

Shelter Advisor Deployment Report

Strategy recommendations for the Shelter Cluster for Maewo, Penama Province, Vanuatu

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Typical bamboo and tarpaulin shelter, Nasawa

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Introduction

CARE Emergency Shelter Team Leader deployed to Maewo, from 23rd August to 1st September, in order to support the Vanuatu Shelter cluster and its lead, Public Works Department, through the provision of technical advice and recommendations for strategy for the immediate, medium and longer-term shelter needs of the Ambae community evacuated to Maewo, in particular considering the upcoming cyclone season and beyond. Field visits were conducted together with PWD staff on Maewo and in consultation with community leaders include the paramount chief on Maewo, Rasa Ure. Field visits focussed on assessing the current state of shelter support and started to look at the capacity and accessibility of evacuation centres used during tropical storms and cyclones.

This report documents the deployment and offers recommendations for shelter programming priorities and approaches for all shelter cluster partners. Finding and recommendations were discussed with shelter cluster leads and partners in preparation of this report. CARE was able to make the shelter support available to the cluster through support from the Australian Government. Funding is not currently confirmed for the implementation of these recommendations and will need to be identified by shelter cluster and partners (see also attached proposal).

Following the declaration of the state of emergency on Ambae resulting from the increased activity of Manaro Voui volcano in mid-July and the compulsory evacuation of the entire island, 2,662 evacuees (NDMO figures) are currently being hosted on neighbouring Maewo island (home to approximately 3,000 Maewo people). All of them have access to some kind of shelter and, currently, relations between the host community of Maewo and the Ambaean evacuees are good. According to the figures cited in the Shelter Cluster meeting of the 7th September, the evacuees are sheltered as follows: 37% in the host community; 27% in new settlements; 19% with host families and 9% renting; 7% in evacuation centres. The initial emergency response of ensuring all people are in at least basic shelters is now complete and shelter cluster and partners can now start to focus on the next phase of needs defined by the upcoming cyclone season and the longer-term resettlement plans based on the premise that the ongoing volcanic activity on Ambae will prevent any imminent or permanent return of the evacuees.



Bamboo frame under construction for a family displaced from a school at the start of the term, Nasawa



Lack of privacy is a problem in shelters where materials have been pooled to create shared spaces



Shelters are starting to be upgraded using traditional materials from the bush



Upgraded shelters will still only offer limited protection from heavy rains and strong winds

Recommendations for immediate phase support (0-3 months)

Site planning

- Ongoing movement of Ambaeans to and from Maewo is expected and the numbers of evacuees and their locations on the island will need to be monitored.
- While data for the number of Ambaean evacuees on Maewo exists and is being updated, data for the host population on Maewo was yet to be finalised by the EOC at the time of writing this report (Emergency Operations Centre) in Kerebei (although data collection is underway).
- New arrivals are likely to need support with basic shelters. The Vanuatu Red Cross has limited stocks of tarpaulins and shelter toolkits in its store in Kerebei. The household size of the evacuee population is, on average, roughly one person smaller than the host community suggesting that families are split, possibly with a family member on Espiritu Santo or another island.
- Where evacuees have settled in areas that are exposed (perhaps too close to the beach) or at risk from flooding (rainwater runoff or storm surge) or landslides, support should be given to relocate those communities to safer locations. In some instances this process has already been instigated by the Maewo chiefs, but specific support for vulnerable households may still be appropriate. This work should be coordinated with the CDCCCs so that movements are recorded and planned actions are not duplicated.
- Four landslides around Asanvari in the south of Maewo at the beginning of September destroyed several houses. This highlights the vulnerability of some of the communities where road access is not possible.

Household shelters

- The limited humanitarian resources available suggest that a self-recovery approach is appropriate whereby households have choice over how and how quickly they respond to their situation.
- Funding should be prioritised for the immediate response on the basis that it is urgent ahead of the cyclone season. Further funding should be advocated for the longer-term response.
- Cyclone-resistant design of shelters using natural, locally-available materials is possible and well understood in Vanuatu. However, there is scope for raising awareness of key structural issues such as the importance of:
 - siting of shelters (natural hazards, risks of flash flooding, proximity of large trees, drainage)
 - strong foundations
 - strong connections
 - cross-bracing to shelter frames; taking lessons from the Cox's Bazar response in Bangladesh, even simple rope cross-bracing can greatly increase the wind resistance of a shelter; see appended documents.
- Many evacuees have started to upgrade their emergency shelters using local materials from the bush. Some have requested more three-inch nails as there were insufficient nails in the toolkits that were shared by several families (and some of the toolkits were distributed on Ambae and left behind during the evacuation). A distribution of nails and galvanised tie wire would help with the shelter upgrades. This should be done as soon as possible and combined with the awareness training.
- Reports from Maewo suggest that natangura leaves (for roof thatch) and bush vines are already in short supply locally so consideration will need to be given to importing materials from other

islands. The leaves may be available ready-woven into panels of thatch, but if the leaves can be imported to Maewo, the weaving of thatch could become a cash-for-work project on the island.

