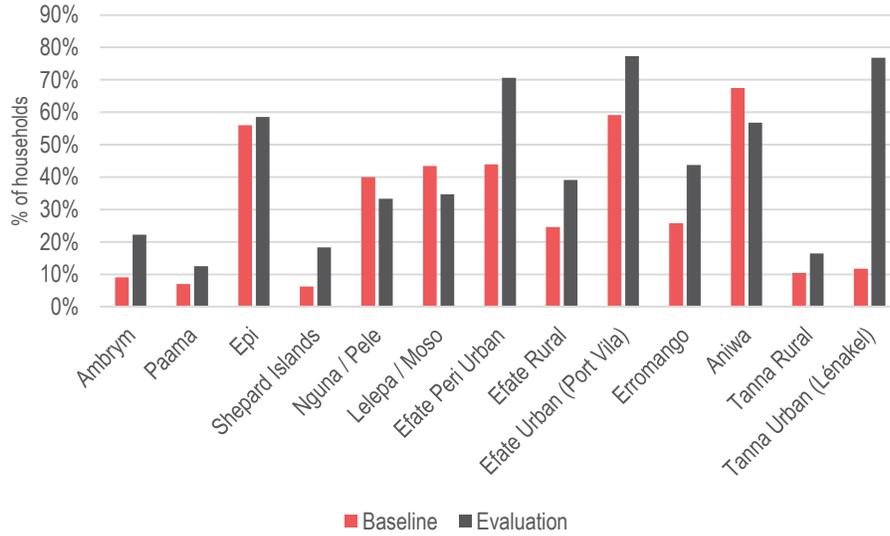


Access to Electricity

Considerable changes in levels of access to electricity at a household level can be observed between the baseline and evaluation. Overall, access to electricity increased in almost all sample sites, with the exception of Aniwa, Nnguna and Pele, Lelepa and Moso where this trend was inversed. The reduction in access to electricity in shelters across these sites can be explained by the prevalent practice of relying on solar panels which may have fallen into disrepair as a result of a reduction in households' ability to pay repair costs given that livelihoods have not been restored to pre-crisis levels. Furthermore, for households who relied on generators either at the community or household level, an inability to access sufficient quantities of fuel could have contributed to a decrease in access to electricity. Notably, access to electricity increased most sharply in urban and peri-urban areas, namely Tanna Urban, Efate Peri Urban and Efate Urban⁴.

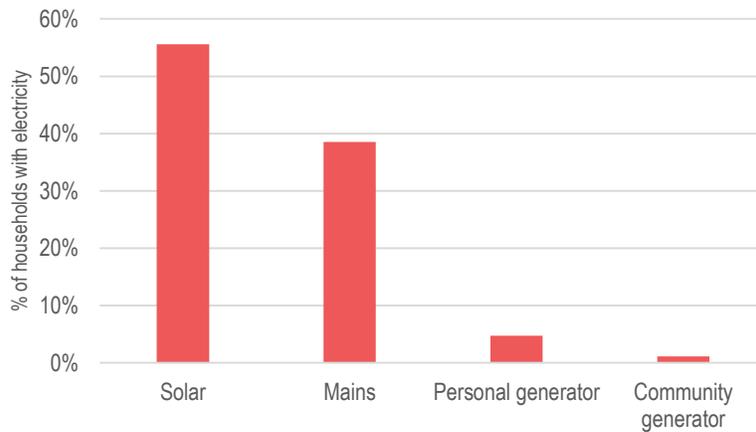
⁴ It should be noted that the mains electricity provider UNELCO was not functional in Tanna Urban at the time of the baseline data collection and has since restored services to pre-crisis levels, which explains the sharp rise in access to electricity from 12% in the baseline to 77% in the evaluation.

Figure 23: Households reporting functional electricity at their shelter



With regards to electricity source, the majority of households with functional electricity for their shelter at the time of assessment reported solar energy as their primary source of electricity at 56%, followed by mains at 39%, personal generator at 5% and lastly community generator at 1%. Primary source of electricity was found to vary considerably between urban and rural areas. Households in urban and peri-urban locations were most likely to report their primary source of electricity as being mains, 88% and 79% of households respectively. On the other hand, in rural locations the vast majority of households (88%) reported solar panels as their primary source of electricity at their shelter.

Figure 24: Reported primary source of electricity

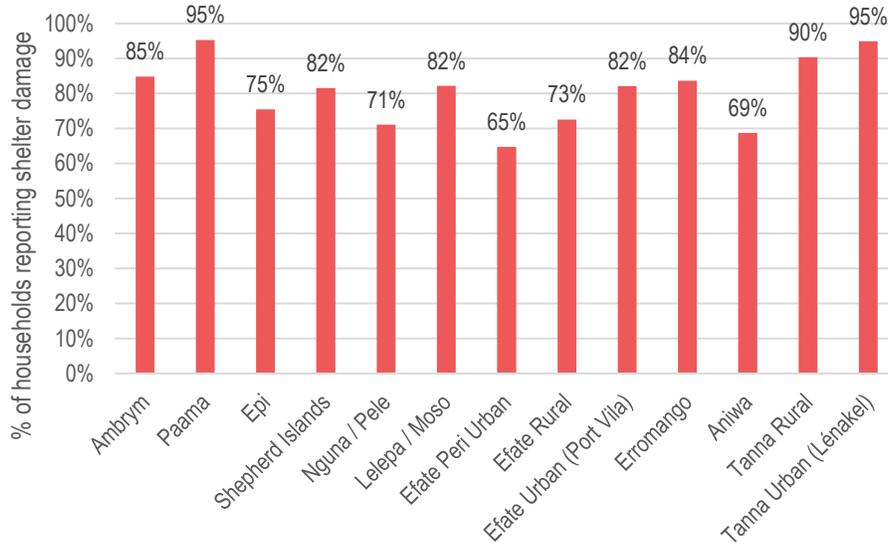


REMAINING RECOVERY NEEDS

Despite the relatively high proportion of households (68%) which reported receipt of assistance, a vast majority at 81% households reported that they still had remaining needs to facilitate full shelter recovery. The proportion of households reporting remaining recovery needs ranged from 65% of households in Efate Peri Urban to 95% in Paama and Tanna

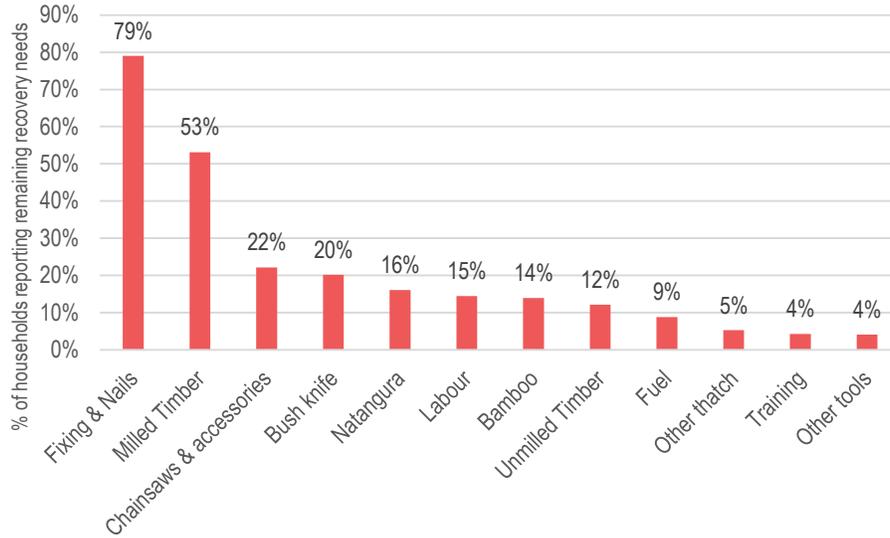
Urban. It is critical that shelter recovery needs are explored through the shelter recovery and preparedness planning process to ensure the preparedness of households for any potential crises, especially during the upcoming Pacific cyclone season from November 1, 2015 to April 30, 2016.

