



This initiative is supported by **PacWastePlus**-a 64-month project funded by the European Union (EU) and implemented by the Secretariat of the Pacific Regional Environment Programme (SPREP) to **sustainably and cost effectively improve regional management of waste and pollution.**

OUTCOME REPORT

Tropical Cyclone Harold Recovery Works in Vanuatu

November 2020



In response to a request from the Vanuatu Government, the PacWastePlus Programme, in partnership with the Department of Environmental Protection & Conservation, and the Luganville Municipal Council, developed and deployed this project to provide vital support to communities on the islands of Santo, Pentecost, Aore and Malo.



Disclaimer: This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of SPREP and do not necessarily reflect the views of the European Union. This document has been compiled in good faith, exercising all due care and attention. SPREP does not accept responsibility for inaccurate or incomplete information.

© Secretariat of the Pacific Regional Environment Programme (SPREP), 2020. Reproduction for educational or other non-commercial purposes is authorised without prior written permission from the copyright holder provided that the SPREP and the source document are properly acknowledged. Reproduction of this publication for resale or other commercial purposes is prohibited without prior written consent of the copyright owner.

SPREP Library Cataloguing-in-Publication

Tropical Cyclone Harold recovery works in Vanuatu:

outcome report. Apia, Samoa: SPREP, 2020.

50 p. 29 cm.

ISBN: 978-982-04-0914-9 (ecopy)

1. Cyclonic storms – Vanuatu 2. Emergency management – Vanuatu 3. Disaster relief – Vanuatu. I. Pacific Regional Environment Programme (SPREP). II. Title. 551.551 30959 5



Secretariat of the Pacific Regional Environment Programme (SPREP)

PO Box 240 Apia,

Samoa

www.sprep.org

sprep@sprep.org

Our vision: A resilient Pacific environment sustaining our livelihoods and natural heritage in harmony with our cultures.

Content

Executive Summary	4
Project Background	6
Project Design and Methodology	7
Description of Targetted Communities	8
Santo	9
Pentecost	13
Aore	16
Malo	17
Disaster Waste Management Training	18
Disaster Waste Collection	20
Drafting of Community Disaster Waste Management Plan	20
Results	20
Disaster Waste Management Training	20
Volume of Disaster Waste Removed	22
Community Disaster Waste Management Plans	23
Gender Equity and Social Inclusion	26
Communication & Visibility	27
Project Evaluation	29
Community Evaluation	29
Project Team Evaluation	34
Discussion & Recommendations	35
Appendix 1: Visibility and Communications	36

Abbreviations

CDCCC	Community Disaster and Climate Change Committee
CDWMP	Community Disaster Waste Management Plans
DEPC	Department of Environmental Protection and Conservation
JPRISM II	Japanese Technical Cooperation Project for Promotion of Regional Initiative on Solid Waste Management, Phase II
LMC	Luganville Municipal Council
NDMO	National Disaster Management Office

Executive Summary

Following a request from the Vanuatu Government to provide support for waste clean-ups following Tropical Cyclone Harold which made landfall in Vanuatu in April 2020, the PacWastePlus Programme, in consultation with the Department of Environmental Protection and Conservation (DEPC), and other donor funded waste projects, implemented support activities to nine communities on the islands of Santo, Pentecost, Aore and Malo.

The project was deployed in September 2020 following extensive consultation to confirm the specific support requirements. The project was managed by staff from PacWastePlus (Regional Officer based in Vanuatu), an extension officer for DEPC and support from the Luganville Municipal Council (LMC).

The main objectives were:

- 1) to remove disaster waste generated by Topical Cyclone Harold
- 2) to minimise associated impacts on identified communities

The following activities were undertaken to achieve these objectives:

- Facilitation of community training on disaster preparedness, which focused on disaster preparedness, waste segregation, safe handling of waste, waste data collection and community disaster preparedness planning
- Waste clean-up remaining from Tropical Cyclone Harold
- Drafting of Disaster Waste Management Plan for the nine communities to assist in managing disaster wastes from future disasters

The training sessions were designed to empower local communities to quickly recover from the impacts of a natural disaster (e.g. tropical cyclones) through preparedness planning and improved management of disaster waste.

The training was facilitated in French and Bislama to ensure that participants understood the training content. The training was designed to inform communities about:

- disaster waste management activities that should be undertaken at each stage of the Disaster Management cycle
- the different types of disaster waste and its impact when not managed effectively
- the importance of having a Disaster Waste Management Plan (and assistance to develop a plan)

A total of 202 men, women and youth, from across the nine communities, participated in the disaster waste management training. Of the training participants, 106 participated in the collection of disaster waste from the nine communities.

Prior to collecting materials, additional training on:

- a) safely handling disaster waste collection
- b) data collection of disaster waste activities
- c) Health and safety plan waste collection activities

A volumetric estimation of the disaster waste estimated $\sim 239\text{m}^3$ of disaster waste was collected: 97% on Santo and the remaining 3% from the islands of Aore, Malo and Pentecost.

Disaster waste collected for Aore, Malo and Pentecost were generated from relief supplies provided to the communities and it was noted that wastes generated from the impact of the cyclone within these islands were either burnt or buried by community members prior to the deployment of this project.

A series of Community Disaster Waste Management Plans were drafted by the project team, utilising learnings and feedback received during the community training sessions. These draft plans will be provided to DEPC for further refinement and consultation prior completion and local implementation.

There were some challenges encountered in the designing and implementation of this project and lessons learnt will be used to guide future disaster waste management trainings and community disaster resilient projects. It is recommended that future response works be coordinated by relevant government departments to ensure that assistance provided through various donor agencies are not duplicated and the benefits are maximised for the communities.

Such coordination would ensure timely and effective response being delivered thus ensuring that assistance rendered provides meaningful intervention. Forms provided during training (registration and evaluation) may not be relevant in rural communities and it is recommended that alternative evaluation methods be introduced such as video interviews.



Project Background

Tropical Cyclone Risk - Vanuatu

The World Risk Index systematically considers a country's vulnerability and its exposure to natural hazards to determine a ranking of countries around the world based on their natural disaster risk. Vanuatu is the country with the highest disaster risk worldwide¹. It is closely followed by Tonga (South Pacific Ocean) and Dominica (Caribbean Sea).

The Japanese Technical Cooperation Project for Promotion of Regional Initiative on Solid Waste Management, Phase II (JPRISM II) project facilitated Disaster Waste Management training in Vanuatu in November 2019 and February 2020, specifically targeting government officials in Port Villa. The training highlighted appropriate disaster preparedness measures and timely post-disaster responses and empowered those trained to draft national disaster waste management plans.

Tropical Cyclone Harold

On 3 April 2020, the Vanuatu National Disaster Management Office (NDMO) issued a yellow alert—indicating the threat of a tropical cyclone within 12 hours—for Torba and Sanma provinces in Vanuatu. Between April 3-6, Tropical Cyclone Harold intensified into a Category 5 cyclone just before making landfall on Santo (6 April 2020). Tropical Cyclone Harold was the second Category 5 severe tropical cyclone to strike Vanuatu after Cyclone Pam in 2015. The Banks Islands, Espiritu Santo, Malekula, and Pentecost islands were in the direct path of Tropical Cyclone Harold, and communities on these islands were badly impacted.

In response to a request from the Vanuatu Government (received on 3rd June 2020), the PacWastePlus Programme, in partnership with the Department of Environmental Protection & Conservation, and the Luganville Municipal Council, developed and deployed this project to provide vital support to communities on the islands of Santo, Pentecost, Aore and Malo.

A project plan was developed by the PacWastePlus PMU and a project team making up of the PacWastePlus Regional Officer based in Port Villa, an extension officer from DEPC and an officer from LMC was deployed in September 2020 to work with nine communities identified by DEPC.



¹ As stated on the World Risk Index website (<https://www.drishtias.com/daily-updates/daily-news-analysis/world-risk-index-2020#:~:text=it%20is%20calculated%20on%20a,for%20various%20countries%20and%20regions>).

Project Design and Methodology

Following a request from Vanuatu government, the PacWastePlus team held several consultations with other donor partners committed to providing assistance to Vanuatu to coordinate activities on the ground and ensure that there are no duplication of activities and the benefits to the Vanuatu communities are maximised. The primary objective of the project was to remove disaster wastes generated from Tropical Cyclone Harold in the nine communities identified by DEPC.

The main objectives of the project were:

- a) to remove disaster waste generated by Tropical Cyclone Harold
- b) to minimise associated impacts on identified communities

Targeted project activities were implemented in the following communities:

- Santo (Banban, Shokraon, Chapuis, Solway)
- Pentecost (Pangi, Waterfall and Vanmeskul)
- Malo island (Waisale)
- Aore island (George Lini Plantation)

The project was managed by staff from PacWastePlus (Regional Officer based in Vanuatu), an extension officer for DEPC and support from the Luganville Municipal Council (LMC).