- Chief-of-chiefs, Rasa Ure, has raised concerns about the environmental damage to Maewo that could result from discarded tarpaulins. A guidance note on the safe recycling or disposal of tarpaulins is embedded at the end of this document and will be translated into Bislama and possibly other local languages by the Vanuatu Red Cross. IOM and the Vanuatu Department of Environmental Protection and Conservation are conducting an environmental assessment.
- Consider distributing mosquito nets for the rainy season; this should be coordinated with the health cluster.

Evacuation centres

- The cyclone season in Vanuatu is expected to last from the beginning of November until the end of April, although anecdotal evidence from Maewo suggests that it has been starting earlier over recent years. Strong winds as early as the 28th August caused alarm but seemed only to damage the tent used for EOC meetings in Kerebei.
- Preliminary estimates suggest that, for the island as a whole, there is close to sufficient capacity within evacuation centres on Maewo (defined as places where the population chooses to shelter from cyclones), but this needs to be reviewed in detail against NDMO guidelines. However, during periods of heavy rain, runoff from the high ground causes flash-flooding and the one road along the west coast of Maewo will become impassable to vehicles and pedestrians. This means that the island is effectively divided into zones and the local population will only have access to the evacuation centres within their local zone.
- A detailed mapping exercise therefore needs to be carried out, employing the local knowledge of the Maewo population, to define where the road becomes impassable. Then, the capacity of the available evacuation centres within each zone needs to be verified while confirming with the population that the centres are indeed where they would choose to shelter from a cyclone. The mapping process must be gender-sensitive and consider accessibility for people with disabilities.
- If the combined host population and number of evacuees within a particular zone exceeds the capacity of the evacuation centres the evacuees should be encouraged to relocate to a different zone with sufficient capacity if possible. This process will be sensitive and may involve the movement of entire communities. Each zone should have at least one evacuation centre that is accessible to people with disabilities.
- Alternatively, construction of additional cyclone shelters could be considered, preferably using traditional materials and techniques, but perhaps using imported materials to speed up the process. Preliminary data suggests that the south of the island has good evacuation centre coverage but is likely to be split into small zones following sustained rainfall, while the north of the island has fewer centres that will remain accessible. It should be noted that much of the evacuation centre coverage is concentrated into just a few sites such as the Lalvaru school.
- Following the mapping, technical assessments of the evacuation centres should be carried out, in consultation with the community, to identify possible vulnerabilities to high winds. The assessments should be carried out in line with the recommendations of the National Guidelines for the assessment and Selection of Evacuation Centres produced by the Government of Vanuatu Ministry of Climate Change Adaption. The expected vulnerabilities are likely to include:
 - insufficient roofing nails to the eaves and ridge of corrugated iron clad roofs
 - inadequate connections between structural members of timber roof trusses
 - inadequate cyclone strapping of roof structure to building frame
 - lack of cyclone shutters to windows, particularly those with glass louvres

- In addition, other aspects of the evacuation centres should be considered such as the availability and accessibility of WASH facilities (since people may have to take shelter for up to two or three days) and the specific needs of vulnerable people.
- Bills of quantities for repair materials (roofing nails, cyclone strapping, punched nail plate truss connectors etc.) should be prepared for each selected and evaluated evacuation centre and local carpenters engaged to carry out the remedial works. In some instances this may involve the temporary removal of the roof sheeting to allow, for example, roof truss improvements. Where unskilled labour could contribute to the repairs, the work could be linked into planned cash-for-work programmes involving people from both Ambae and Maewo. (There are about 125 3-inch roofing nails per kilogram, and 14 nails per metre run of a standard 76mm pitch CGI sheet.)
- These improvements to evacuation centres are intended to benefit both the host community from Maewo and the Ambaean evacuees who may also shelter there during a cyclone.
- Clear messaging to both the Maewo host community and Ambaean evacuees needs to be disseminated by the CDCCCs (Community Disaster and Climate Change Committee) so that people understand exactly where they should go for shelter in the event of a cyclone warning.