Figure 25: Households reporting remaining recovery needs



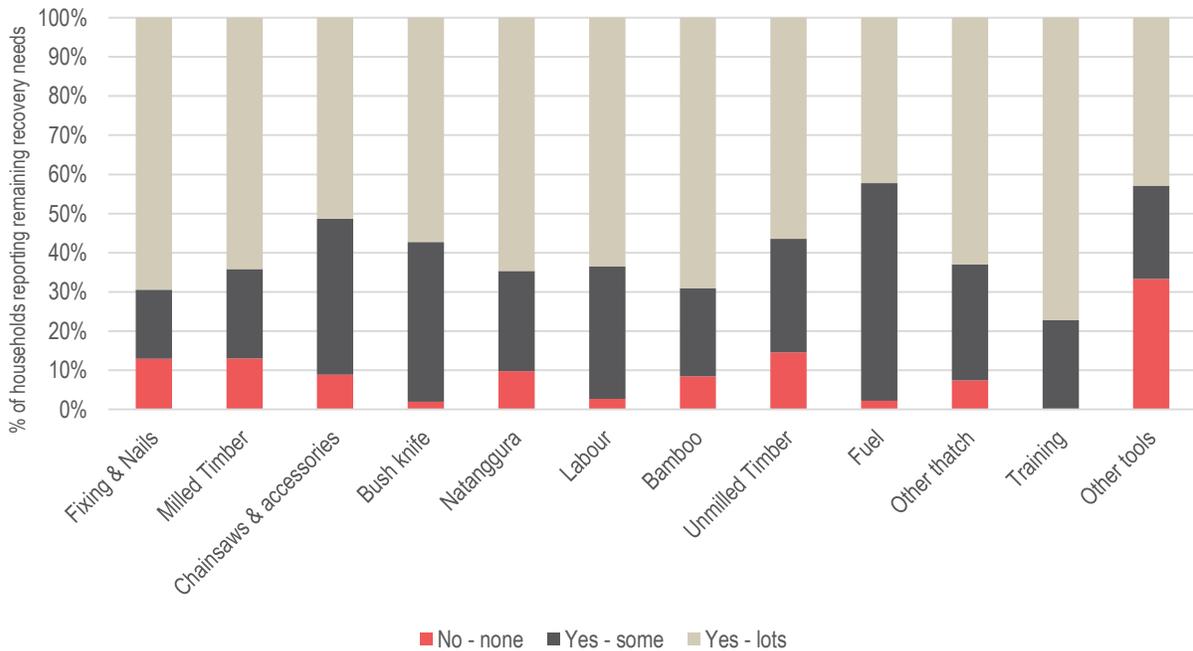
79% of households reported that they required fixings and nails. This high proportion directly correlates with the extremely small proportion of households, 4%, that reported receiving this form of assistance during the HAP implementation period. Building materials and chainsaws were also reported by significant proportions of households as remaining recovery needs, 53% and 22% respectively. As with nails and fixings, only a relatively small proportion of households reported that they had received the aforementioned items as part of the humanitarian response, 35% and 26% respectively (see *Shelter Assistance*). This suggests that while the HAP response was adequate in securing the immediate shelter needs of households, significant gaps have been left with regards to full shelter recovery needs. A Government of Vanuatu decision during the HAP planning process resulted in a reduction in the HAP timeline and thus a focus on activities under objective one. As such, the assistance modalities employed by shelter cluster partners was affected with the majority focusing on providing emergency assistance rather than longer term support. While further recovery assistance will undoubtedly be implemented through a Government of Vanuatu led recovery framework, the prevailing situation should be taken fully into account during the recovery and preparedness planning process.

Figure 26: Reported recovery needs



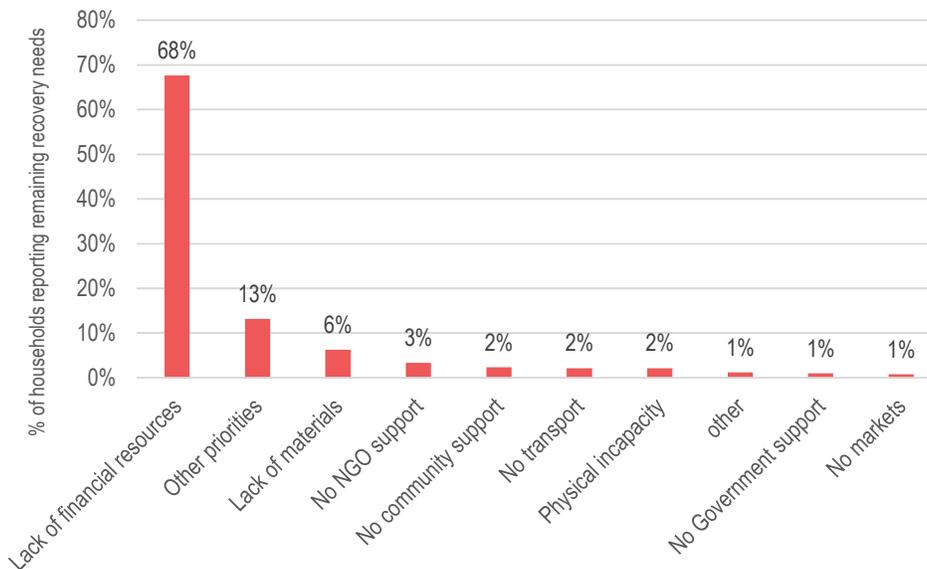
There was reasonably high availability reported for remaining recovery needs. The majority of households indicated that their specified remaining recovery needs would be available in abundance were there no barriers to access, with the exception of fuel and other tools with 42% and 43% consecutively. In terms of building materials, fixing and nails and bamboo were reported to be the most readily available, with 69% of households indicating high availability, while un-milled timber was the least readily available building material, reported by 56% of households.

Figure 27: Availability of reported recovery needs



Despite this widespread availability of the items reported to be remaining shelter recovery needs, a lack of financial resources was identified as an access barrier by the vast majority of households (68%). Only 1% of households reported a lack of access to markets, corroborating the finding that the majority of remaining needs specified were reported to be readily available in affected areas. Interestingly, 13% of households reporting remaining recovery needs indicated that other priorities were the primary barrier to accessing recovery needs. This may be attributable to households that are now focused on restoring livelihoods to pre-crisis levels, having already completed the most urgent and immediate repairs to their shelter.

Figure 28: Reported barriers to accessing recovery needs



PREPAREDNESS

Community Level Preparedness Measures

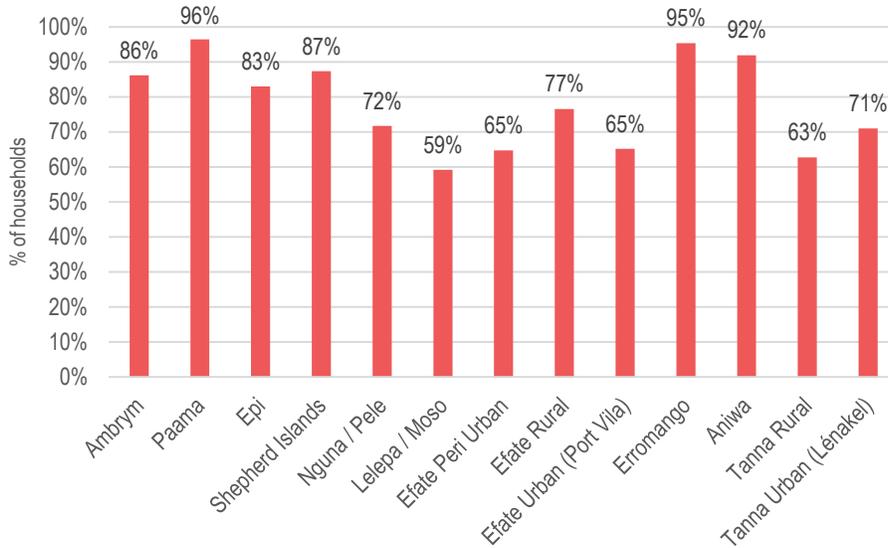
78% of households across the affected area reported that they had knowledge of and access to at least one evacuation/ storm shelter in their community.

However, there was some variations across the sites. Notably, almost all households in Paama and Erromango reported having access to at least one evacuation/ storm shelter, 96% and 95% of households respectively. Conversely, a significantly less number of households in Lelepa/ Moso reported this level of access, 59% of households. Additionally, the highest level of knowledge of and access to evacuation/ storm shelters was identified in rural locations by 81% of households. Households in urban locations may have less knowledge of community level evacuation/ storm shelters as a result of their shelters predominately being more 'permanent' structures rather than traditional or semi-permanent/ makeshift ones, which is more likely to be case in rural areas.

As the third objective of the Shelter Response Plan in the HAP focuses on investment in safer community buildings to ensure increased access for households throughout the affected area, a focus should be placed on assessing the resilience of existing evacuation/ storm shelter solutions utilised by households in the affected area. Secondly, sample sites where relatively low proportions of households have knowledge of, and access to, evacuation/ storm shelters in their respective communities' could be targeted under recovery and preparedness programming. Third, access barriers

in sample sites where most households reported knowledge of and access to evacuation/ storm shelters should be explored further.