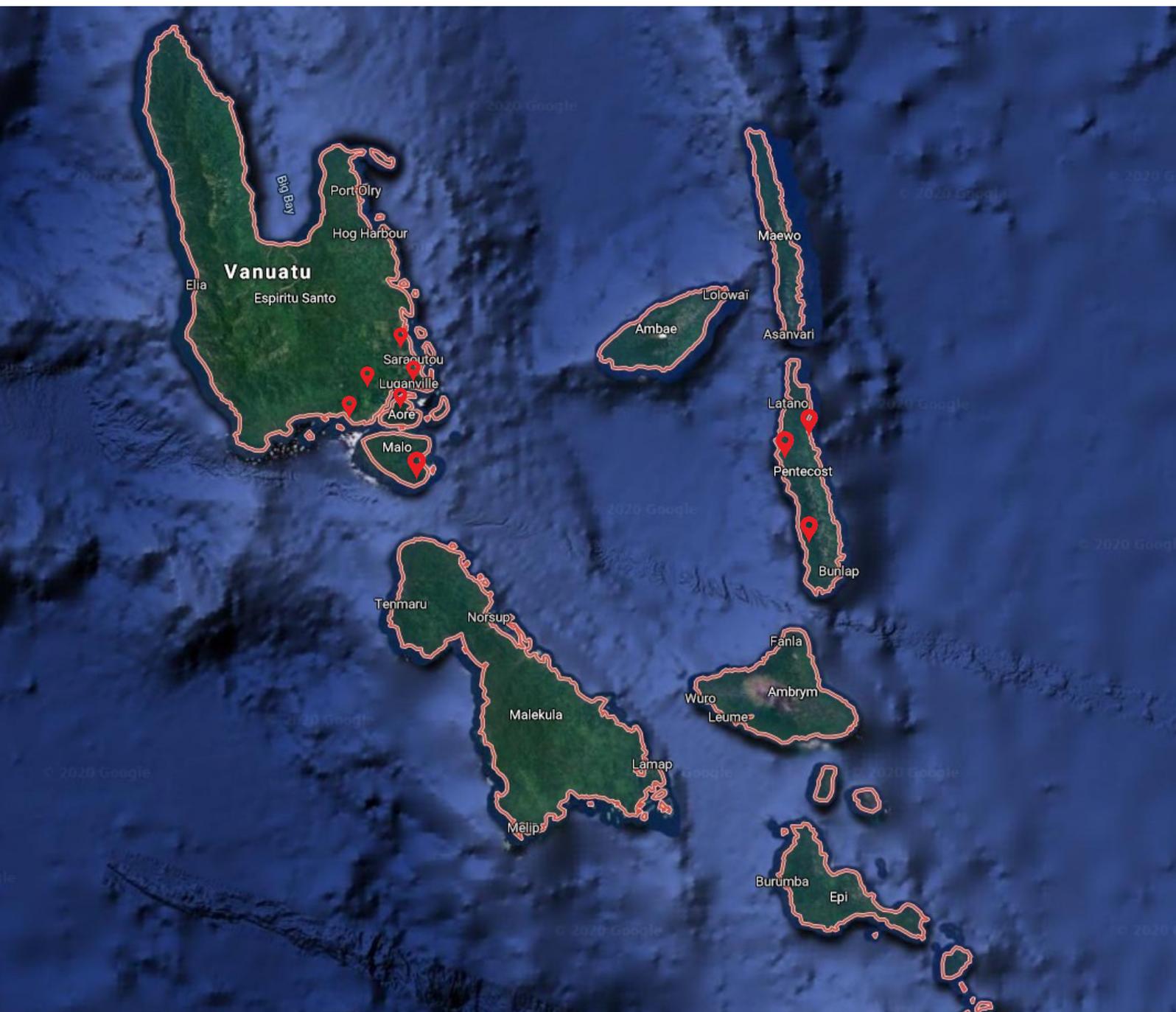
Communities were informed of the project and requested to participate by the LMC and the Provincial Governments. Information was provided to Local Area Administrators (Provincial Government) and Ward Councillors (LMC) of the Provincial Governments. Two weeks before deployment, the Area Administrators worked directly with each community to help organise the logistics for training sessions and clean-up activities. The local government utilised church networks, women's associations, council of chiefs, youth committees and market houses to notify each community of the training sessions and clean-up activities.



Participating Communities



Details of the participating communities follow.





SANTO

Banban

Banban is a rural residential area located just outside of Luganville town on the island of Santo in the northern part of Vanuatu. Banban falls within the jurisdiction of the South East Area Council of Sanma Province. Banban is one of the two most densely populated areas in South East Santo comprising of approximately 300 households. It was directly in the path of Tropical Cyclone Harold.

Sanma Provincial Government does not provide rubbish collection services to Banban. As a result, most households resort to burning solid waste or burying it in backyard pits. The LMC and the DEPC have been working closely with Sanma Province to address waste management issues and services to their communities. Banban has a functioning Community Disaster and Climate Change Committee (CDCCC).

Following Tropical Cyclone Harold, Banban residents participated in a community clean-up organised by LMC and Sanma Province, which involved clearing each yard of disaster waste and placing it on the roadside. However, the collected waste remained on the roadside and was not removed prior to this project activity.





Shokraon

Shokraon is a residential area located just outside of Luganville town and with 350 households, is the most densely populated community on the island of Santo. Shokraon is under the jurisdiction of Sanma Province within the South East Area Council. Shokraon was directly in the path of Tropical Cyclone Harold.

The Shokraon community does not receive garbage collection services therefore, most households resort to burning and burying waste. The LMC and the DEPC have been working closely with Sanma Province to address waste management issues and services to their communities.

Shokraon residents collected disaster waste from Tropical Cyclone Harold and placed them at the roadside but were not collected until this project was deployed.

Shokraon has a functioning Community Disaster and Climate Change Committee (CDCCC).





Chapuis

Chapuis is a suburban area of Luganville, on Santo Island and was in the path on Tropical Cyclone Harold. There are approximately 200 households within Chapuis. In 2014, the Council introduced Vanuatu's first pre-paid bag system managed through weekly rubbish collection services provided by LMC. Some households avoid purchasing pre-paid bags by illegally dumping solid waste on vacant properties or burning it in their backyard.

Chapuis is divided in four districts (Chapuis 1, Chapuis 2, Chapuis 3 and Chapuis 4). Residents of Chapuis 2 participated in post disaster clean-up organised by World Vision and LMC following Tropical Cyclone Harold. Chapuis 1, Chapuis 3 and Chapuis 4, had not received disaster clean-up support, and were the focus of the project activity in this community.

Chapuis has a functioning Community Disaster and Climate Change Committee (CDCCC).





Solway

Solway is a peri-urban residential area within Luganville and was in the path of Tropical Cyclone Harold and is home to 150 households. Solway is situated along the banks of the Sarakata river and is a flood-prone area. Solway receives weekly rubbish collection services through a pre-paid bag system from the LMC. Despite the availability of this service, some households avoid purchasing pre-paid bags, and instead burn rubbish in their backyards.

Solway community had participated in a post disaster clean-up organised by World Vision and LMC following Tropical Cyclone Harold. However, not all waste was removed from the community. The remaining waste was removed through this project activity with the assistance of volunteers from the community.

Solway has a functioning Community Disaster and Climate Change Committee (CDCCC).





PENTECOST

Pangi

Pangi is a coastal village located on south Pentecost in Penama Province. It is the commercial hub of south Pentecost and was directly in the path of Tropical Cyclone Harold. The 30 households in Pangi receive no rubbish collection services. Waste management in Pangi involves either burning rubbish, burying in backyard pits, or disposing it into the closest stream.

Following Tropical Cyclone Harold, residents of Pangi undertook clean up campaigns and collected and sorted their construction waste and organics. Felled trees were cut using chainsaws for fenceposts and firewood. Construction material such as iron roofing and timber frames were also collected and stored for reuse by each household. The project removed all disaster waste generated from relief supplies provided to the community and these included plastic bottles and tins. Pangi has a functioning Community Disaster and Climate Change Committee (CDCCC).





Waterfall

Waterfall is a coastal village on south-west Pentecost and comprises of 15 households. Waterfall has a functioning Community Disaster and Climate Change Committee (CDCCC). There are no rubbish collection services or landfills. Waste management in Waterfall involves either burning rubbish, burying in backyard pits, or disposing into streams.

Residents of Waterfall had already collected, and sorted disaster waste generated from Tropical Cyclone Harold. The community hired an excavator to dig two pits at the back of the village for residents to dispose the remaining disaster waste. Felled trees were used for fenceposts and firewood, and construction material such as iron roofing and timber frames were set aside for use in reconstruction. The remaining waste was burnt or placed in the new waste pits.





Vansemakul

Vansemakul is a community located in Central Pentecost in the Penama Province. The 15 households in Vansemakul receive no rubbish collection services. The only method of waste disposal they practice is to throw rubbish off the edge of a cliff into a dry creek. Following Tropical Cyclone Harold, residents collected and sorted their construction waste and organics. Felled trees were cut for fenceposts and firewood, and construction materials such as iron roofing and timber frames were collected and stored for reuse by each household. The remaining waste was burnt or disposed at the community dump off the edge of the cliff. Removing waste from the community dump was risky and the project helped removed all disaster waste generated from the relief supplies provided to the community. The project also facilitated training on disaster waste management and drafting of a community disaster waste management plan for Vansemakul.

Most of the buildings in the community, including the pre-school and chapel were destroyed during Tropical Cyclone Harold. The community has since started rebuilding with the support of local NGOs. There is an existing Community Disaster and Climate Change Committee (CDCCC) in Vansemakul.





Aore

Aore is a small island off the coast of Luganville Town and was directly in the path of Tropical Cyclone Harold. It is part of the Fanafo-Canal Area Council under the jurisdiction of Sanma Province. There is no garbage collection service provided on Aore. There are three resorts and a mission school that each have private dumpsites on their respective properties. Most of the communities reside in settlements among coconut plantations and manage solid waste by burning or burying in backyard pits.

The project worked with a community at George Lini Plantation which comprised of 25 households. There is a communal dump at an old quarry where all waste generated by the community are disposed. Following Tropical Cyclone Harold, residents of George Lini Plantation had already collected and sorted their construction waste and organics. Felled trees were cut for fenceposts and firewood, and construction materials were stored by each household for reuse. The remaining disaster waste were the empty plastic water bottles and empty food tins that the community had received from the disaster response. The project removed disaster waste generated from relief supplies provided to the community.





Malo

Malo is an offshore island located 3 km off the southern coast of Santo, Sanma Province. It is next to Aore island and was directly in the path of Tropical Cyclone Harold. This project focused on Waisale community on West Malo. Waisale community was selected because it is one of the main transport corridors where water taxi transport residents between Malo and Santo. The 22 households in Waisale receive no rubbish collection services.