Training and awareness

- Awareness training sessions, perhaps just an hour long, should include the whole community (host community and evacuees) and encourage the participation of women and vulnerable people. Training sessions should be scheduled to fit around women's home and family commitments to maximise their opportunity to participate.
- More thorough training for local / community builders and possible roving teams that would support good shelter construction and improvements could be carried out. The roving teams should be the motivators / mobilisers in the community who encourage good building practice. High numbers of female-headed households have been identified on Maewo, so the teams should target them and help them, as well as younger men, to play an active role in shelter construction. The teams could receive top-up training and perhaps an incentive (such as an upgraded toolkit). They would also be a voice for the community, feeding back the concerns of the population. It is expected that the community builders would need to be paid, but that some of their payment could be in-kind in good-quality tools.
- Note that in Vanuatu there are regulations around accredited training. Make links with Vanuatu TVET (Technical Vocational Education and Training) and Vanuatu Institute of Technology.
- The shelter awareness should be supplemented with distributions of nails, galvanised wire, cyclone strapping and rope as appropriate, along with practical assistance in their use for vulnerable households and appropriate IEC materials. An example, which could be translated into Bislama, is appended at the end of this document.

Longer-term shelter response (3+ months)

There are many variables that will influence the longer-term shelter response on Maewo. Some of the considerations and recommendations are listed below.

Situation

- The VMGD (Vanuatu Meteorology and Geo-Hazards Department) alert level of Manaro Voui volcano is currently at Level 3 and is likely to remain there long after the official end of the state of emergency on the 26th September. (Update 27 September – VMGD reduced to level 2, COM extended SoE until November 2018)
- The Maewo communities were only expecting to be hosting the Ambaeans for the period up to the 26th September 2018, although the rasa and chiefs are planning for a more realistic six-month period.
- Even if they are allowed to, Ambaeans are unlikely to return to Ambae until they feel safe to do so and are able to restart their livelihood activities on the island.
- Four potential permanent resettlement sites have been identified on Maewo, but all will require at least some infrastructure work before evacuees can be housed.
- Access to land for growing produce will be required and it is understood that the quality of the soil is being assessed on the sites that were previously plantations.
- Housing, land and property (HLP) rights will affect the viability of the resettlement sites. It is understood that Ambaeans will only have access rights and not tenure. Refer to the appended documents for the detailed HLP assessment recently published by IFRC and the Australian Red Cross.

Recommendations

- The infrastructure work at the identified resettlement sites will involve clearing the land, providing access paths (not necessarily for vehicles though), water and sanitation facilities and communal facilities such as evacuation centres and kitchens. In line with a self-recovery approach, Ambaeans should be consulted on the infrastructure needs to ensure that the proposals are appropriate. Their expectations may differ significantly from what the authorities are proposing. However, the site planning process must ensure that there are evacuation centres in place with sufficient capacity to shelter the anticipated resettlement site population before anyone moves in.
- Constructing evacuation centres, such as the nakamals, using traditional materials will take several months if the materials are sourced on Maewo, so the centres would not be ready for the 2018 cyclone season. Traditionally, the men collect materials from the bush and construct the timber frame while the women weave the thatch. This process could be speeded up using materials imported from other islands of Vanuatu. Construction of such shelters would also require large nails for timber (4-, 5- and 6-inch nails) not readily available on Maewo.
- There will be a need for detailed settlement planning and a mechanism in place for dispute resolution in, for example, the cases of households that feel they received a smaller plot of land, further from the water source.
- Given Rasa Ure's environmental concerns about Maewo, new shelters should be constructed using natural materials. However, with close to 800 Ambaean evacuee households currently resident on Maewo, the quantities of materials involved will be considerable. The Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity (MALFFB) has the capacity to verify the

availability (and sustainability?) of local materials such as the natangura (sago palm) used for thatched roofs.