Figure 29: Households with knowledge of, and access to, evacuation / storm shelter(s)

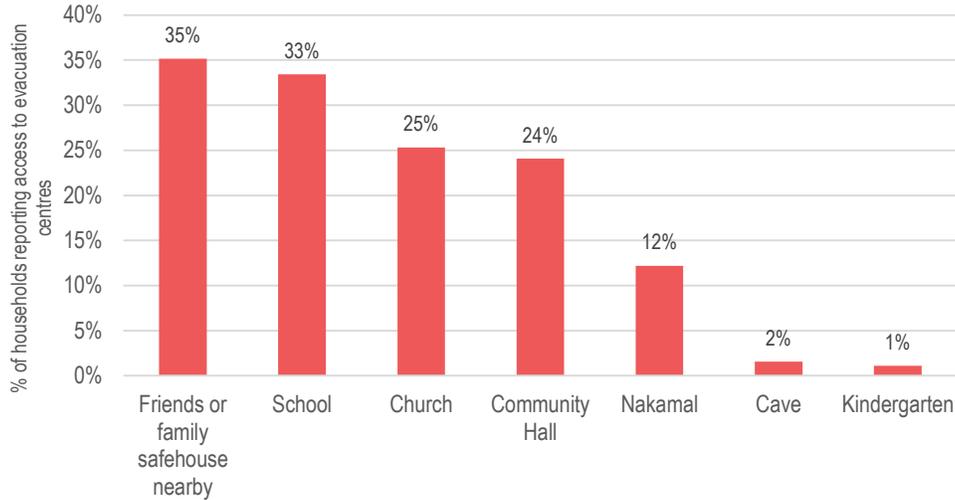


The most commonly reported evacuation / storm shelters which households had knowledge of, and access to, were safe/strong houses owned by friends or family, schools, and churches, at 35%, 33%, and 25% of households respectively. The prevalence of safe/ strong houses owned by friends or family being identified as evacuation/ storm shelter presents an interesting opportunity for ‘Build Back Safer’ programming. These shelters could be prioritised for ‘Build Back Safer’ interventions, thus meeting the needs of the normally resident households and those persons who would seek refuge in the shelter in the case of an emergency.

A smaller proportion of households reported knowledge of and access to traditional forms of evacuation/ storm shelters, such as cave and nakamals, at 2% and 14% of households respectively.

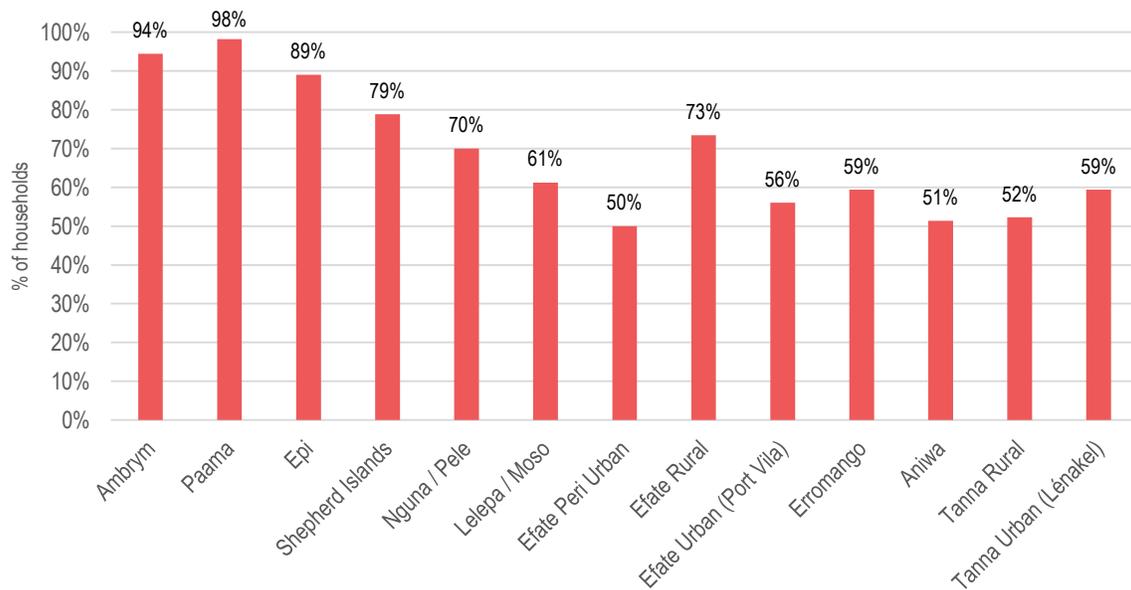
Types of evacuation/ storm shelters were found to be significantly more diverse in rural areas than in urban or peri-urban locations. Additionally, a higher knowledge of, and access to, traditional evacuation/ storm shelters can be observed; such as caves and nakamals (traditional meeting places) which were reported by 15% and 2% of households in rural locations respectively. This is in stark contrast to the 0% of households which reported this in peri-urban locations.

Figure 30: Types of evacuation / storm shelter(s) households have knowledge of, and access to



Strengthening efforts at the national, regional, and community level to stockpile contingency items can arguably be an effective strategy for contributing towards a rapid and effective response to future natural disasters. To gauge levels of preparedness at the community level across the affected area, respondents were asked to indicate if they had knowledge of and access to community managed contingency stocks. The responses varied considerably between sample sites. In Efate Peri-Urban for example, only 50% households identified that this community preparedness strategy was in place, compared with almost all, 98%, of households in Paama. While rural locations contained the largest proportion of households reporting knowledge of and access to community managed contingency stocks, 58% and 50% of households in urban and peri-urban areas respectively reported the same. The disparity in knowledge of and access to community managed contingency stocks across the affected area should be taken into account during the recovery and preparedness planning process.

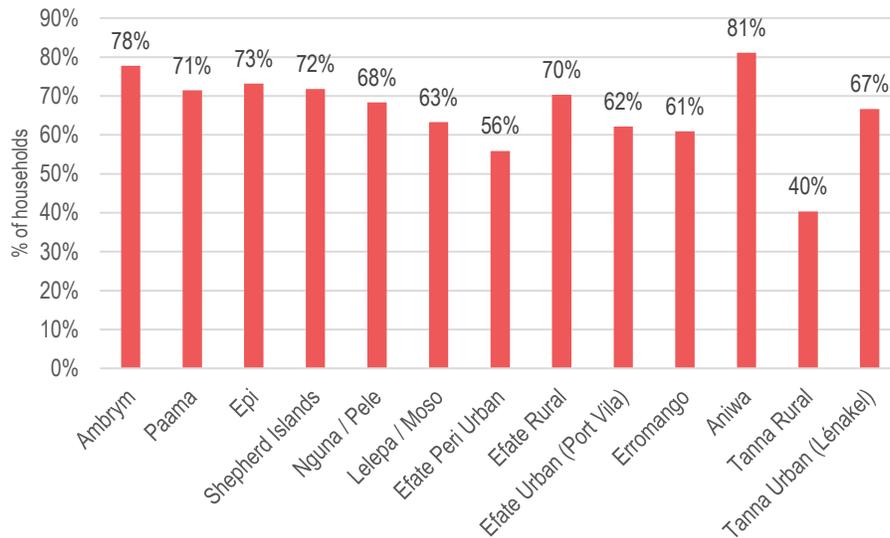
Figure 31: Household reporting knowledge of, and access to, community managed contingency stocks



Household Level Preparedness Measures

The majority of households, 66%, were identified as having taken preparedness measures to ensure that their shelter was safer in the event of another crisis, indicating a widespread awareness of types of changes which could potentially render a shelter safer. A marginally larger proportion of households in rural locations had taken preparedness measures compared to those in urban or peri-urban locations, 68% of households compared to 64% and 56% respectively.

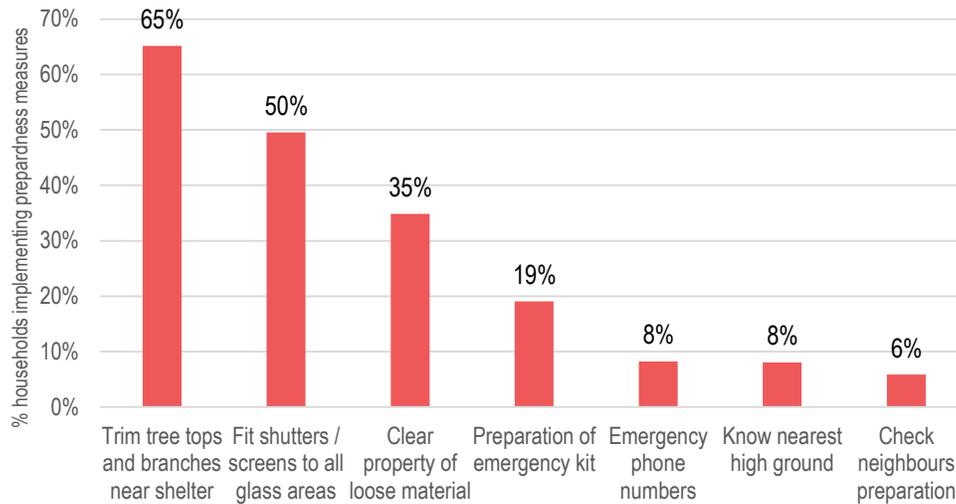
Figure 32: Households reporting implementation of preparedness measures



There was some degree of variation in the implementation of household level preparedness measures across samples sites, ranging from Aniwa with 81% of households reporting that they had taken key preparedness measures to Tanna Rural where only 40% of households had done the same. Trimming tree tops and branches near shelters was the most commonly reported household level preparedness measure implemented, by 65% of households. Other common preparedness measures include fitting shutters or screens to all glass areas, cleaning property of loose material, and the preparation of emergency kits, each at 50%, 35%, and 19% of households respectively.