Following Tropical Cyclone Harold, residents of Waisale had collected and sorted their construction waste and organics. Felled trees and construction materials have been collected for recycling and storage. The project removed disaster waste generated from relief supplies provided to the community.



Disaster Waste Management Training

The PacWastePlus team, with assistance from DEPC, developed a training manual based on the training guideline introduced by JPRISM II and the University of New Castle in November 2019. The training manual developed focused on five of the six stages of the Disaster management Cycle (*Prevention & Mitigation, Preparedness, Early Warning, Emergency Response, and Recovery*).

The training was designed to inform communities about the:

- disaster waste management activities that should be undertaken at each stage of the Disaster Management cycle
- different types of disaster waste and its impact when not managed effectively
- importance of having a Disaster Waste Management Plan (and assistance to develop a plan)

In addition to training on Disaster Waste Management, community members volunteering for the disaster waste collection were trained to:

- safely handle disaster waste
- collect and collate waste management data
- to manage and protect the health and safety of volunteers

To ensure that training was easily accessed by community members, the trainings were facilitated in community and church halls. This was to ensure that there was sufficient space to cater for all community members.

Attendees were required to sign a registration form prior to the training and clean-up activities, enabling the project team to capture demographic information of participants. Disaster waste management training was facilitated in French and Bislama to ensure that participants understood the content of the training and the objectives of the project.

Training sessions were managed as informal gatherings with a combination of presentations, group discussions and group exercises, all guided by the facilitator. The DEPC and LMC officers were experienced facilitators and ensured that all participants were involved in the activities. There were icebreakers and confectionary available to energise the participants.

The team collected the opinions of each community through 3 mediums:

- group notes
- group presentations that were recorded by the facilitator
- video interviews

Small group discussions were held with men, women, and youth. The roles, needs, and behaviour of each group was recorded to gain an understanding of the different ideas and approaches to managing disaster waste in the community.



Disaster Waste Collection

The project management team, with the assistance of volunteers from each community, undertook a disaster waste assessment, and then collected any remaining disaster waste for either recycling or disposal at the Luganville Waste Management Facility.

To manage health and safety of the volunteers, the following activities were undertaken:

- Development and training on health and safety and safe work activities
- Provision of Personal Protective Equipment (safety gloves and high visibility vests)
- Availability of first aid kits and drinking water

Volunteers were divided into groups and each group was designated a waste stream to collect. Each group collected and recorded the volume of waste. A volumetric assessment was undertaken and used to guide the estimation of the weight of the disaster waste collected.

The following information was recorded:

- Waste type
- Volume (m³)
- Converted weight estimate
- Disposal method (collected for recycling, collected for disposal, safely stored for collection by government agency at a later date, composted or reused by communities)

All recyclables collected were delivered to a recycling company. All non-recyclable wastes were disposed of at the Luganville Municipal Waste Management Facility. The LMC allocated designated space within the site to receive disaster waste. To enable the material to be received, a bulldozer compacted waste at the site to allow space for project waste to be disposed at the dump site.

Waste streams collected were:

- **Recyclables:** steel cans, aluminium cans, other metals (limited to those able to be safely handled by volunteers)
- **Bulky waste:** damaged furniture, concrete blocks, housing timber, roofing iron and e-waste (*note: bulky waste on Pentecost Island was stored for DEPC to remove at a later date*).
- **Non recyclables waste:** all waste materials not accepted by the recycling company.





Drafting of Community Disaster Waste Management Plans

Discussions during the community training sessions was used by to draft Community Disaster Waste Management Plans (CDWMP) for each of the nine communities. These CDWMP's identify key activities recommended to be undertaken by communities in the different stages of the disaster management cycle, to build community resilience to natural disasters.

The draft CDWMP's will be the subject of peer review by the DEPC before finalisation with the community (a process to be undertaken by DEPC).

Results

The following are details of the project activities in each of the participating communities.

Disaster Waste Management Training

The training was facilitated as an informal discussion to ensure that participants were comfortable with raising their opinion. Participants noted the importance of managing disaster waste given its environmental and social impact. Participants from all nine communities requested the assistance of DEPC in removing disaster waste from the communities and conducting future awareness and education on waste segregation and composting.

Participants proposed some improvements to waste management including:

- installation of rubbish stands for communities with garbage collection services
- introduction of proper waste disposal sites for communities in the islands of Pentecost, Aore and Malo

A summary of discussions from each community training is included in **Table 1**.

Table 1: Summary of training sessions

Community	Summary of discussions
<i>Banban</i>	<ul style="list-style-type: none"> • Participants found the community registration forms too long to fill, and the team ended up having to go through the form individually with each participant. • There is no rubbish collection service at Banban, and the community requested the assistance of DEPC in removing all disaster waste. They have been waiting since April for assistance with rubbish collection but received no response from Sanma Province.
<i>Shokraon</i>	<ul style="list-style-type: none"> • There is no rubbish collection service at Shokraon. It is peri-urban but outside of Luganville Municipality, so most household waste is burnt in backyards before being disposed in pits. • The community has requested the assistance of DEPC in removing all disaster waste. They have been waiting since April for assistance with rubbish collection but received no response from Sanma Province.
<i>Chapuis</i>	<ul style="list-style-type: none"> • Residents also mentioned that households do not have rubbish stands to store rubbish for municipal collection. The rubbish bags that are placed on the front yard are usually damaged by dogs, leaving items like diapers spread across other properties.
<i>Solway</i>	<ul style="list-style-type: none"> • The youth agreed to pass on the training and flyers to the other youth members and households around Solway. • No women participated in the trainings despite efforts from the project team to invite those in Solway who were unemployed, elderly, or single mothers. The project team observed the majority were unable to join the session during the allocated time because they were either doing house chores, babysitting, or preparing food for sale at the local kava bars.
<i>Pangi</i>	<ul style="list-style-type: none"> • Waste generated in the community are either burnt or dumped in the stream. The community lacked proper waste management daily. • Pangi is a major port of entry for vessels to Pentecost. It is also where the main banking and health facilities are based for South Pentecost. The community want to find a way to improve their waste management.
<i>Waterfall</i>	<ul style="list-style-type: none"> • The community had no previous connection to DEPC, so it was difficult to mobilise them to do any rubbish collection. • The community leaders commented that the two communal rubbish pits that they have behind the village is enough to handle the community rubbish including the disaster waste from Tropical Cyclone Harold.
<i>Vansemakul</i>	<ul style="list-style-type: none"> • The Vansemakul dumpsite is already filled and DEPC has advised community on ideal places to dig pits as new dumping areas.
<i>Aore</i>	<ul style="list-style-type: none"> • Although the discussions involved a few participants, they represented the communities residing around this area of Aore. • Community members were still rebuilding from the devastation of Tropical Cyclone Harold. • DEPC and LMC staff realised that environmental resources provided by government that were being disseminated in urban schools did not reach many rural schools e.g. Aore and Pentecost. • DEPC and LMC have developed curriculum for schools and teachers have requested it.
<i>Malo</i>	<ul style="list-style-type: none"> • The community has requested DEPC to include Malo in their schedule and visit more to see their issues.



Volume of Disaster Waste Removed

Approximately 239m³ of disaster waste was collected with 97% of these was recorded on Santo. Communities in Santo receive garbage collection services from the Luganville Municipal Council and were awaiting the special collection service for disaster waste at the time this project was deployed.

The remaining 3% of total disaster waste collected was from the islands of Pentecost, Aore and Malo. Disaster waste recorded in these three islands are generated from relief supplies provided. Disaster waste generated from the impact of the cyclone in these communities were either burnt or buried by local communities prior to the deployment of this project. Waterfall village was the only community that did not participate in the waste assessment or clean-up activity as all the community disaster waste had either been burnt or buried.

Overall, the largest waste stream recorded was bulky waste (124m³) which consisted primarily of roofing iron, housing timbers, E-waste, damaged furniture, and household items. The bulky waste collected was all from communities on Santo. Non-recyclable wastes recorded the second largest volume, with a total of 81.7m³, followed by recyclable waste with 33.0m³. Recyclables consisted mainly of aluminium cans and steel cans. A summary for each waste stream and community is provided in **Table 2**.

Table 2: details of waste collection from each participating community

<i>Islands</i>	<i>Community</i>	<i>Recyclables (m³)</i>	<i>Bulky Waste (m³)</i>	<i>Non-recyclable waste (m³)</i>	<i>Total Disaster waste from Community (m³)</i>
<i>Santo</i>	Banban	8.9	17.5	26.1	52.5
	Shokraon	2.4	98.0	35.0	135.4
	Chapuis	14.6	8.0	18.1	40.7
	Solway	3.3	0.5	1.7	5.5
<i>Pentecost</i>	Pangi	3.2	-	0.2	3.4
	Vansemakul	0.2	-	0.2	0.4
	Waterfall	-	-	-	-
<i>Aore</i>	George Lini Plantation	0.2	-	0.2	0.4
<i>Malo</i>	Waisale	0.2	-	0.2	0.4
TOTAL		33.0	124.0	81.7	238.7



Community Disaster Waste Management Plans

Discussion sessions were facilitated with community members (as part of the training session) to commence planning for community disaster waste management plans (CDWMP). Based on these discussions, draft community plans for each of the nine communities were created for ongoing community consultation by DEPC and Municipal Governments.

It was noted that all nine communities have a Community Disaster and Climate Change Committee (CDCCC), and participants agreed that it would be best for sub-committees to be established under the existing committees to take the lead role in coordinating the management of disaster waste and activities under each disaster waste management cycle. The work of the committee would either be coordinated by the chief, community development committee or the youth committee. Other important issues included:

- Requests to access to equipment (such as chainsaws) to assist community members with managing disaster waste in future disasters
- Request for the provision of waste disposal sites/services for communities in Pentecost, Aore and Malo
- Requests for the ongoing awareness and education programs on waste segregation and composting

Additional information from community consultation on the CDWMP is included in **Table 3**.

