# SPREP/SWAP/J-PRISM II/PACWASTEPLUS

## ONLINE WORKSHOP ON DISASTER WASTE MANAGEMENT


# ACTIVITY REPORT

**FEBRUARY 2023**

# Contents

# I. INTRODUCTION

The frequency and intensity of natural disasters, especially tropical cyclones in the Pacific, have increased and when these natural disasters occur, large amounts of waste, known as disaster waste, are generated from damage to both the natural and man-made environment. These natural disasters are a real challenge for all Pacific islands because of the negative environmental, health, economic and social impacts. In addition to the significant risks to property and people directly caused by disasters, these events can generate a significant amount of waste which in turn can impact health, the economy and the environment. Pacific Islands are particularly vulnerable to the impacts of disaster waste as natural disasters such as tropical cyclones are becoming more intense and frequent.

According to the latest data from the World Risk Report 2021, three of the ten countries with the highest risk of disaster in the world are in the Pacific region, with Vanuatu at 1st, Solomon Islands at 2nd place, and Tonga was considered the third most vulnerable country to disasters. A total of six Pacific islands are included in the top 20 countries most at risk from natural disasters.

To discuss how Pacific Islands (such as Samoa, Tonga and Vanuatu) have coped with managing disaster waste through lessons-learnt and experiences, SPREP, through the SWAP (Committing to Sustainable Waste Actions in the Pacific) project in collaboration with the J-PRISM II project and the PacWastePlus Programme, conducted a three and a half-hour virtual workshop on Thursday 8th December 2022.

# II. Concept Note

## 1.1. Objectives

The workshop was designed for the participants to:

- Inform the origins and the impacts of disaster waste;
- Highlight the challenges of Disaster Waste management in the Pacific;
- Learn how to prepare for minimising Disaster Waste generation;
- Inform of opportunities for Pacific Island Countries to manage Disaster Waste; and
- Inform on safe handling and storage of Disaster Waste.

## 1.2. Content

The workshop was structured into three sessions.

- The first session **introduced documents with a regional scope:** the Framework for Resilient Development in the Pacific (FRDP) and the Disaster Waste Management Guideline.
- The second session focused on **national activities in Samoa, Tonga, and Vanuatu**, with presentations on their respective Disaster Waste Management Plans and experiences.
- The third session concluded the workshop with a knowledge-sharing session on how to **strengthen Good Practices in Disaster Waste Management**.
- At the end of each session, there were discussions and participants (panellists and attendees) had an opportunity to ask questions.

## 1.3. Speakers

The speakers were:

1. Framework For Resilient Development (FRDP) In the Pacific: Mr Sione Fulivai - FRDP Coordinator - SPREP
2. Disaster Waste Management Guideline: Mr Faafetai Sagapolutele - Assistant Chief Advisor - JPRISM II;
3. Samoa Disaster Waste Management Plan (DWMP): Mr. Setoa Apo, Principal Solid Waste Management Officer – MNRE;
4. Vanuatu Community Project on Vanuatu's DW response to communities following the Tropical Cyclone Harold in 2020: Ms. Roselyn Bue, Senior Officer, Chemical and Ozone – MCCAMGEEDM;
5. National Action Plan - Tonga: Mr Viliami Tongamana, National Cluster Coordinator, National Emergency Management Office;
6. Lessons learned from Tonga on how they organised a Disaster Waste Management response/clean-up following the tsunami and volcano eruption: Ms. Mafile'o Masi, Chief Environmentalist, MEIDECC;
7. Lessons learned from Tonga on how the disaster waste was managed after the disaster for Asbestos: Ms. Sulieti Pongi Hufanga, PacWastePlus In-country Officer – Tonga;
8. Disaster Waste Management Data Collection Project: Mr. Stalini Naufahu, Manager Special Projects and Information Technology, Waste Authority Ltd (Tonga);

9. Practitioner Guidelines: Ms. Sainimili Bulai, PacWastePlus technical Waste Project Officer – Solid Waste.

# III. Virtual Disaster Waste Management Workshop Logistics and Organisation

## 3.1. Logistics and interpretation services

Since SWAP is a bilingual project involving French Territories and English-speaking countries, the workshop was delivered in English and interpretation was provided to French-speaking participants by OnCall, the SPREP contractor.