As a result of the high prevalence of household level preparedness across the majority of the affected area, the shelter preparedness planning process should take into account, and build on, successful preparedness measures implemented at the household level.

Figure 33: Reported preparedness measure taken by households



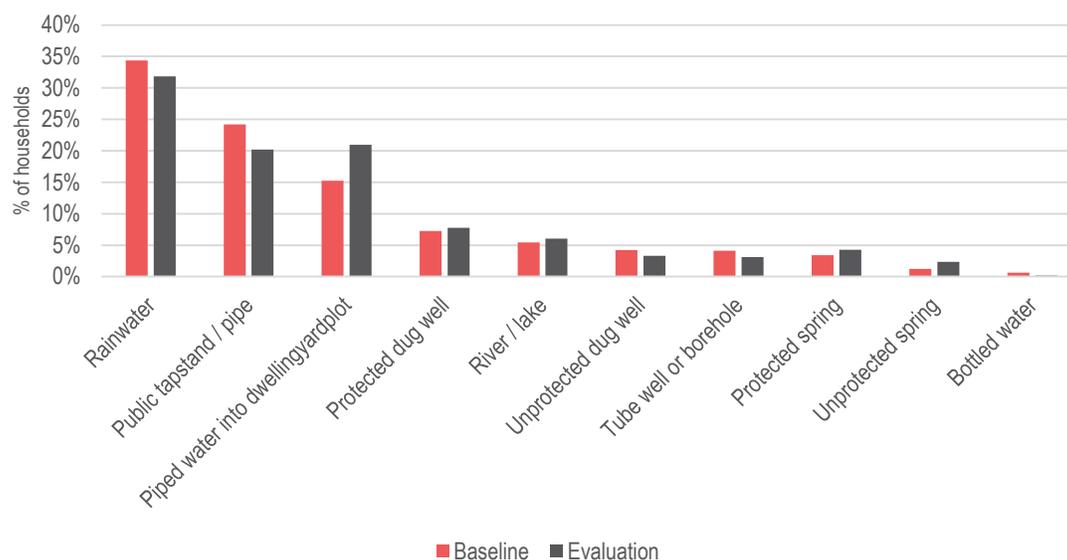
WATER AND SANITATION

Water

There have not been significant changes in the primary source of drinking water reported by households between the baseline and evaluation. Rainwater collection remained the most commonly reported primary source of drinking water, with 34% of households reporting this compared to 32% in the baseline. This is followed by 24% reporting public tap stands or piped water compared to 21% in the baseline. Reliance upon rainwater catchment systems has increased by 3% since the baseline. This could be a result of households having been able to recover damaged rainwater harvesting systems since the baseline, or may be a result of interventions by humanitarian actors.

Despite the slight increase in rainwater as a primary source of drinking water, the aim of the baseline report, endorsed by both WASH and shelter cluster partners, was to explore joint WASH and shelter programming to provide roofing materials while restoring rainwater catchment systems to pre-crisis levels. As only a 2% increase in the use of rainwater catchment systems as a primary source of drinking water was identified during the evaluation, the delivery modality of this type of intervention could be reviewed.

Figure 34: Primary sources of drinking water



Significant disparities can be observed between most frequently reported primary sources of drinking water according to land usage. Notably, the top ranked primary drinking water source is different for urban, peri-urban and rural settings, with public tap stand or pipe at 45% in urban areas, piped water into dwelling at 32% in peri-urban and rainwater at 39% in rural locations. In addition to being the top-ranked primary drinking water source in rural locations, rainwater was the second most commonly cited drinking water source for both urban and peri-urban households, highlighting the widespread reliance on rainwater catchment systems throughout the affected area.

This can be attributed, in part, to the lack of fresh surface water or groundwater across Vanuatu's low-lying islands, particularly during the El Niño period which can cause droughts leading the main supply to break down, dry up or become saline.⁵ Households in rural areas are more likely to rely on rainwater collection for drinking water than their urban or peri-urban counterparts due to reduced access to public water networks and piping systems.

Table 2: Primary source of drinking water by land usage

| Land usage | Rank | Primary drinking water source | % of households |
|------------|------|-------------------------------------|-----------------|
| Urban | 1st | Public tap stand / pipe | 45% |
| | 2nd | Rainwater | 18% |
| | 3rd | Piped water into dwelling/yard/plot | 13% |
| Peri-Urban | 1st | Piped water into dwelling/yard/plot | 32% |
| | 2nd | Rainwater | 22% |
| | 3rd | Public tap stand / pipe | 21% |
| Rural | 1st | Rainwater | 39% |
| | 2nd | Public tap stand / pipe | 20% |
| | 3rd | Piped water into dwelling/yard/plot | 14% |

⁵ SOPAC, Pacific Islands Applied Geoscience Commission <<http://www.pacificwater.org/pages.cfm/water-services/rainwater-harvesting/>>, [Last accessed September 2015].

When disaggregating by island, there is a great deal of variability in reported primary drinking water source. Efate had the largest proportion of households relying on a public tap stands or pipes as their main source of drinking water, attributable to a more developed and expansive public water system than other islands in Vanuatu. More specifically, the urban area of Efate had by far the highest proportion of respondents citing this source at 64%, compared to 21% in peri-urban areas and 33% in rural areas.

Meanwhile, rainwater collection was considerably more heavily relied upon in Aniwa than any other island, with the vast majority of households reporting this as the primary source of drinking water at 84%, as opposed to a mere 3% of residents in Port Vila. Over a third of households on Tanna rely on rivers or lakes for their main supply of drinking water. However the proportion of households citing this as a primary drinking water source was significantly lower across all other islands, providing further evidence to support that fresh groundwater may be in short supply in these areas which leads people to rely on rainwater catchment systems.

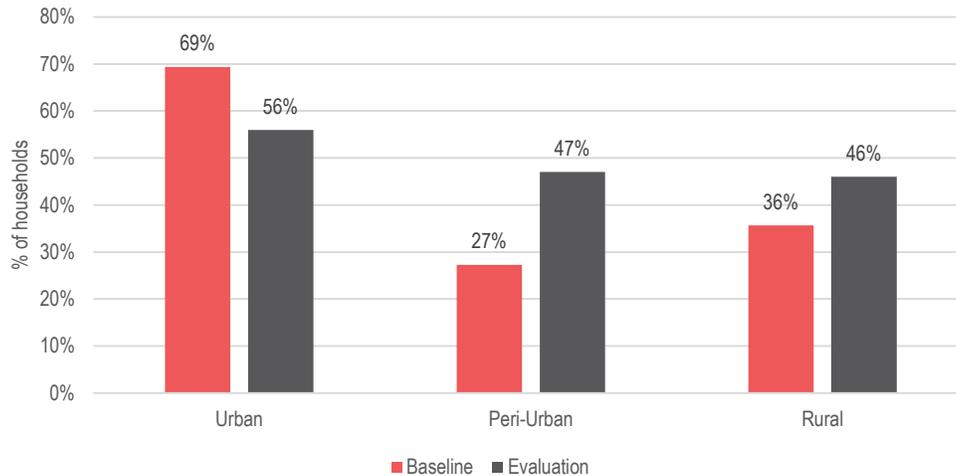
Figure 35: Primary sources of drinking water by sample site

| | Piped water into dwelling | Protected dug well | Protected spring | Public taps and/pipe | Rainwater | River / lake | Tube well / borehole | Unprotected dug well | Other |
|-------------------------|---------------------------|--------------------|------------------|----------------------|-----------|--------------|----------------------|----------------------|-------|
| Ambrym | 3% | 13% | 1% | 22% | 49% | 0% | 3% | 10% | 0% |
| Paama | 4% | 13% | 0% | 21% | 52% | 0% | 0% | 11% | 0% |
| Epi | 11% | 28% | 13% | 21% | 13% | 1% | 6% | 5% | 1% |
| Shepherd Islands | 7% | 13% | 6% | 3% | 62% | 0% | 3% | 6% | 1% |
| Nguna / Pele | 18% | 2% | 5% | 12% | 57% | 0% | 3% | 0% | 3% |
| Lelepa / Moso | 18% | 4% | 0% | 8% | 55% | 4% | 0% | 4% | 6% |
| Efate Peri Urban | 32% | 4% | 6% | 21% | 22% | 9% | 0% | 4% | 1% |
| Efate Rural | 27% | 3% | 2% | 33% | 14% | 6% | 8% | 5% | 3% |
| Efate Urban (Port Vila) | 17% | 0% | 0% | 64% | 3% | 8% | 5% | 5% | 0% |
| Erromango | 25% | 2% | 0% | 50% | 20% | 0% | 3% | 0% | 0% |
| Aniwa | 14% | 0% | 0% | 3% | 84% | 0% | 0% | 0% | 0% |
| Tanna Rural | 16% | 0% | 3% | 19% | 18% | 37% | 1% | 4% | 0% |
| Tanna Urban (Lénakel) | 9% | 4% | 1% | 26% | 32% | 3% | 17% | 0% | 7% |