Table 3: Summary of discussion on the Community Disaster Waste Management Plan

<i>Island</i>	<i>Community</i>	<i>Status of the Community Disaster WM Plan</i>	<i>Summary of discussion on CWMP</i>
Santo	Banban	First draft of the community plan established for finalisation by the PWP PMU	<ul style="list-style-type: none"> • Request to introduce bins in households to store our plastics and recyclables, to avoid them being burned by households. • Request to establish a clean-up committee to oversee the waste management activities in the different areas around Banban. • Community discussed what tools and equipment they would need for disaster waste management and who they can ask for assistance with providing them with tools.

Island

Community

**Status of the
Community Disaster
WM Plan**

Summary of discussion on CWMP

			<ul style="list-style-type: none"> Identify the vulnerable community groups and who will assist them to prepare for future disasters Ongoing support from Sanma Province to provide rubbish collection services.
	Shokraon	First draft of the community plan established for finalisation by the PWP PMU	<ul style="list-style-type: none"> Education on waste segregation, composting and management of non-recyclable waste to prevent mosquitoes breeding. Request to introduce bins in households to store our plastics and recyclables, to avoid them being burned by households. Encourage families to regularly maintain property e.g. pruning trees and using it as firewood. This is also good practice before cyclone season. Request to establish a clean-up committee to oversee the waste management of the 4 areas in Shokraon. Shokraon has a development committee and CDCCC. Request for CDCCC and Shokraon Development Committee to coordinate waste management activities for each of the 4 areas in Shokraon. Identify the vulnerable community groups and who will assist them to prepare for future disasters CDCCC and Development Committee to provide more awareness to all residents on waste management, beginning with introducing empty drums as public rubbish bins Request for LMC to provide training on composting to reduce the ongoing burning of organics Request for Sanma Province to work with LMC and DEPC to identify a temporary site to store disaster waste.
	Chapuis	First draft of the community plan established for finalisation by the PWP PMU	<ul style="list-style-type: none"> Establishment of a clean-up committee to facilitate waste management activities within the 4 zones in Chapuis.
	Solway	First draft of the community plan established for finalisation by the PWP PMU	<ul style="list-style-type: none"> Solway has an active Development Committee. They have a Youth Committee that assists churches and vulnerable community members during events and disasters. The youth are already involved in CDCCC, as well as waste management through local councillors in the Luganville Municipal. Identify the vulnerable community groups and who will assist them to prepare for future disasters The participants recommended that the plan should identify what the community needs to manage disaster waste, but it should be the responsibility of the youth committee to lead the clean-up and assistance to households with waste management.
Pentecost	Pangi	First draft of the community plan established for	<ul style="list-style-type: none"> All participants recognise that improved waste management starts in the home and were very interested in the practical waste presentations provided in Part 1 of the awareness.

Island	Community	Status of the Community Disaster WM Plan	Summary of discussion on CWMP
		finalisation by the PWP PMU	<ul style="list-style-type: none"> Request for tools to manage disaster waste: <ul style="list-style-type: none"> Chainsaw + fuel/oil Wheelie bins Wheelbarrow Knives, axes Ropes to secure houses and waste Chicken wire to secure backyard gardens Woodchipper to help reduce the fallen trees Request for relevant authority to provide metal cages to collect the waste suitable for recycling (e.g. empty bottles, tins etc.)
	Waterfall	First draft of the community plan established for finalisation by the PWP PMU	<ul style="list-style-type: none"> Waste management after disaster: <ul style="list-style-type: none"> All disaster waste is collected Have a community cleanup Rebuild houses – cyclone resistant Tools requested by community to assist with waste management: <ul style="list-style-type: none"> Wheelbarrow Chainsaw Grass cutter Mesh wire to create recycle bin
	Vansemakul	First draft of the community plan established for finalisation by the PWP PMU	<ul style="list-style-type: none"> Chosen temporary disposal site for disaster waste is Melsisi Mission. Tools requested by community to assist with waste management: <ul style="list-style-type: none"> Wheelbarrow Chainsaw Grass cutter Mesh wire to create recycle bin More awareness on how to do poultry and gardening The community is interested in shipping of metals to Santo, but now their focus is rebuilding their homes and rebuilding the Melsisi Mission.
Aore	George Lini Plantation	First draft of the community plan established for finalisation by the PWP PMU	<ul style="list-style-type: none"> The community is already practicing the waste management hierarchy of reusing and recycling. They have asked assistance to improve how they dispose of waste. The residents have these resources available for managing waste on Aore: <ul style="list-style-type: none"> Land Machinery (bulldozer, trucks) Chainsaw Mobile sawmill (to mill fallen trees) Skilled builders – to renovate schools, churches Boats and vehicles – to transport waste from Aore to Luganville
Malo	Waisale	First draft of the community plan established for finalisation by the PWP PMU	<ul style="list-style-type: none"> Community has requested DEPC to include Malo in their schedule and visit more to see their issues. Community member are practicing waste management and request assistance in applying some practical ways of reducing waste such as creating compost and recycling metals.



Gender Equity and Social Inclusion

Disaster waste management training was facilitated in French and Bislama to ensure that participants understood the content of the training and the objectives of the project. Training facilitators placed participants in groups they were most comfortable in to allow for open discussions and ensure that participants are given a chance to raise their opinion. For example, a youth may be comfortable sharing ideas among peers, or a mother breastfeeding her child was more comfortable to join group discussions among other women.

It was noted that some participants faced difficulty in filling the registration form provided at the training and the training facilitators provided explanation and assistance in the filling of the form.

The invitation to the training was extended to all members of the community but the turnout was greatly impacted by commitments to provide for family needs such as preparation for market days. A total of 202 participants from across the nine communities were part of the Disaster Waste Management Training 42% of participants were women.

It was commented that many female members of the communities were not able to attend afternoon training sessions as they were doing household duties and it is recommended that future trainings be considerate of this to allow more women participation.

A high turnout was recorded for those in age category of 18 to 28 years with a majority of male. Those in the 29 to 39 age category recorded equal participation of male and female. Some participants chose not to disclose their age while those with disabilities that were also part of the training chose not to fill in the registration form and as a result the project was not able to effectively capture this information.

Details of age categories is included in **Figure 1**.

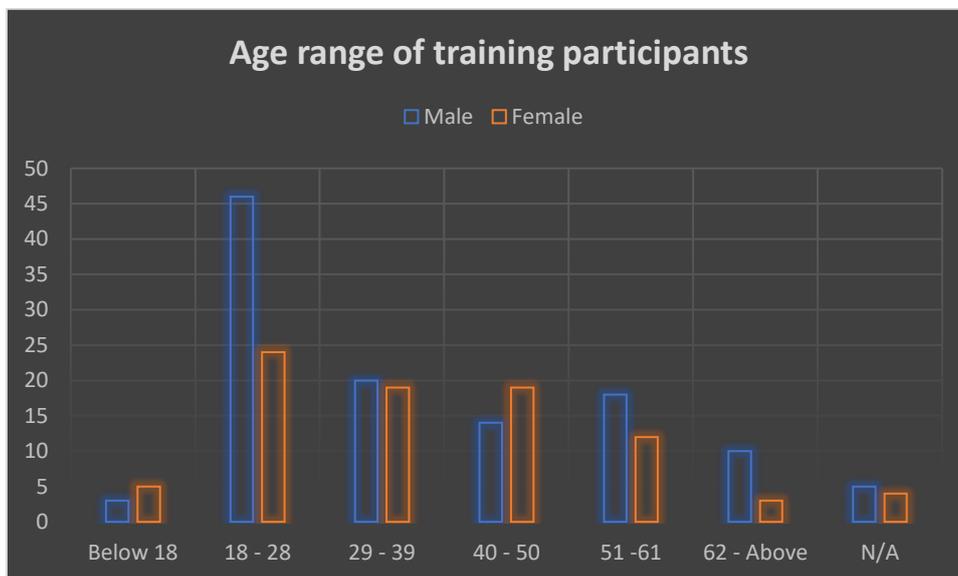


Figure 1: Disaggregated age data for training participants

Of the 106 volunteers that received training on safe waste handling and waste assessment, 35% were female. It is envisaged that these trained individuals can assist DEPC in conducting disaster waste assessments in the future.

Participants chose not to complete the evaluation form, so facilitators conducted the evaluation through video interviews. Summary of these interviews is included in the Community Evaluation section of this report.



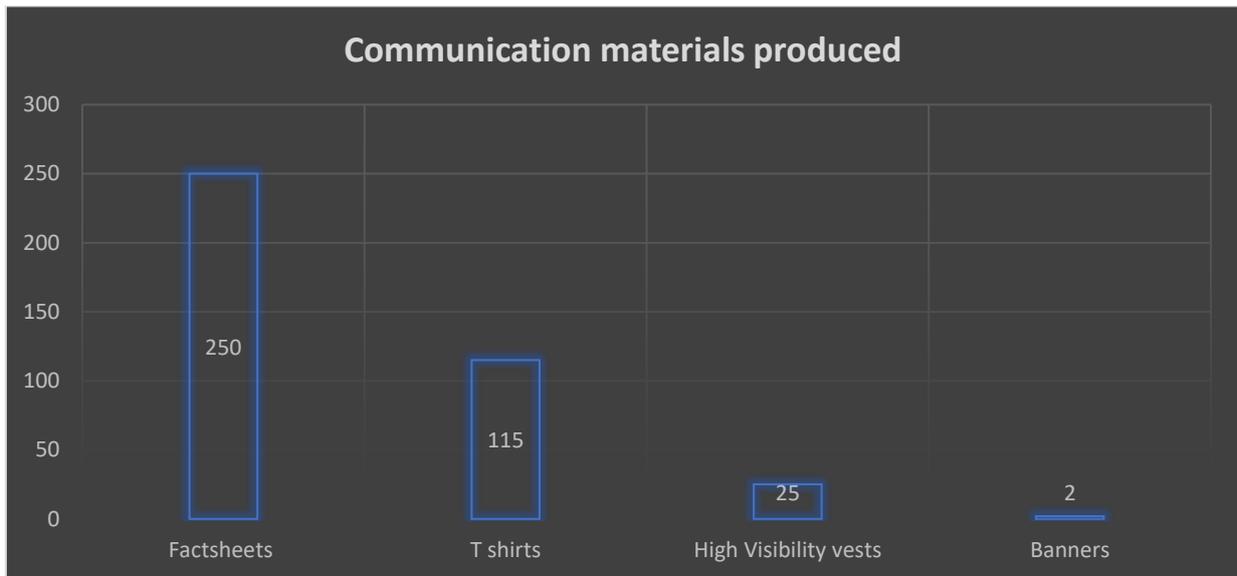


Figure 2: Details of communications interventions utilised during the project



Project Evaluation

Community Evaluation

Participants chose not to complete an evaluation form, so the project team conducted interviews with participants to capture their thoughts and enable an evaluation of the activities. The following were highlighted from participants:

- The factsheets provided by the project will assist community members in managing disaster waste
- The community understood the relationship between improper waste management and outbreak of disease such as dengue and malaria
- Participants realised that some waste can be recycled, composted or reused
- The community recognised the need to work together to better prepare for future disasters
- The community recognised the benefit of waste segregation in maintaining a clean and healthy community
- The community recognised the need to improve daily waste management in preparation for future disasters.