To assist the SWAP Project Management Unit, SWAP hired an experience and qualified consultant to handle the logistics of the workshop. Through a Request for Quote, Island Innovation was recruited to provide digital services, including:

- Management of livestreaming event sessions via Zoom Webinar in both English and French; and
- General support related to the management of the event.

## 3.2. Information to participants

Different ways were used to inform participants of the holding of the SPREP/SWAP/J-PRISM II/PACWASTE PLUS Online workshop on Disaster Waste Management:

- A flyer was drafted in French and English for dissemination on social media (Facebook, LinkedIn, etc) – Appendix 1;
- A circular was circulated to all SPREP Focal Points in French and English – Appendix 2;
- A webpage was developed on the SWAP website:
  - English: https://www.sprep.org/disaster-waste-management-workshop
  - French: https://www.sprep.org/atelier-dechets-de-catastrophes-naturelles; and
- An information was posted on the Green Forum: https://thegreenforum.org/post/participants-various-pacific-countries-have-benefitted-virtual-disaster-waste-management

## 3.3. Agenda

| Time | Topic | Purpose of the presentation | Speaker |
|---|---|---|---|
| **1:00pm – 1:05pm** | Introduction | Introduction to the logistical arrangements for the meeting | Island Innovation |
| **1:05pm – 1:08pm** | Overview of the workshop | Sessions and topics<br>Objectives of the workshop | Ms Julie Pillet<br>Technical Waste Project Coordina tor, SWAP |
| **1:08pm – 1:13pm** | Welcome | Opening remarks | Mr Anthony Talouli<br>WMPC, Director |

| Time | Topic | Purpose of the presentation | Speaker |
|---|---|---|---|
| **1:13pm – 1:23pm** | Framework For Resilient Development (FRDP) In the Pacific | Key Principles<br>GOAL 3 - Strengthened disaster preparedness, response and recovery | Mr Sione Fulivai<br>FRDP Coordinator, SPREP |
| **1:23pm – 1:33pm** | Discussion | | Ms Julie Pillet<br>Technical Waste Project Coordinator, SWAP |
| **1:33pm – 1:43pm** | Disaster Waste Management Guideline | DW prevention and mitigation<br>Preparedness<br>Early warnings<br>DWM response measures | Mr Faafetai Sagapolutele,<br>Assistant Chief Advisor, JPRISM II |
| **1:43pm – 1:53pm** | Discussion | | Ms Julie Pillet<br>Technical Waste Project Coordinator, SWAP |
| **1:53pm – 1:55pm** | Photo | Group photo | Island Innovation |
| **1:55pm – 2:10pm** | BREAK | | |
| **2:10pm – 2:20pm** | Samoa National Action Plan (NAP) for Disaster Risk Management | How is Disaster Risk Management organised in Samoa?<br>What are the NAP governance arrangements?<br>What are the monitoring and evaluation tools? | Ms. Fesolai Molly Nielsen, ACEO - National Disaster Management Office |
| **2:20pm – 2:30pm** | Activity Presentation – Samoa DWMP | Preparation (Institutional Framework, clusters,) | Mr. Setoa Apo, Principal Solid Waste Management Officer – MNRE |
| **2:30pm – 2:40pm** | Activity Presentation – Vanuatu Community Project | How did Vanuatu organise Disaster Waste Management response with communities following the tropical cyclone Harold in 2020?<br>What were the key challenges? | Ms. Roselyn Bue, Senior Officer, Chemical and Ozone – MCCAMGEEDM |
| **2:40pm – 2:48pm** | Lessons learned from Tonga on how the disaster waste was managed after the disaster | Interviews of key stakeholders involved in Disaster Waste Management after the tsunami and volcano eruption. | SWAP video - capsule |
| **2:48pm – 2:58pm** | National Action Plan - Tonga | Overview on how Disaster Risk Management is arranged in Tonga? | Mr Viliami Tongamana, National Cluster Coordinator, National Emergency Management Office |
| **2:58pm – 3:08pm** | Lessons learned from Tonga on how the disaster waste was managed after the disaster | How did Tonga organise Disaster Waste Management response/clean-up following the tsunami and volcano eruption?<br>What were the key challenges? | Ms. Mafile'o Masi,<br>Chief Environmentalist, MEIDECC |