Sanitation

According to SPHERE's minimum Water Sanitation and Hygiene (WASH) standards, a maximum of 20 people should share one latrine, with private family facilities representing the preferred option where possible⁶. To gauge the level of WASH standards in Vanuatu, respondents were asked to report if their household shared their latrine with additional households. A comparison of baseline and evaluation findings shows that while the proportion of households sharing a latrine in urban areas has reduced from 69% to 56%, in peri-urban and rural locations it has since increased. The largest rise in shared latrine usage can be observed for peri-urban areas with a total increase of 20%. Households sharing a latrine were most commonly found to share with two to three additional households in urban, peri-urban and rural areas with a minority of households sharing with ten or more other households.

Figure 36: Households reporting sharing their primary latrine with more than one household



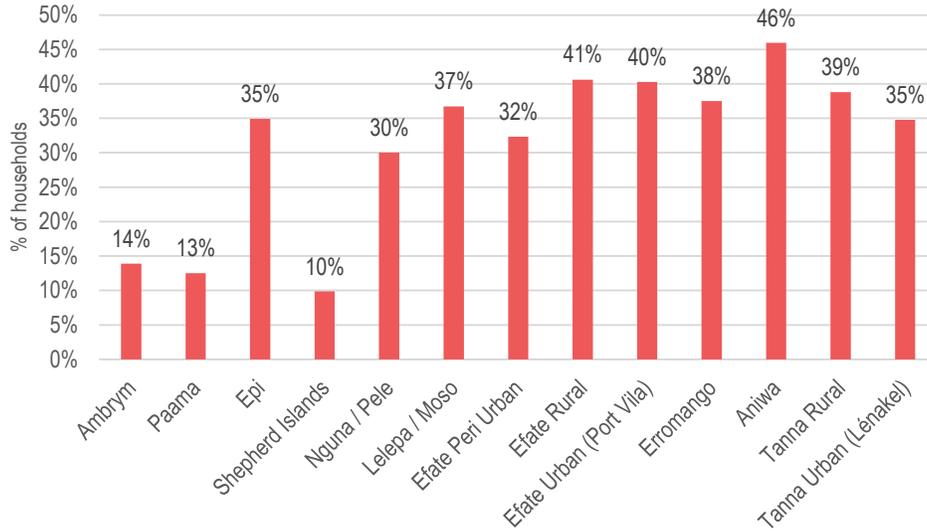
The majority of households assessed were found to have non-improved latrines, at 69%⁷, a proportion which has increased from the 53% of households identified as relying on this latrine type during the baseline. This suggests that pre-existing latrine facilities have either been damaged or put under increased demand and thus have resulted in more households relying on non-improved types of these facilities.

When disaggregating by geographic location, Aniwa was found to have the largest proportion of households with improved latrine types, at 46%, while the Shepherd Islands had the smallest at 10% of assessed households, followed by Paama with 13%. These results indicate that despite guidelines on suitable latrine construction practices being available to the population for a number of years, there is still significant scope for WASH messaging to be reinforced throughout the affected area to improve access to sanitary latrine facilities.

⁶ SPHERE, <<http://www.spherehandbook.org/en/excreta-disposal-standard-2-appropriate-and-adequate-toilet-facilities/>>, [Last accessed September 2015].

⁷ 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.

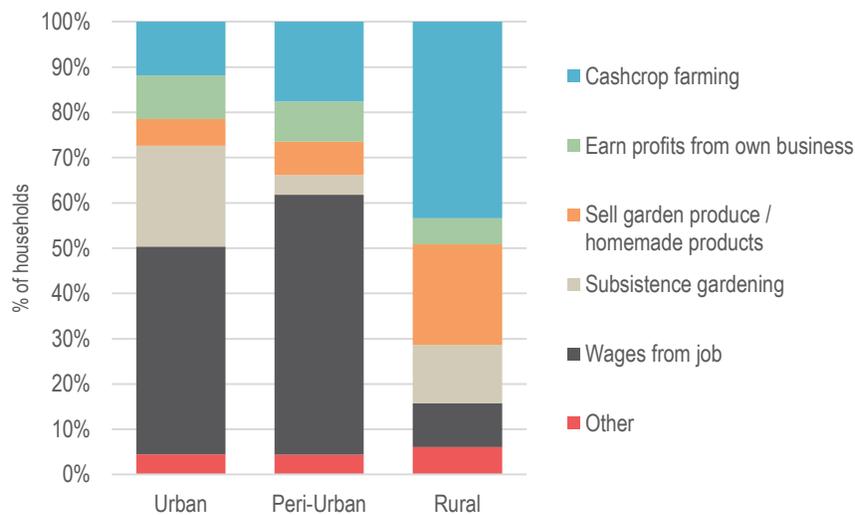
Figure 37: Households with access to improved latrines



LIVELIHOODS

Agriculture accounted for 70% of all pre-crisis primary livelihoods reported by households, with 36% reporting engagement in cash crop farming, 18% selling garden produce, 14% relying on subsistence gardening and 2% owning a farm. Urban and peri-urban locations, due to their status as, or proximity to, main economic hubs had a higher proportion of households reporting wages from a job as their primary household source of income, 46% and 57% respectively. In rural areas, the majority of households reported that they were primarily engaged in agricultural livelihoods, with households most commonly reporting farming cash crops or selling garden produce as their primary pre-crisis livelihoods, 43% and 22% respectively.

Figure 38: Primary source of household income pre-crisis⁸

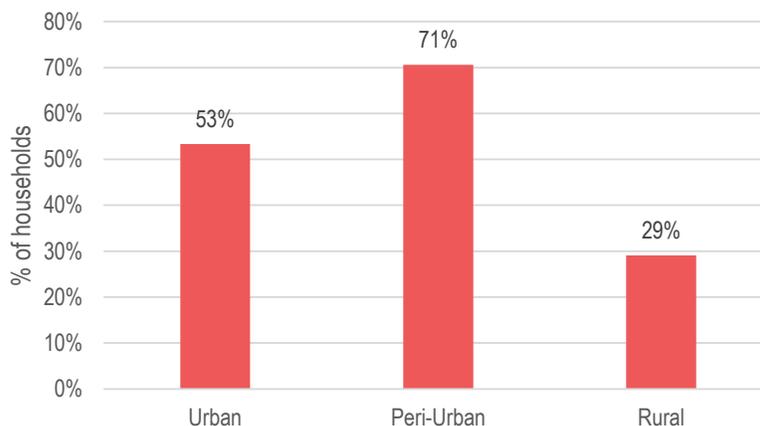


⁸ 'Other' includes: government payments, earning from a cooperative, farm ownership, remittances, and receipt of rent

As a result of the predominately agricultural nature of livelihoods in Vanuatu, Cyclone Pam had a devastating impact on livelihoods throughout the affected area resulting in 64% households not having restored their primary livelihood to pre-crisis levels.

Due to their heavier reliance upon land for primary household income source, rural areas are shown to have the lowest level of livelihood recovery, with only 29% of households reporting that they had recovered their livelihoods to pre-crisis levels. This is compared to the majority of households in urban and peri-urban locations, 53% and 71% respectively, where households most commonly rely on wages from a job as the primary source of household income.

Figure 39: Households reporting primary livelihood restored to pre-crisis levels



HEALTH

Cyclone Pam exacerbated Vanuatu’s core challenges with water resources and associated environmental issues, including poor drainage and waste management, leaving the population at greater risk of disease outbreak and health problems. Indeed, half of the households in the affected area reported that at least one member of their household had experienced a health condition or illness in the aftermath of Cyclone Pam. In the months following the cyclone, The World Health Organisation (WHO) reported an increase in the number of cases of acute diarrhoea in children and a growing number of respiratory illnesses⁹. Water-related diseases like scabies, skin diseases and malaria represent the three most common health issues in Vanuatu¹⁰, and this is reflected in the breakdown of health conditions reported by affected households.