A summary of the interviews is included below.

Summary of community interviews



Feedback on community sessions

Mr Donald Tavakalo

"I learnt a lot of good things, especially about waste management during the cyclone season or any disasters. Another good thing I learnt from the training was how we should manage waste in our community. I know now how to deal with items such as empty tins, empty bags and iron roofing that can fly around during a disaster. These are a few things that we went through during the training today."

Feedback on clean-up activity

"We took these forms as we went around each yard. We weighed the amount of waste that was placed outside each yard. For some rubbish, we estimated the volume based on the size of the rubbish bags. We separated the metals and recyclables at each yard, so that they can be collected and recycled separately. We noted the amount of the different rubbish on our forms. We recorded the amount of the items that will be recycled, and we placed them in plastic bags for collection. Sometimes we worked in the rain, so volunteers should be provided raincoats or umbrellas. You will notice that we handle a lot of the bulky metals that can cause accidents. Helmets are important for protection and gloves so that volunteers can pick up rubbish."

Mrs Christina Woleg



Feedback on community sessions

“This workshop and training on waste management has been very valuable and it links with our tourism project. We have received waste management training in the past as part of our tourism projects. Knowing how to manage waste helps our community work together to safeguard the waste that we accumulate. We can separate waste for reuse or disposal.”

Mr Sandy Sur

Feedback on clean-up activity

“Today I was one of the volunteers that picked up rubbish. We collected tins, plastics and iron roofing. I was interested to become a volunteer because I got to help clean up our area and save our environment. I am willing to volunteer again for these programs. I only ask if you can provide safety gear like hand gloves, shoes and hats. These are things that will keep us safe and clean.”

Ms Lina Jimmy



Feedback on community sessions

“You will notice that in every yard there is still a lot of rubbish. There is still waste like this around in every yard. It shows that after the cyclone, we try to clean up but there is still a lot of waste lying around. We thank the DEPC through this project for recognising this need in our community. We are trying to keep the environment neat and clean so that in future, it will be better than how it is right now.”

Mr Antonio Buroro

Feedback on clean-up activity

“I’m happy to see that people are cleaning their yards all around the area. We went around earlier to each household providing awareness and handing out plastic bags. They have all responded by putting the rubbish into the bags and placing them along the road. Next time we need to tell people to separate their rubbish properly. Keep the plastics separate from the bottles and so on. So that when we do the rubbish collection, we can deliver them to the right places.”

Mrs Betty Bani



Feedback on community sessions

“In the past, we were throwing everything out, but there are plenty of items that we can make money from. From the awareness that we attended, we now recognise the value in rubbish and how you can earn money by managing it. So now we understand how to manage waste better so that in the next disaster next time, we can also create an income from waste.”

Mr Jayven Gawa

Feedback on clean-up activity

“Today the youth from Solway collected rubbish in our area and took it to the Luganville Dump. I did not like what I saw at the Dump and I noticed that there is no more space to dump rubbish there. It is better for us to learn how to manage our household waste. We should reuse empty tin cans and bags for planting - planting flowers or cabbage. The work that we did today was good. The youth volunteers here at Solway are very active no matter what program we take part in.”

Ms Serah Tekak



Feedback on community sessions

“I’m glad to be part of the training. I learnt that we should not throw all the household waste out, but we can separate some items and also keep the rubbish in a safe place.”

Mrs Steline Mali

“I feel like I am now able to take this training and apply it in my home, and within Pangli village”

Ms Kathy Tate

Feedback on clean-up activity

“For our activity, we went through the village to collect plastics and metal cans and we placed them into separate rubbish bags. We tied the rubbish bags and stored them in a shelter ready for the next boat to arrive so we can ship them to Santo.”

Mrs Steline Mali

“Our group collected plastics – empty plastic wrappers, juice bottles and bottled water – and put them together into rubbish bags.”

Ms Kathy Tate



Feedback on community sessions

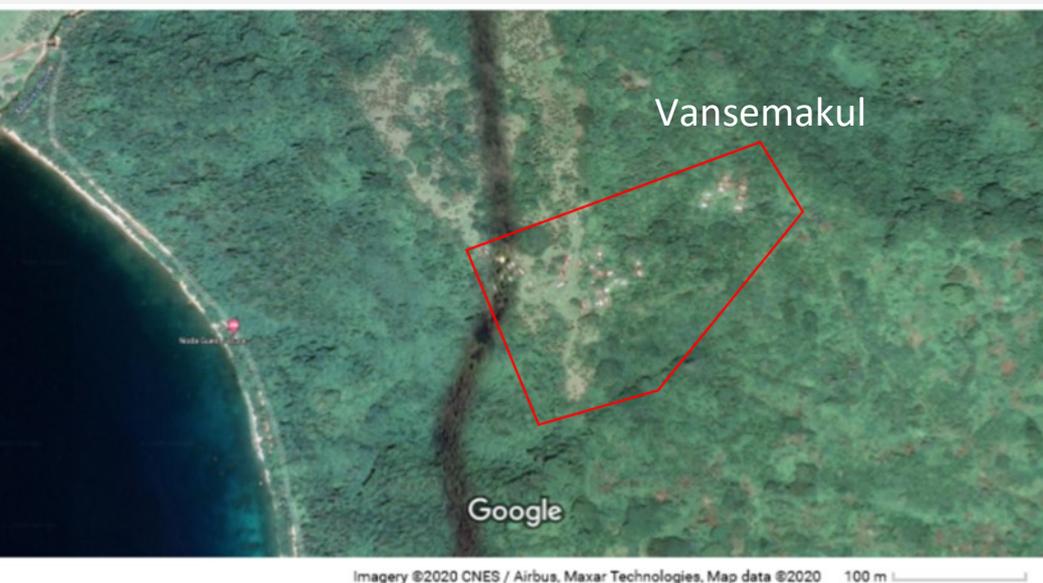
“I am glad that we have addressed the disaster waste in our village that we have been disposing all over the place. People see our village as a beautiful village, but we are not careful with storing our waste safely. I have learnt new things from this training session. At my home, I will separate our household rubbish and put them in a proper place. I am interested in using organic waste for home gardening and composting.”

Mrs Jessie Mabon

Feedback on clean-up activity

“After the cyclone, we were left with so much rubbish and it took a lot of effort to clean up the village. We are fortunate that there is a local building company based here with us. We plan to hire them to dig three large pits at the back of the village for the community to separate and dispose waste.”

Chief Isaiah Tabi



Feedback on community sessions

“We already practice waste management in our village, but this training on disaster waste management shows us that we need to do more, especially with where we dispose our disaster waste.”

Mr Didier Tadou

Feedback on clean-up activity

“I am very grateful to receive the training that has been presented as it will really help us a lot.”

Mrs Marie-Michaela Tadou



Feedback on community sessions

“It is good for us to use waste management to keep our environment clean and safe all the time so that future generations can enjoy it too.”

Chief George Lini

Feedback on clean-up activity

“After the cyclone, we didn’t know how to manage the rubbish because everything around us was a mess. But after this training session, I realise how important it is to not just clean up after the cyclone but to also separate rubbish.”

Mr James Abel



Feedback on community sessions

“The impact of Tropical Cyclone Harold has been huge for us on Malo because we rely on the environment for our livelihood. We try to make use of the organic disaster waste to earn a little income. With our fallen trees, we have cut them into building posts and sewn the leaves for thatch roofing. We send these materials across to Santo and sell them to earn income to support us.”

Mr Pako Tamata

Feedback on clean-up activity

“There was so much rubbish created from Tropical Cyclone Harold, so I decided to dig a pit to bury them. When the pit was full and I buried it, I then decided to burn all the remaining plastic rubbish. But I realised that burning creates more rubbish that gets blown around. So, I have decided in future to continue burying our household waste and no longer burn it.”