| Time | Topic | Purpose of the presentation | Speaker |
|---|---|---|---|
| **3:08pm – 3:18pm** | Lessons learned from Tonga on how the disaster waste was managed after the disaster | Asbestos focus | Ms. Sulieti,<br>PacWaste Plus In-country Officer - Tonga |
| **3:18pm – 3:38pm** | Discussion | | Ms Julie Pillet<br>Technical Waste Project Coordinator, SWAP |
| **3:38pm – 3:53pm** | BREAK | | |
| **3:53pm – 4:03pm** | Disaster Waste Management Data Collection Project | Introduction of the DWM Data Collection Project in Tonga<br>Presentation of KoboToolBox | Mr. Stalini Naufahu<br>Manager Special Projects and Information Technology<br>Waste Authority Ltd (Tonga) |
| **4:03pm – 4:13pm** | Practitioner Guidelines | 1. Guideline in drafting National and Community Disaster Waste Management<br>2. Guideline on Establishing Environment Sector Working Group<br>3. Guideline on Standard Methodology for Estimating Disaster Waste. | Ms. Sainimili Bulai<br>PacWaste Plus technical Waste Project Officer – Solid Waste |
| **4:13pm – 4:23pm** | Discussion | | Ms. Julie Pillet<br>Technical Waste Project Coordinator, SWAP |
| **4:23pm – 4:28pm** | Closing Remarks | Wrap-up and Closing Remarks | Mr. Anthony Talouli<br>WMPC, Director |
| **4:28pm – 4:30pm** | Workshop Assessment | Online Assessment Form to get feedback from participants | Island Innovation |

## 3.4. Participants

The registration went through an online Registration Form (Appendix 3): https://swap.virtualislandsummit.com/.

According to the Post-Event Report (Appendix 6) provided by Island Innovation as part of the logistics service, registration for the Workshop gathered a total of 31 responses. The contact details of the registered persons are provided in Appendix 4.

Out of the 31 registered participants, 15 (48.4%) were females, 15 (48.4%) were males with 1 (3.2%) identified as Other. In terms of nationalities, majority were from Fiji, with 13 (42%) of the total registered participants. There was also a strong presence from Australia (6.5%), Japan (6.5%), USA (16.1%), Solomon Islands (9.7%) and Tonga (9.7%). The registered participants varied from being project coordinators and environmentalist to advisors and researchers of civil society organizations, media networks, or government offices.

During the live virtual delivery, 18 participants joined the workshop at max (peak) attendance.

# IV. Virtual Disaster Waste Management Workshop Outcomes

## 5.1. Workshop Notes

The workshop began with an introduction to the logistical arrangements from the Island Innovation team followed by an overview of the workshop by Ms Julie Pillet who was the lead facilitator for the workshop. She is also the Technical Waste Project Coordinator for SWAP. This was followed by opening remarks from Mr Anthony Talouli, who welcomed all attendees to the workshop.

### *5.1.1. Framework For Resilient Development (FRDP) In the Pacific*

The first presentation was conducted by Mr Sione Fulivai, FRDP Coordinator, providing an overview of the Framework for Resilient Development in the Pacific and its key principles.

The Framework for Resilient Development in the Pacific (FRDP) is a regional framework that provides guidance on how to enhance resilience to climate change and disasters in sustainable ways. It has three main goals:

- Goal 1: To strengthen integrated adaptation and risk reduction to enhance resilience to climate change and disasters.
- Goal 2: Low carbon development.
- Goal 3: Strengthened disaster preparedness, response and recovery (with potential to turn post-disaster waste into energy).

The FRDP relies on Pacific partnerships and has a governance structure with a Pacific Resilience Partnership (PRP) Task Force, PRP Support Unit, five Technical Working Groups, and a biennial Pacific Resilience Meeting (PRM).

### *5.1.2. Disaster Waste Management Guideline*

The Disaster Waste Management Guideline, presented by Mr Faafetai Sagapolutele, Assistant Chief Advisor of JPRISM II, aims to provide guidance on appropriate measures for Pacific Island Countries (PICs) to manage waste during disasters.

- The guideline focuses on preventing and mitigating disaster waste, being prepared for disasters, and effectively responding to and recovering from them. The main objective of the guideline is to integrate disaster waste management into the PICs' national disaster management planning process for improved coordination and institutional support.
- The goal of the guideline is to improve PICs' capacity for managing disaster waste. The rationale for developing the guideline is that PICs are highly vulnerable to natural hazards and managing the waste generated during these events is a challenge. The guideline aims to promote international best practices and measures for managing disaster waste. The guideline covers stages such as prevention and mitigation, preparedness, response, recovery, and reconstruction.
- Four draft national disaster waste management plans have been developed for Samoa, Tonga, Solomon Islands, and Vanuatu.