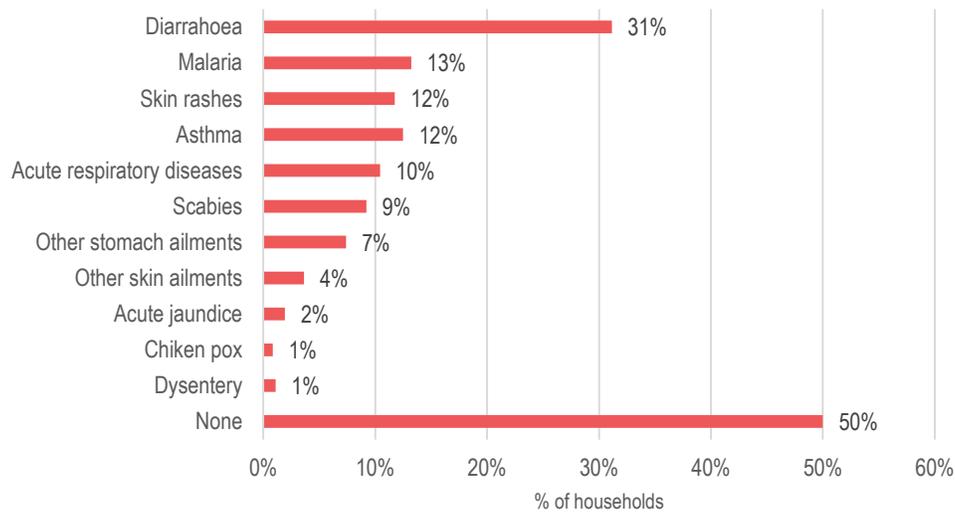
Diarrhoea was the most commonly reported health issue by 31% of households, followed by malaria and skin rashes, at 13% and 12% respectively. A very similar proportion of households, 32%, reported diarrhoea in the baseline assessment. However, there were lower instances of malaria, with only 5% reporting this health condition, indicating an increase of 8 percentage points in this disease since the baseline. This increase could likely be due to a deterioration in sanitation and wastewater management creating favourable breeding sites for malaria mosquitos.

Considerable disparities in reported health conditions can be observed between sample sites. Erromango has the largest proportion of households reporting at least one health condition at 70%, while Lelepa / Moso had the lowest proportion of households reporting health conditions at 39%. The proportion of households reporting cases of malaria ranged from 3% on Aniwa to 29% on Paama, while diarrhoea was most commonly reported on the Shepherd Islands.

⁹ WHO, Western Pacific Region, <<http://www.wpro.who.int/southpacific/mediacentre/releases/2015/cyclone-pam-healthchallenges/en/>>, [Last checked September 2015].

¹⁰ SOPAC, <http://www.pacificwater.org/pages.cfm/country-information/vanuatu.html>, [Last checked September 2015].

Figure 40: Reported health conditions post-crisis



PRIORITY NEEDS

The most commonly reported priority need for households was found to be drinking water (27%) followed by food (21%) and shelter/housing (16%). There was no change in the ranking of shelter/ housing as a priority need between the evaluation and baseline results which suggests that while many households have met their emergency shelter needs, needs still remain to restore sheltering conditions to pre-crisis levels. Meanwhile, there was a considerable decrease in reported priority need for essential NFIs, indicating that the provision of assistance is likely to have fulfilled the urgency of this demand for assessed households.

The proportion of households reporting drinking water as a first priority need has increased by 9 percentage points to 27% since the baseline. Cyclone Pam destroyed an estimated 68% of rainwater harvesting catchments and left 70% of wells contaminated in Vanuatu which greatly affected households' access to potable water¹¹. Furthermore, the response rate is likely to have been influenced by the ongoing dry season in Vanuatu (May-October) which has caused Vanuatu, among other Pacific Island countries, to experience irregular and decreased levels of rainfall¹².

The proportion of households reporting food as either a first or second priority need has increased significantly since the baseline. The proportion of households reporting this need has increased by 13 percentage points to 21%. Meanwhile, the proportion of households reporting food to be a second priority need has increased by 15 percentage points to 31%. The significant increase in the reported need for food can be explained by the end of emergency distributions of rice during the latter half of the HAP as a result of which affected households no longer have access to emergency stock of food. Until gardens have been restored to their pre-crisis levels, with some crops taking many months to be ready for harvest, it can be expected that the proportion of households reporting food as a priority need will continue to increase.

Reported priority needs varied considerably according to land usage. Shelter/ housing was most commonly cited as a first priority need by households in urban settings, 19%, followed by rural and peri-urban locations at 16%, and 9% respectively. Considerable proportions of households across all three settings were identified as having significant difficulty in accessing drinking water. The need for drinking water was most acute in urban locations with a third of

¹¹ IFRC, Relief Web, <<http://reliefweb.int/report/vanuatu/why-water-precious-after-cyclone-pam>>, June 2015.

¹² Government of Vanuatu, <<http://reliefweb.int/report/vanuatu/2015-el-ni-o-now-well-established-prepare-drought>>, August 2015

households, 33%, reporting drinking water as their first priority need. One explanatory factor to support this finding is that aquifers in Port Vila are reportedly coming under increasing pressure from housing, agriculture and other developments¹³.

Food was more commonly cited as a first priority need by households in peri-urban and rural locations, 25% and 22% of households respectively, than in urban settings, 16% of households. This may be attributed to lower levels of market access in rural areas, and a higher reliance on subsistence farming for food.

Table 3: Reported priority needs

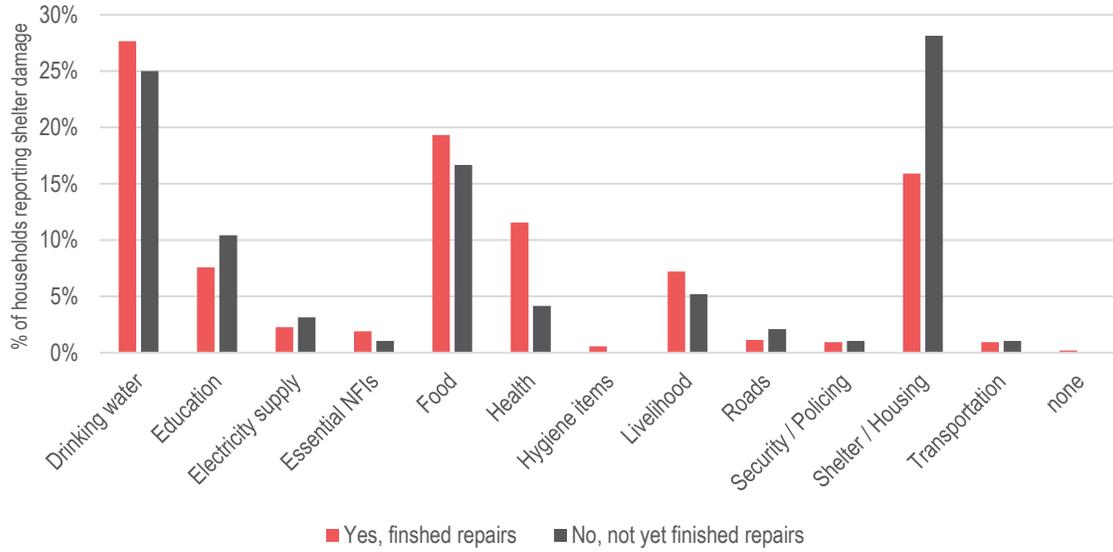
| | | First Priority Need | | Second Priority Need | | Third Priority Need | |
|--------------------|------------|---------------------|-------|----------------------|-------|---------------------|-------|
| | | % households | Trend | % households | Trend | % households | Trend |
| Domestic water | Evaluation | 3% | ↑ | 3% | ↑ | 9% | ↑ |
| | Baseline | 0% | | 1% | | 1% | |
| Drinking water | Evaluation | 27% | ↑ | 13% | ↑ | 10% | ↓ |
| | Baseline | 18% | | 11% | | 11% | |
| Education | Evaluation | 9% | ↑ | 9% | ↑ | 10% | ↑ |
| | Baseline | 4% | | 5% | | 4% | |
| Electricity supply | Evaluation | 2% | ↓ | 8% | ↑ | 8% | ↑ |
| | Baseline | 3% | | 3% | | 5% | |
| Employment | Evaluation | 8% | ↑ | 7% | ↑ | 9% | ↑ |
| | Baseline | 1% | | 2% | | 2% | |
| Essential NFIs | Evaluation | 1% | ↓ | 5% | ↓ | 3% | ↓ |
| | Baseline | 38% | | 40% | | 32% | |
| Food | Evaluation | 21% | ↑ | 31% | ↑ | 14% | → |
| | Baseline | 8% | | 16% | | 14% | |
| Health | Evaluation | 10% | ↑ | 7% | → | 13% | → |
| | Baseline | 7% | | 7% | | 13% | |
| Hygiene items | Evaluation | 1% | ↓ | 2% | ↓ | 3% | ↓ |
| | Baseline | 2% | | 3% | | 7% | |
| Roads | Evaluation | 1% | ↑ | 1% | → | 1% | → |
| | Baseline | 0% | | 1% | | 1% | |
| Security/Policing | Evaluation | 1% | ↑ | 1% | ↑ | 2% | ↑ |
| | Baseline | 0% | | 0% | | 0% | |
| Shelter/Housing | Evaluation | 16% | → | 8% | → | 10% | ↑ |
| | Baseline | 16% | | 8% | | 6% | |
| Transportation | Evaluation | 0% | → | 1% | → | 2% | ↓ |
| | Baseline | 0% | | 1% | | 1% | |