Mr John Jarawari

Project Team Evaluation

An assessment was undertaken by the project team to determine the achievement of objectives and the result of this project. DEPC, with assistance from J-PRISM II, is finalising the National Disaster Waste Management Contingency Plan with the NDMO. There is an opportunity to integrate the J-PRISM II work on the Contingency Plan with a follow up training on Community Disaster Waste Management. For community follow up trainings, the following actions are proposed for consideration of DEPC to achieve maximum benefits:

- i. Confirmation of attendance to be obtained and finalised prior to facilitating community training to ensure that notification is received by the targeted communities. Even though the Area Administrators for South Pentecost, Malo and Aore were notified of trainings and activities, they did not extend the invitation to many communities in their respective jurisdictions.
- ii. Future community trainings are to be scheduled at a suitable time when community members are free to attend. It was noted from the training facilitated by the project team that some community members were not able to attend due to family commitment and market day preparation.
- iii. Future community trainings are planned in consultation with other government ministries. This consultation will allow the planning committee to determine suitable time to facilitate trainings and ensure maximum participation from local communities. While the project team was in Pentecost, it was noted that there were other trainings conducted by NDMO, Fisheries Department and Agriculture Department. This resulted in a low turnout recorded for community training in Pentecost.
- iv. Provincial Area Administrators, Area Secretaries and Area Councillors to participate in future community consultation. The project team believes the presence of these officials is critical in providing input into the content of the community disaster waste management plan. Comments were raised from community members on the role of these councils in the management of disaster waste from future disaster.

Disaster Waste is one of the targeted waste streams for PacWastePlus and it is envisaged that similar project will be implemented in other countries. The following actions are highlighted for consideration by the programme management unit in designing future projects:

- i. Ensure that relevant provincial council and local municipal council are consulted on the design of the project plan to ensure continuity of on-ground action.
- ii. Materials for future training be translated in local languages that is understood by participants. Training participants were appreciative to the officers from DECP and LMC facilitating the training in Bislama. This was critical in ensuring that the message was received by all participants.
- iii. Registration forms should be shorter and easier to populate. Many participants requested assistance to fill in the forms, which took up training time made it difficult for those with poor literacy to participate.
- iv. While the project team noted that the evaluation is a critical component of the training, future evaluation methodology to consider innovative methods such as interview that is recorded and not only through forms. Participants were reluctant to write down comments on evaluation forms. With consent from participants, evaluation and feedback of community sessions and discussions were recorded on video.
- v. Project administration planning to consider Internet coverage at the training location while project plan is being designed. Internet access was poor or inaccessible in some communities visited on South Pentecost. This hindered the ability of the PWP officer to provide daily updates to the PWP Team and submit report templates e.g. The project team waited until returning to Luganville to upload reports and documents for Pentecost.
- vi. Flyers and any awareness materials to be distributed prior to implementation of the project activities. Community noticeboards at schools, marketplaces and public meeting places are still the preferred information source in rural areas. Printing awareness posters and placing them on community notice boards to inform communities of trainings was effective on Pentecost.

The project team felt while the objectives of the project was achieved, the important lessons learned from the implementation of this project would assist in improving the coverage and capacity of local communities of future projects.

Discussion & Recommendations

A common request from all nine communities was to improve waste management systems in outer islands. The project team noted a desire from the community to receive awareness and education programmes on waste management and the benefits effective systems can provide on a day-to-day basis, as well as in preparation and response to disaster events.

The following issues are recommended for consideration in implementation of future projects:

- a) Any future response works be coordinated by relevant government departments to ensure that assistance provided through various donor agencies are not duplicated and the benefits are maximised for the communities. Coordination would assist with a timely and effective response being delivered (noting that this project was deployed five months following Tropical Cyclone Harold and as a result community in the outer islands had either burnt or buried disaster wastes generated from the cyclone).
- b) Evaluation forms may not work in rural communities due to language barriers and it is recommended that alternative evaluation methods be introduced (such as video interviews)
- c) Community training to be facilitated at a time that all community members are free to attend, or several sessions should be offered to ensure all community members have the opportunity to participate
- d) Translation of training materials should be done into the local dialect, to ensure that participants understand the content of the training.

The following issues were identified by community members for consideration by relevant government departments:

- a) Ongoing need for awareness and education on waste segregation, organic waste composting and recycling.
- b) Establishment of public private partnership with local companies to install waste collection bins/ cages for recyclables at boat landings or urban centres to allow for recyclables drop off by outer island communities.
- c) Request for government assistance to have waste and recyclables taken from the outer islands to be effectively managed in Santo or Efate.
- d) A feasibility study to determine the most appropriate solid waste disposal methods in outer island communities to help minimise or eliminate the future impact of disaster waste.
- e) Introduction of community beautification competition programmes to encourage composting of organic waste and recycling initiatives in outer islands.
- f) Establishment of community support programme for the supply of Personal Protective Equipment and tools to support outer islands in the safe handling of wastes.



Appendix 1: Visibility and Communications

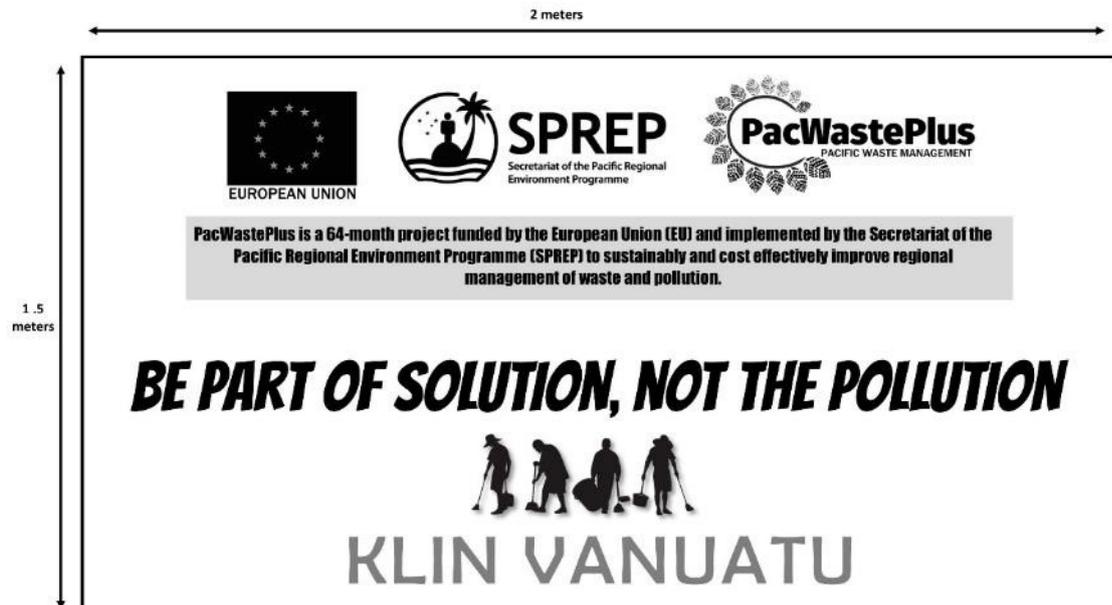
Volunteer High Visibility Jackets-A total of 40 High Visibility Safety jackets were procured and messaged with PacWastePlus branding and DEPC approved community message.



Community T-shirts – A total of **150 t-shirts** were produced for **community distribution** after Community Awareness sessions were concluded.



Waste Collection Truck/Community Awareness Banner





Participants Registration Form

TROPICAL CYCLONE HAROLD RECOVERY COMMUNITY OUTREACH

7 September - 25 September 2020, Vanuatu

Should you have any additional clarification please contact: sainimilib@sprep.org or michaelt@sprep.org					
Personal Information	Title (Mr/Mrs/Ms/Dr)		First Name		Family Name
	Nationality			Age/Date of Birth	
	Gender	Female <input type="checkbox"/>	Male <input type="checkbox"/>	Gender Neutral <input type="checkbox"/>	
	Marital Status	Married <input type="checkbox"/>	Single <input type="checkbox"/>	Prefer not to say <input type="checkbox"/>	
	Country of Birth				
Professional Information	Employment	Employed <input type="checkbox"/>	Unemployed <input type="checkbox"/>	Student <input type="checkbox"/>	
	Job Title (If employed)				
	Organisation				
	City		Town/Community		
	Email				
	Telephone (Inc. Country Code)				Mobile Telephone
Data Protection	Once you have provided us with your data, we may retain some of it because, we would be keen to work with communities for future events, therefore we are interested in retaining some data to maintain our records and accounts.				
	We may, on occasion, provide your name and contact details to Government Departments of SPREP member Countries and our Funding Agency (EU). Please confirm your consent to this information being shared <input type="checkbox"/> Yes, I am happy for my details to be shared <input type="checkbox"/> No, I would prefer you <u>didn't</u> share my details				
	We will give access to a Contact List to all Volunteers and Members of the Community at the event so that you can keep in contact with people you have met. Please confirm whether you agree to your contact information being shared with the participants at the event. <input type="checkbox"/> Yes, I am happy for my details to be shared <input type="checkbox"/> No, I would prefer you <u>didn't</u> share my details				
	We will be taking photographs of participants during the event. These images may also be used for reporting and promotion purposes. Please confirm whether you agree to being identified in the photographs <input type="checkbox"/> Yes, I am happy to be identified in the photograph <input type="checkbox"/> No, I do not want to be identified in the photograph				
Confirmation of Agreement	Signature			Date	

Parent or Guardian:

Date:

Photo Consent/Permission form

Date:

To whom it may concern,

This letter gives my approval for the image of my child/children (please list names below) to be taken, and thus used by SPREP for non-commercial, educational awareness purposes only.

Signature:

Name of parent/guardian: *(please underline or circle if you are a parent or guardian)*

Name/s of child or children to be listed below: *(if more than one in the photo)*



SPREP
Secretariat of the Pacific Regional
Environment Programme



PacWastePlus is a 64-month project funded by the European Union (EU) and implemented by the Secretariat of the Pacific Regional Environment Programme (SPREP) to sustainably and cost effectively improve regional management of waste and pollution.

Do you know how to safely collect waste that is left behind after a disaster like a cyclone or a flood?

Did you know that as a community you can plan ahead of a cyclone or a flood to minimise the waste that may be created?

Do you know how to safely separate waste that may harm your health and community environment?

Did you know that you can reuse waste that is left behind after a disaster?

Come and join us for a community training to learn how to better manage Disaster Waste.