- Rasa Ure has also repeatedly highlighted the importance of privacy in all new shelters.
- If appropriate, and based on the environmental impact assessment and availability of local timber, the hire of a mobile sawmill (of the kind that fits on the back of a pick-up) could be considered. The need for a communal chainsaw in each community should also be assessed and, if provided, should be accompanied by rigorous training on their use and maintenance, fuel and suitable safety equipment.
- Timber should be sustainably sourced so that for each tree cut down another five are planted.
- Good-quality tools would certainly be welcome, including hoes and shovels for excavating foundations. Experience from the tropical cyclone Pam response on Tanna suggests that contingency stocks of tools bought in advance (rather than under pressure at the last minute) allows better quality tools to be purchased.
- Expectations for housing will differ between Ambaeans, who typically have a concrete block base to walls with woven bamboo panels or timber framing above, and the Maewo population who live in bamboo and timber-framed houses. So, consultation with the evacuees (including women, children and vulnerable groups) will be required for a successful outcome of the settlement planning.
- Livelihood opportunities could be developed around the reuse of tarpaulins; they can be washed, cut into strips and woven into bags and other items for sale to tourists in Port Vila. Make links with the FSL sector (Save the Children). Similarly, the weaving or natangura thatch and split bamboo wall panels for new shelters could represent further livelihood opportunities targeted towards women, who traditionally carry out this type of work.

Appended documents

- GSC guidance note on the recycling of tarpaulins
- IEC sheet on fixing of tarpaulins
- IFRC / Australian Red Cross HLP in Vanuatu publication
- IEC sheet on wall bracing (from the Bangladesh shelter sector)



180830 Plastic
Sheeting Recycling and



IEC-Fixing-Plastic-Sheeting_1-pager.pdf



Vanuatu HLP.docx



wall_bracing_iec.pdf

Attachment: Summary of most urgent shelter issues, September 2018

1. It is estimated that approximately 60% of the 800 households in Maewo are accommodated in temporary emergency shelters (others are with host families or rented houses). Everyone is covered by at least an emergency shelter using tarpaulins, which is meeting the emergency shelter needs in good weather. There is no need for more tarpaulins, except for any new arrivals, and planning should shift to considering environmentally-friendly disposal of tarpaulins in the long term.
2. Communities have a good knowledge of basic and traditional construction techniques and designs and have already started to improve their shelters through improving tarpaulin structures with bamboo frames, addition of thatch roofing (natangura) to improve waterproofing and use of coral gravel for flooring.
3. While many families received Red Cross shelter toolkits on Ambae, many did not bring them to Maewo, and there is a gap in basic construction materials such as nails, tie wires and cyclone strapping, which is needed to strengthen the improved shelters.
4. Some communities have built their shelters on vulnerable sites prone to flooding and storm surge, and some shelters are communal and could be improved for more privacy and dignity.
5. Maewo has a rainy climate and the cyclone season is due to commence. The current shelters will not be adequate to cope with even a mild depression and winds, let alone cyclones (refer to the technical considerations overleaf). There is a high risk that shelters will be destroyed in strong winds, and that communities will be vulnerable to flooding and drainage issues from heavy rains, which are common (and predicted this week by the Vanuatu Meteorology and Geo-Hazards Department). It is certain that shelters will be destroyed once winds reach cyclone strengths.
6. It is possible, and urgently required, to strengthen the temporary shelters to increase their resistance to wind and rain through minor technical investments in improved foundations, bracing, connections and siting. This will help to protect communities' health, dignity and property during poor weather.
7. It is not however possible to make these shelters cyclone resistant, therefore in order to save lives, improvements to individual shelters must be conducted in tandem with solutions to ensure availability of evacuation centres/ communal cyclone shelters for communities to access in the event of a cyclone.
8. A rapid identification and quantification of possible evacuation centres available to accommodate both Maewo and Ambae communities established that:
 - a. There are approximately 35 buildings with the potential to be used as evacuation centres including schools, churches, government buildings, traditional nakamals and private houses.
 - b. There is a gap in capacity in some communities for approximately 1,700 people. Some communities will not have adequate access to a shelter and a solution will need to be found either through rapid construction or relocation.
 - c. The centres are in various conditions and the majority would require at least some repair or reinforcement in order for them to be considered safe in a cyclone.
 - d. A detailed technical assessment by an engineer is required. Based on the rapid assessment, the majority of structural issues include:
 - insufficient roofing fixings to the eaves and ridge of corrugated iron clad roofs
 - inadequate connections between structural members of timber roof trusses
 - inadequate cyclone strapping of roof structure to building frame
 - lack of cyclone shutters to windows, particularly those with glass louvres
 - e. The centres need also need to be assessed against NDMO standards for other factors such as sanitation facilities.