When findings are disaggregated further, results show that households that had not yet completed substantial shelter repairs were significantly more likely to report shelter / housing as their first priority need (28%) compared to those that have already completed shelter repairs (16%). Additionally, households which had completed substantial repairs or rebuilding work on their shelter by the time of assessment were slightly more likely to report livelihoods as a first priority

¹³ SOPAC, Pacific Islands Applied Geoscience Commission <http://www.pacificwater.org/pages.cfm/country-information/vanuatu.html>, [Last accessed September 2015].

need than those that had not, 7% compared to 5%. This indicates that this group of households is more likely to prioritise restarting livelihoods than restoring their shelter to pre-crisis levels.

Figure 41: First priority need vs. recovery



CONCLUSION

This evaluation, implemented following the close of the Humanitarian Action Plan (HAP) which was put in place in the aftermath of category 5 tropical Cyclone Pam, was designed to inform (1) an evaluation of the effectiveness of the shelter operational response detailed in the HAP; and (2) identify barriers to recovery. Specifically, the evaluation sought to monitor the sheltering condition for families affected by Cyclone Pam since the baseline assessment, evaluate the utility of various shelter interventions provided by Shelter Cluster partners to enable families and communities to recover, determine if emergency shelter residual gaps and recovery needs exist and if there are barriers to access, and inform future preparedness and contingency planning with respect to risk reduction, prepositioning of materials, and identification of vulnerable groups and sites.

Overall, displacement remains a relatively significant post-Cyclone issue. While the proportion of households reporting that they were living in a new location had decreased slightly by 3 percentage points to 14% since the baseline, other forms of displacement have actually increased significantly. The proportion of households reporting that they are hosting at least one displaced family member or friend in their shelter increased by 6 percentage points to 35% of households since the baseline. The return needs of displaced persons, and the needs of hosting households to relieve any potential strain, will need to be explored as the response moves into the preparedness planning phase.

The proportion of households which reported receipt of assistance had increased by 14 percentage points to 68% from the baseline. Of this proportion, the vast majority i.e. 82% reported that they had received tarpaulins. The high proportion of households which received tarpaulins is a reflection of a directive from the Government of Vanuatu that Shelter Cluster partners focus on objective one, rather than objectives two or three. The timeliness of assistance delivery was identified as being a particular issue for tarpaulins, which were designed to constitute emergency assistance. 36% of households reported that they had received this form of assistance after they had completed repairs and or rebuilding on their shelter. As such, there is a clear need for an exploration into the procurement delays on the part of the NDMO, Logistics Cluster, Shelter Cluster, and Housing Sector Working Group from a preparedness perspective.

Assessment data has also called into question the appropriateness of tents as a shelter assistance modality in the context of Vanuatu. While not officially endorsed as an assistance modality by the Shelter Cluster, tents were received by a number of affected households, and 43% of those in receipt reported that they had sold them prior to use. This is compared to other forms of assistance, such as tarpaulins, where in instances of non-use it was most common for households to have stored them for future use, rather than to sell for profit.

A number of relatively widespread household preparedness strategies were identified as having been employed throughout the affected area. In addition to the aforementioned stockpiling of received assistance, 60% of households reported that they had made changes to the way they built their shelter in the aftermath of Cyclone Pam. As the response moves into the recovery and preparedness planning phase, there is a clear opportunity to integrate and support existing household preparedness strategies with those developed at the national level.

Evidence of the implementation of safer building practices was identified as being more prevalent in locations which had suffered higher levels of damage, a situation which can be explained by the concentration of humanitarian assistance, and thus build back safer messaging, in more severely damaged locations. This therefore presents an opportunity to reinforce build back safer messaging across the affected area.

With 78% of households reporting knowledge of, and access to at least one type of evacuation/ storm shelter at the community level, there are three clear areas of intervention which could be explored through the recovery and preparedness planning process. Firstly, assessments of the structural integrity, and level of preparedness, of pre-existing evacuation/ storm shelters could be conducted. Secondly, locations with relatively low reported access to evacuation / storm shelters could be targeted by Evacuation Centre Working Group partners for interventions. Thirdly, barriers to access to could be investigated in locations where most, but not all, of households reported knowledge of, and access to, evacuation / storm shelters.

As the response moves into the recovery and preparedness planning stage, it is critical that the remaining recovery needs of affected households are taken into account. 81% of households reported they had remaining needs to facilitate full shelter recovery, despite 68% of households reporting that they had received shelter assistance. Where remaining needs were reported, the most common were fixing and nails, milled timber, and chainsaws. With the majority of households reporting that the primary barrier to accessing the aforementioned materials and equipment is financial, it is clear that there is an opportunity and a need for shelter actors to continue providing recovery support to affected households.

As demonstrated in this report, for the most part, the response has been relevant in its design and planning while meeting the immediate emergency shelter needs of affected populations. Cluster coordination has been effective in ensuring that the majority of interventions implemented by shelter actors fit within the HAP Shelter Cluster response plan. The issues in assistance delivery as noted in this report can be attributed to the inherent logistical challenges which exist in operating in the context of Vanuatu. Finally, while there has been significant progress in meeting the immediate post-crisis shelter needs of affected populations, remaining recovery needs remain. As such, it will be essential that these needs are taken into account and integrated into the recovery and preparedness planning process.

ANNEXES

Annex 1: Household Data Collection Tool

Demographics

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

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

2. How many dwellings on this household plot share the same kitchen/eating space?
3. What gender is the respondent? Female Male
4. What gender is the head of household? Female Male
5. 5a. Are any members of your household pregnant or lactating? Yes No
5b. If yes, how many members of your household are pregnant or lactating?
6. 6a. Do any members of your household have a physical disability? Yes No
6b. If yes, how many members of your household have a physical disability?
7. 7a. Are any members of your household chronically ill? Yes No
7b. If yes, how many members of your household are chronically ill?

Displacement

8. Are you currently living in the same location you were prior to Cyclone Pam? Yes No
**If "No", answer questions 9. If "Yes" skip to question 10.
9. 9a. If in a new location what are you planning to do?
 - Remain in current location
 - Return to original site (prior to Pam)
 - Don't know
 - Other9b. If other, specify other plan.
10. 10a. What is the status of your land ownership?
 - Owner
 - Custom land
 - Renter
 - Rent free with consent of owner
 - Rent free without consent of owner
 - Other10b. If other, specify type of land ownership.
11. Are you currently sharing your house with displaced family, neighbour, others? Yes No

Shelter – Pre crisis

12. 12a. What was the main material used to construct your house's roof before Cyclone Pam?
- Natan Gura
 - Other thatch
 - Tin roof / CGI
 - Tarpaulins
 - Other handmade plastics
 - Concrete
 - Timber / wood
 - None
 - Other
- 12b. Specify other roof type
13. 13a. What were your house's walls made of before Cyclone Pam?
- Concrete
 - Tin / CGI
 - Wood
 - Bamboo
 - Wild cane
 - Thatch
 - None
 - Other
- 13b. Specify other walls type
14. 14a. What was your house's floor comprised of before Cyclone Pam?
- Dirt / Soil / Sand / Coral
 - Milled timber
 - Bamboo
 - Black palm
 - Concrete
 - Other
- 14b. Specify other floor type

Shelter – Damage

15. Was your house damaged as a result of Cyclone Pam? Yes No
**If "Yes," answer questions 16a – 18d. If "No," skip to question.
16. 16a. How badly was your roof damaged as a result of Cyclone Pam?
- Completely (all)
 - More than 50%
 - Less than 50%
 - None
- 16b. How badly were your walls damaged as a result of Cyclone Pam?
- Completely (all)
 - More than 50%
 - Less than 50%
 - None
- 16d. How badly was your floor damaged as a result of Cyclone Pam?
- Completely (all)
 - More than 50%

- Less than 50%
- None

Shelter – Recovery and Assistance

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

18. Have you received any shelter assistance to date? Yes No

**If “Yes,” answer questions 16a – 18d. If “No,” skip to question 22.

19. Were you asked what your household need was prior to delivery of this assistance? Yes No

20. 20a. What type(s) of shelter assistance have you received?