Where: Pangji, South Pentecost, Thursday 17 - Friday 18 September

Melsisi, Central Pentecost, Monday 21 - Tuesday 22 September

Time: 8.30am - 10.30am



***BE PART OF THE SOLUTION, NOT
THE POLLUTION***

KLIN VANUATU



PacWastePlus is a 64-month project funded by the European Union (EU) and implemented by the Secretariat of the Pacific Regional Environment Programme (SPREP) to sustainably and cost effectively improve regional management of waste and pollution.

Yu intres blo lanem stret fasin hao blo manajem toti afta lo wan disasta olsem saeklon o flad?

Yu intres blo lanem sef wei blo separetem toti blo bae ino spoilem helt blo famli, komuniti mo envaeromen blo yu?

Kam joinem wan fri komuniti trening mo lanem stret fasin hao blo manajem toti tru lo disasta waste manejemen.

Where: Pangji, South Pentecost, Thursday 17 - Friday 18 September

Melsisi, Central Pentecost, Monday 21 - Tuesday 22 September

Time: 8.30am - 10.30am



***BE PART OF THE SOLUTION, NOT
THE POLLUTION***

KLIN VANUATU

Community Awareness Factsheet - [Managing Disaster Waste: A Guide for Communities](#)

FACTSHEET
Managing Disaster Waste:
A Guide for Communities
 August 2020

Natural disasters, such as tropical cyclones, hurricanes and floods, can generate large quantities of waste, including building debris, fallen trees, and hazardous waste. Disaster waste is a threat to community health, safety, and the environment. However, it is often managed in an ad hoc manner and can be a major obstacle to the much needed emergency relief operations and hence delay to humanitarian efforts by blocking access to affected communities. This community factsheet is a basic guide for the safe handling and management of waste generated from natural disasters.

What is Disaster Waste?

All waste generated following a natural disaster such as tropical cyclones. These may include:

- Household waste (general household and personal belongings scattered during a disaster)
- Construction debris (building materials (which may include asbestos-containing materials), gravel, timber, roofing iron, furniture, mattresses, plumbing)
- Organic debris (tree branches, shrubs, logs and leaves)
- Hazardous waste (oil, pesticides, paints, cleaning agents)
- Electronic waste (computers, televisions, printers, cameras, DVD players, telephones, refrigerators, freezers, washing machines, stoves, water heaters, air cond. units)
- Recyclable waste (aluminium cans, drums, plastic bottles and roofing iron)

What does the Management of Disaster Debris involve?

Effective management of debris following a disaster can be difficult but is necessary. Activities a community may undertake include:

- assessing the amount of debris
- assessing debris management options
- separating debris into different materials and waste streams
- identifying waste management facilities, facilities and their available capacities
- collecting and moving debris
- removing debris from roads, blocking roads and creating hazards
- identifying hazardous waste for special management
- preparing and loading debris for transport and transferring debris to management sites and facilities

All this on a daily and long term. All the tasks the above and related tasks can be effectively done. The faster the community can return to normal operations. Moreover, not doing it takes to minimize, reduce the height, the risk of the injury and health risks to the community and the environment.

Why is it Important to Remove Disaster Waste?

Disaster waste poses a health risk to the community. It can be a major obstacle to the much needed emergency relief operations and hence delay to humanitarian efforts by blocking access to affected communities. This community factsheet is a basic guide for the safe handling and management of waste generated from natural disasters.

SAFETY FIRST

Before Collecting & Sorting Disaster Waste

Gear check
 Equip workers with safety equipment which may include hard hats, safety vests, safety glasses, heavy work gloves and standard safety boots.

Talk it out
 Hold a pre-work meeting to clearly communicate safety strategies to everyone involved.

Promote good hygiene
 Encourage workers to wash hands and face before eating and at the end of shift. Use the provided separate toilet facilities and hand or shower water.

During Waste Collection & Sorting

- Avoid overfilling of garbage bags – always fill 1/3 of the bag and ensure the bag does not get too heavy (no more than 10kg per bag).
- Minimise turning from side to side when lifting wastes.
- Always hold the bag at the top.
- Do not hold bag close to your body. Hold bags at arm's length.
- Ask for assistance from the supervisors when you come across hazardous waste.
- Bulky waste such as compacted iron and metals are to be handled by 2 people.
- When handling sharp or heavy objects, use heavy duty gloves and not disposable gloves – talk to designated supervisors for this.
- Never lift heavy bags on your own during loading of waste. Ask for help.
- Take regular breaks and stay hydrated.

DO Use safety equipment for handling of debris, such as safety glasses and heavy work gloves. Do not touch debris with your hands. Do not touch debris with your face. Do not touch debris with your mouth. Do not touch debris with your eyes. Do not touch debris with your nose. Do not touch debris with your ears. Do not touch debris with your skin. Do not touch debris with your hair. Do not touch debris with your feet. Do not touch debris with your hands. Do not touch debris with your face. Do not touch debris with your mouth. Do not touch debris with your eyes. Do not touch debris with your nose. Do not touch debris with your ears. Do not touch debris with your skin. Do not touch debris with your hair. Do not touch debris with your feet.

DON'T Do not touch debris with your hands. Do not touch debris with your face. Do not touch debris with your mouth. Do not touch debris with your eyes. Do not touch debris with your nose. Do not touch debris with your ears. Do not touch debris with your skin. Do not touch debris with your hair. Do not touch debris with your feet.

Environmental & Health Impacts of Disaster Waste on Communities

The effect of disaster waste on the Environment and our Health when not managed effectively:

- Bad smell from rubbish piles over a long period of time.
- Waste burnt produces chemical that pollutes the atmosphere and releases chemicals that harm the human health.
- Increase of waste in our surroundings. Piles of waste on the roads will not be quickly removed can delay emergency lifesaving operations.
- Pollution of the environment from oil and chemicals. Swimming in or eating food sourced from these polluted waters can also impact human health.
- Hazardous waste such as e-waste has potential to contaminate the local environment. Metal and sharp objects can cause injuries to people especially children who are not identified and managed quickly.
- Contamination of food sources. Contaminated food which is not removed may be consumed and affect community health. Cereals if not identified and managed, either can potentially result in vector borne disease.

Disaster Waste Management Plan

Outlines appropriate pre-disaster preparedness activities and timely post-disaster activities after a disaster strikes.

The Plan will:

- Identify** activities to be carried out before and after a disaster to ensure that waste generated following these events are effectively managed.
- Prioritize** Management of hazardous and difficult waste.
- Identify** The disposal process for different types of waste generated following a disaster.
- Identify** Roles of different community members in the assessment, collection, storage and safe disposal of disaster waste.

Benefits of Having a Community Disaster Waste Plan

- Protects the capacity of a community vulnerable to impact by reducing or changing in order to specify and maintain an acceptable level of functionality and structure.
- Disaster can cause disruption to community systems and having a plan minimise the impact of this disruption.

Actions that you can do to prepare before a natural disaster strikes:

- Avoid "difficult to handle" wastes. Use plastic bottles from washing the community, other our shopping for your family and avoid these items as much as possible.
- Ensure that all daily wastes are stored in a dumpster that is safe and far from the community. This will prevent rubbish being discharged into roads and causing a problem.
- Form local groups made up of community members and assign tasks under each Disaster Waste management cycle.
- Trim tree branches and make sure the cuttings are secure so they won't blow around or washed away to be in public spaces.
- Ensure that any remaining chemicals or hazardous materials are stored in a safe place.
- For those houses to ensure that damaged roofing iron is not blown off during a disaster and secure any loose roofing materials that can be easily blown off during a disaster.

After a disaster passes, communities should:

- Assess the damage on the ground.
- Assess the type of waste and estimate volume of Disaster Waste generated.
- Determine what can be stored in the community.
- Creation of compact piles for all organic wastes and moving organic waste to the designated composting sites.
- Clean up all tree branches that can be used for firewood etc.
- Safe collection of different types of disaster waste, and sorting them for easier collection.
- Cutting of wood stems.
- Safe temporary storage of bulky and hazardous wastes for removal by government.



This initiative is supported by **PacWastePlus**-a 64-month project funded by the European Union (EU) and implemented by the Secretariat of the Pacific Regional Environment Programme (SPREP) to **sustainably and cost effectively improve regional management of waste and pollution.**

Tropical Cyclone Harold Recovery Volunteer & Community Video Interview Questions

Volunteers

1. Please state your name and which community you are from in Vanuatu
2. What motivated you to volunteer for this clean-up initiative?
3. Why do you think it is important to safely remove disaster waste from the community urgently?
4. Can you share what was the most interesting highlight of your volunteering experience.
5. Has this experience prepared you to be more responsive (built your capacity) to deal with future disasters and the waste generated from it?
6. How will you encourage other members of the community or your friends and family to deal with disaster waste?

For Community Members (post Community Awareness)

1. Please state your name and which community you are from in Vanuatu
2. Did you find the community awareness on Disaster Waste Management useful?
3. Why do you think it is important to safely remove disaster waste from the community urgently?
4. Has this experience prepared you to be more responsive (built your capacity) to deal with future disasters and the waste generated from it?
5. How will you encourage other members of the community or your friends and family to deal with disaster waste?

Note:

- ✓ Please ensure that a **minimum of 10 volunteers** are interviewed in **English**. If they feel comfortable speaking in Bislama conduct the interview but an interpretation will be required so the video can be edited with sub-titles.
- ✓ Ideally the video should be between 2 minutes (minimum) to 5 minutes (maximum).
- ✓ Please ensure we have consent from both volunteers and community members. Avoid interviewing anyone under the age of 18.

Tips:

- ✓ Please ensure if the interview is done out in the field, a quieter place is chosen as the location (to reduce ambient noise), preferably with waste collected background somewhere behind the interviewee.
- ✓ Ensure that the camera is not facing the sunlight while conducting the interview as the recording will be significantly dark. You may also opt to conduct the interview indoors as well if need be. Do your best to get your footage in the morning or evening, when the light is softer.
- ✓ Ensure that the interviewee is not too far from the camera as the voice recording maybe not of the quality required.
- ✓ Avoid shaky hands and if you happen to have a tripod please do use it. Alternatively, you could place the camera on a table on top of a few things like books etc to avoid a shaky recording.
- ✓ If for some reason your camera is giving issues, please use your phone camera in horizontal mode and ensure that recording settings are set at a high resolution.