- Tarpaulins
- Tool kit
- Cash grant / voucher
- Kitchen set
- Blanket
- Fixing kit
- Building material
- New shelter – house
- Solar lamp
- Tent
- Training
- Other

20b. Specify other type(s) of shelter assistance received.

20c. Have you used the shelter assistance you received to date [for each item of shelter assistance selected in 20a]?

Yes No

**If “No” answer question 20d. If “No,” skip to question 20e.

20d. Why have you not used the shelter support you received [for each item of shelter assistance selected in 20a that has not been used]?

- Stored for future use
- Gave away (free)
- Sold
- Not appropriate for need

**If “Tarpaulin” “Fixing kit” or “Building material” selected, answer question 20e. If “No,” skip to question 20f.

20e. Did you receive information on how to make the best use of the building materials you received?

Yes No

20f. Where did you get the shelter support from [for each item of shelter assistance selected in 20a]?

- Family / friends
- Local authorities
- NDMO
- Other national government agency
- International organisation / NGO
- Local NGO / charity
- Don't know
- Other

20g. Specify other source(s) of support received.

20h. When did you receive the shelter support [for each item of shelter assistance selected in 20a)?

- Before launching repairs / rebuilding
- During repairs / rebuilding
- After completing repairs / rebuilding

21. 21a. Have you changed the way you build as a result of Cyclone Pam? Yes No

**If "Yes" answer question 21b – 21c. If "No," skip to question 22.

21b. What have you changed about the way you build?

- Location of my house
- Foundation
- Connection
- Bracing
- Shape of the house
- Stronger building
- Lighter building
- Material
- Other

21c. What made you change the way you build?

- Cyclone Pam
- Tools available
- Cyclone shelter at community level
- Community message / workshop
- Radio message
- Newspaper
- Local authorities
- NDMO
- Other national government agency
- International organisation
- local NGO / charity
- Other

21d. Specify other reason for change in the way you build

22. 22a. Were you able to primarily use recovered debris to conduct repairs / rebuilding? Yes No

**If "Yes" answer question 22b. If "No," skip to question 23.

22b. What types of materials were recovered for repairs / rebuilding?

- CGI
- Bamboo
- Natan Gura
- Other thatch
- Concrete
- Nails & fixings
- Timber
- Tools etc.
- Other

22c. Specify other materials recovered to rebuild / repair your shelter.

23. 23a. Does your household have any remaining needs to facilitate full shelter recovery? Yes No

**If "Yes" answer question 23b – 23e. If "No," skip to question 24.

23b. What materials / equipment / support does your household need to ensure full shelter recovery?

- Nails & fixings
- Timber
- Unmilled timber
- Natangura
- Other thatch
- Bamboo
- Chainsaws & accessories
- Bush knife
- Other tools
- Fuel
- Training
- Labour
- Financial
- Other

23c. Specify other remaining needs to fully rebuild / repair your shelter.

23d. Are you able to access this remaining recovery need [for each remaining shelter recovery need selected in 23b.]?

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

23e. What do you consider the primary barrier to completing repairs / rebuilding of your shelter?

- Other priorities
- Lack of financial resource
- Physical incapacities
- No markets
- No transport
- No community support
- No government support
- No NGO support
- Lack of materials
- Other

23f. Specify other primary barrier to completing repairs / rebuilding your shelter

24. 24a. What is the main material your roof is made of now?

- Natangura
- Other thatch
- Tin roof / CGI
- Tarpaulins
- Other handmade plastics
- Concrete
- Timber / wood
- None
- Other

24b. Specify other roof type now

25. 25a. What is the main material your walls are made of now?

- Concrete
- Tin / CGI
- Wood
- Bamboo
- Wild cane
- Thatch
- None
- Other

25b. Specify other wall type now

26. 26a. What is the main material your floor is made of now?

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

26b. Specify other floor type now

27. 27a. Are you planning any improvements for roof / wall / floor [asked for each component]? Yes No

**If "Yes" answer question 27b./27d./27f. If "No," skip to question 28.

27b. What type of roof improvements are you planning?

- Waterproof
- Stronger
- Change material
- Pitch roof
- Other

27c. Specify other roof improvements you are planning

27d. What type of wall improvements are you planning?

- Waterproof
- Stronger
- Change material
- Other

27e. Specify other wall improvements you are planning

27f. What type of floor improvements are you planning?

- Waterproof
- Stronger
- Change material
- Other

27g. Specify other floor improvements you are planning

28. 28a. Does your household currently receive electricity? Yes No

**If "Yes" answer question 28b. If "No," skip to question 29.

28b. What is the primary source of electricity at your house?

- Mains / grid
 - Solar
 - Personal generator
 - Community generator
 - Other
- 28c. Specify other electricity source.

WASH

29. 29a. What is your household's primary source (access point) of drinking water?

- Public tap/standpipe
- Tube well or borehole
- Protected dug well
- Protected spring
- Rainwater
- Unprotected dug well
- Unprotected spring
- Bottled water
- River / lake
- Other

29b. Specify other source of drinking water

30. 30a. What is the primary type of toilet facility accessed by members of your household?

- Flush/pour flush to piped sewer system
- 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

31. 31a. Does your household share its primary toilet facility with other households? Yes No

**If "Yes" answer question 31b. If "No," skip to question 32.

31b. If shared, how many households?

Health

32. 32a. Which of the following health conditions have members of your household experienced since Cyclone Pam?

- Acute respiratory illness
- Asthma
- Malaria
- Dysentery

- Diarrhoea and or vomiting
- Other stomach ailments
- Skin rashes
- Scabies
- Chicken Pox
- Other skin ailments (measles)
- Acute jaundice
- None
- Other

32b. Specify other health conditions experienced since Cyclone Pam.

Livelihoods

33. 33a. What was your primary source of household income prior to Cyclone Pam?

- Subsistence gardening
- Cash crop farming
- Garden produce or other homemade products
- Sell garden produce or other home-made products
- Wages from a job
- Earn profits from owning a business
- Owning a farm
- Proceeds from being in a cooperative
- Rent
- Government payments
- Remittances
- Other sources

33b. Specify other primary source of household income prior to Cyclone Pam.

33c. Have you managed to restart this livelihood to pre-crisis levels? Yes No

Preparedness

34. 34a. Does your household have access to an evacuation centre / storm shelter? Yes No

**If "Yes" answer question 34b. If "No," skip to question 35.

34b. What type of evacuation centre / storm shelter does your household have access to?

- Community hall
- School
- Church
- Cave
- Kindergarten
- Nakamal
- Chief house
- Banyan tree
- Friends or family nearby with safe house

34c. Specify other type of evacuation shelter type

35. 35a. Has your household put in place any shelter preparedness measures? Yes No

**If "Yes" answer question 35b. If "No," skip to question 36.

35b. What types of shelter preparedness measures have you put in place?

- Trim tree tops and branches well clear of your houses
- Fit shutters, or at least metal screens, to all glass areas
- Clear your property of loose material that could blow about and possibly cause injury or damage during extreme winds
- In case of a storm surge/tide warning, or other flooding, know your nearest safe high ground and the safest access route to it
- Prepare an emergency kit containing: A portable battery radio, torch and spare batteries; Water containers, dried or canned food and a can opener; Matches, fuel lamp, portable stove, cooking gear, eating utensils; and a first aid kit and manual, masking tape for windows and waterproof bags.
- Keep a list of emergency phone numbers on display
- Check neighbours, especially if recent arrivals, to make sure they are prepared.

36. Are you aware of, and able to access, any community managed contingency stocks? Yes No

37. What are your household's top three priority needs?

- Drinking water
- Water for domestic use
- Wastewater disposal systems
- Solid waste management
- Security/Policing
- Livelihood
- Shelter/Housing
- Roads
- Transportation
- Food
- Electricity supply
- Employment/Jobs
- Education
- Essential NFIs
- Hygiene items
- Health
- Other

37b. Specify other first / second / third primary need.

Observations

38. 38a. Which of the following Build Back Safer (BBS) techniques have been implemented on the shelter, if any?

38b. Foundation

- Concrete foundation (A)
- Post in ground (B)
- No foundation (C)

38c. Tie down Yes No

38d. Bracing Yes No

39. Take a picture of the main shelter (optional – ask for permission)

40. Take the GPS point of the main shelter (record within 10m accuracy)

Annex 2: Cleaned datasets (baseline & evaluation)

1. Baseline: <https://data.hdx.rwlab.org/dataset/shelter-and-settlements-vulnerability-assessment>
2. Evaluation: <https://data.hdx.rwlab.org/dataset/hap-shelter-cluster-response-evaluation-household-dataset>