Objective

1. Learn about disaster waste
2. Know the need to manage disaster waste
3. Know how to differentiate types of disaster waste
4. Determine how best to reuse disaster waste
5. Designate areas for waste storage
6. Know how to safely collect and store disaster waste



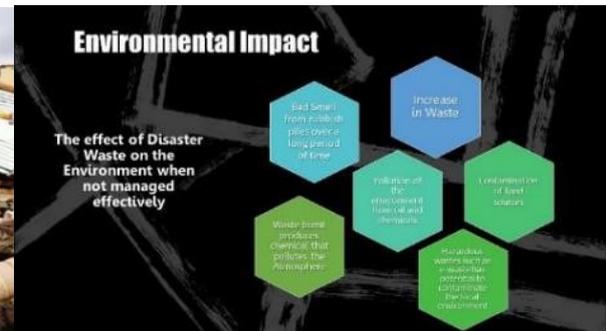
What is Disaster Waste?

All waste generated following a natural disaster such as tropical systems. These may include:

- **House waste** – general household trash and personal belongings.
- **Construction and demolition debris** – building materials (which may include asbestos-containing materials, drywall, timbers, roofing, iron, furniture, multi-res, plumbing).
- **Organic debris** – trees, branches, shrubs, and logs.
- **Household/hazardous waste** – oil, pesticides, paints, cleaning agents.
- **White goods** – refrigerators, freezers, washers, dryers, stoves, water heaters, air conditioners.
- **Electronic waste** – computers, tablets/sms, printers, radios, DVD players, telephones.
- **Recyclable waste** – aluminium and tin cans, plastic bottles, batteries.

Ask question and obtain feedback:

Given your experience with past cyclone what do you think are the Health and Environment Issues?



Health Impact: The effect of disaster waste when not managed effectively

- Burning of Waste** produces chemicals that harm human health
- Metal and sharp objects** can cause injuries to people, especially children when not identified and managed quickly
- Piles of waste** on the roads when not quickly removed can delay emergency/lifesaving operations.
- Carcasses** if not identified and managed earlier can potentially result in vector-borne disease
- Contaminated food** when not removed may be consumed and affect community health

Disaster Waste Management Plan

outlines appropriate pre-disaster preparedness activities and timely post-disaster activities after a disaster strikes.

The Plan should:



Benefits of Having a Community Disaster Waste Plan

- Increase the Capacity of a community vulnerable to hazards to adapt by resisting or changing in order to reach and maintain an acceptable level of functionality and structure.
- Disaster can cause disruption to community systems and having a plan minimise the impact of that disruption.

Prevention & Mitigation

- Some of the key activities that communities can do at this stage includes:
 - ✓ Avoid "difficult to handle" wastes like plastic bottles from entering the community. When out shopping for your family try and avoid these items as much as possible.
 - ✓ Ensure household wastes that must be landfilled is disposed of in the government approved waste management facility to prevent this waste from polluting your community and local environment



Preparedness

Activities that communities may choose to undertake are:

1. Establish local plan clearly identifying activities to be undertaken before and after a disaster. The Community Disaster & Climate Change committee or any other nominated committee will be responsible for the implementation of this plan.
2. Ensure that hazardous and recyclable wastes are removed from communities by forming partnership with Department Environmental Protection and Conservation (DEPC) and Provincial Councils.
3. Disaster committee to work with the DEPC on designating disposal and temporary disposal sites for all disaster wastes.
4. Form local groups made up of community members and assign tasks under each disaster waste management cycle.
5. Facilitate re-fresher discussions/trainings within the community on assessment, collection and disposal of disaster waste as highlighted in the disaster waste management plan.

Early Warning (within Hours/days of a disaster striking)

- Trimming of tree branch and make sure the cuttings are secure, so they won't get blown around or washed away to be an issue elsewhere.
- Ensure that any remaining chemicals or hazardous materials are stored in a safe place
- Tie down houses to ensure that corrugated iron roofs etc. are not blown off and secure any items around your houses that can be easily blown off during a disaster



Emergency Response

- Assess the damage on the ground
- Determine what can be reused in the community
- Creation of compost piles for all organic wastes and moving organic waste to the designated composting sites
- Chop up all tree branches that can be used for firewood etc.
- Committee to submit report to visiting first responders from the National Disaster Office

Recovery

- Collection of different types of disaster waste
- Removal of recyclable wastes by recycling companies
- Cutting of wood waste
- Storage of bulky and hazardous wastes for removal by government.

*** we are currently in recovery phase**



WASTE COLLECTION & SORTING: what are we doing?



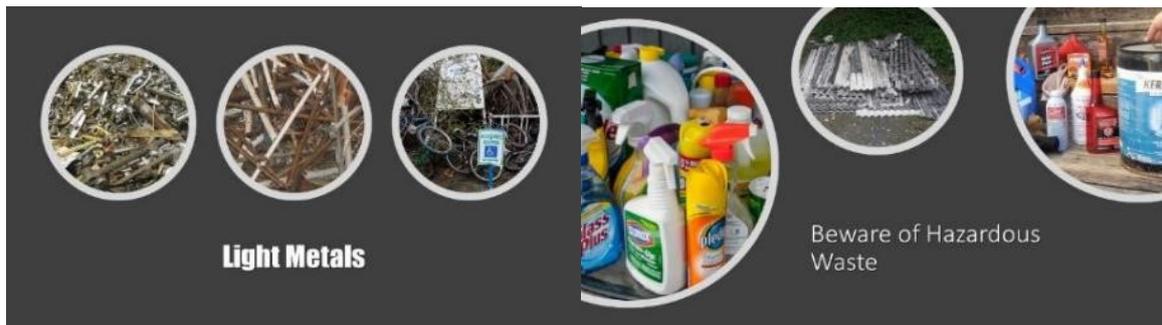
What Wastes are we Collecting

How to differentiate wastes?



Recyclables

Construction Wastes



Documenting what is collected by your group

Each Group are to record:

1. Type of waste being collected
2. Number of bags filled
3. The weight of all the waste collected
4. Disposal methods for all waste collected (Collected/Safely stored/ composted etc)

SAFETY FIRST
Before Collecting & Sorting Disaster Waste

Gear check
Equip workers with safety equipment, which may include hard hats, safety vests, safety glasses, heavy work gloves and steel-toed safety boots.

Talk it out
Hold a pre-plan meeting to clearly communicate safety strategy to everyone involved.

Promote good hygiene
Encourage workers to wash hands and face before eating and at the end of shift due to potential exposure to toxic chemicals and human or animal waste.

During Waste Collection & Sorting

1. Avoid overfilling of garbage bags – always fill 1/2 of the bag and ensure the bag does not get too heavy (no more than 10kg per bag)
2. Minimise turning from side to side when lifting wastes
3. Always hold the bag at the top
4. Do not hold bag close to your body. Hold bags at arm's length
5. Ask for assistance from the supervisors when you come across hazardous waste
6. Bulky waste such as corrugated iron and metals are to be handled by 2 people
7. When handling sharp or heavy objects, use heavy duty gloves and not disposable gloves – talk to designated supervisors for this
8. Never lift heavy bags on your own during loading of waste – ask for help
9. Take regular breaks and stay hydrated.

Thank you for allowing us to come to your community and talk to you about Disaster Waste and agreeing to take part in the cleanup to help keep Vanuatu Clean!

We are happy to answer any additional questions or concerns

Photo and Videos

A number of on ground action photos were captured documenting the recovery works and as well as video interviews involving members of the community that underwent training and feedback from volunteers.

As volunteers and community members were more comfortable with speaking in Bislama during the interviews, videos are currently being translated with English subtitles added to it and will be made available on the PacWastePlus website - <https://www.sprep.org/pacwaste-plus>

Tropical Cyclone Harold – Request for Response Assistance

The World Risk Index systematically considers a country's vulnerability and its exposure to natural hazards to determine a ranking of countries around the world based on their natural disaster risk. According to the World Risk Index, Vanuatu is considered as one of the most vulnerable countries, with very high chance of a disaster occurring.

Tropical Cyclone Harold first hit Solomon Islands with a Category 1 rating on 2-3 April 2020, before progressing to Vanuatu on 5 April, where it escalated to a Category 5. In Vanuatu, more than 159,000 people were affected by the cyclone. The northern islands were worst hit, including the main town of Luganville, Espiritu Santo.

PacWastePlus, in collaboration with Vanuatu's Department of Environment Protection and Luganville Municipal Council, deployed a disaster response project on 6th September 2020 to assist with the final clean-up activities of general waste items on the islands of Pentecost, Santo, Malo and Aore.

The project delivered Disaster Management training to local communities on appropriate pre-disaster preparedness measures and timely post-disaster responses for any future disaster. As well as providing assistance, resources and direction to these communities to undertake clean-up activities in and around their local areas.

PacWastePlus staff, along with Officers from the Vanuatu Department of Environmental Protection & Conservation, and each community's Disaster and Climate Change Committee, to establish a community Disaster Waste Management Plan to guide the disaster preparedness measures and timely post-disaster responses for any future natural disaster.





CPT. ELWOOD MEMORIAL

RENOVATED BY CCECC

"YUMI 40 SELEBRES"



PacWastePlus is a 64-month project funded by the European Union (EU) and implemented by the Secretariat of the Pacific Regional Environment Programme (SPREP) to sustainably and cost effectively improve regional management of waste and pollution.

BE PART OF THE SOLUTION, NOT THE POLLUTION



"KLIN VANUATU"



SPREP
Secretariat of the Pacific Regional
Environment Programme