### *5.1.3. Samoa Disaster Waste Management Plan (DWMP)*

This presentation focused on national activities, with Mr Setoa Apo, from the Ministry of Natural Resources and Environment (MNRE) in Samoa, providing an overview of the Samoa Disaster Waste Management Plan.

- The presentation discussed the importance of a Disaster Waste Management (DWM) Plan for Samoa, which is vulnerable to natural hazards such as tropical cyclones, floods, earthquakes, and volcanoes. Mr. Setoa Apo highlighted the potential for waste to be generated from these hazards and the need for immediate and coordinated waste management to prevent further damage to the environment, health, and economy. He also mentioned the availability of international guidelines for disaster waste management, such as the UNEP Disaster Waste Guideline 2011 and the Asia Pacific Disaster Waste Guideline 2018.
- MNRE has a draft DWM Response Plan, which aims to provide detailed response actions and outline key roles and responsibilities for government agencies and stakeholders. The plan also focuses on mainstreaming disaster waste management into the National Disaster Management Plan, promoting appropriate practices, enhancing coordination, and securing resources for restoring affected waste management facilities. The plan falls under Samoa's National Disaster Management Act 2007 and Waste Management Act (WMA) 2010 and covers high-risk hazards as identified in the National Disaster Management Plan. The ministry is also proposing the establishment of a Disaster Waste Committee and coordination with existing national and technical committees.

### *5.1.4. Vanuatu Community Project on Vanuatu's DW response to communities following the Tropical Cyclone Harold in 2020*

In her presentation, Ms. Roselyn Bue, Senior Officer in the Chemical and Ozone Division from the Ministry of Climate Change, Adaptation, Meteorology, Geo-Hazards, Energy, Environment, Disaster Management and Meteorological Services in Vanuatu, discussed the strategies and challenges surrounding disaster waste management response in the aftermath of Tropical Cyclone Harold in 2020. Specifically, she delved into the implementation of the Policy Development and the piloting of the Regional Disaster Waste Management tool kit through a training in November 2019 and subsequent workshop to develop Vanuatu's National Disaster Waste Management Contingency Plan.

- The Tropical Cyclone Harold Disaster Waste Assessment was conducted in 10 locations across the Sanma Province and Penama Province on four islands, including Santo Island, Malo Island, Aore Island, and Pentecost Island. Most of the waste found at these locations was Green Waste and Building Debris, including bulky items such as iron roofing and timber. The total amount of disaster waste assessed was 238.7 $m^3$, with 124 $m^3$ being bulky waste, 81.7 $m^3$ being non-recyclable waste, and 33 $m^3$ being recyclable waste.
- Ms. Bue highlighted several key challenges faced during the disaster waste management response, including funding issues, delays in response, difficulty in data analysis, lack of appropriate equipment and resources, and the need for improved collaboration between relevant stakeholders. Additionally, on the islands far from the main town, it proved difficult to engage individuals in clean-up and recovery efforts as they were primarily focused on

rebuilding their homes and gardens. The transportation of waste from smaller islands to the main island also proved costly and logistically challenging.

- In terms of recovery efforts, a Post Disaster Needs Assessment (PDNA) Report was submitted to the Prime Minister's Office, covering both disaster waste and biodiversity recommendations post assessments. Additionally, a formal request for assistance was sent to the Secretariat of the Pacific Regional Environment Programme (SPREP) and assistance in the form of disaster waste response equipment was donated by the International Cooperation Agency.
- In recognition of the challenges faced in disaster waste management response, the Government of Vanuatu, through the Department of Environmental Protection & Conservation under the Ministry of Climate Change & Adaptation, established a Disaster Waste Cluster under the National Disaster Framework in 2021. This cluster includes a sub-cluster for Disaster Waste and another for Biodiversity Loss, linking all key sectors including the government, sub-government, and NGO stakeholders. The expectation is for continued dialogue and support from Regional and International Organisations, such as SPREP, to provide technical and financial assistance in line with the country's needs post-disaster.

### *5.1.5. National Action Plan - Tonga*

For this presentation Mr Viliami Tongamana, the National Cluster Coordinator of the National Emergency Management Office (NEMO) presented on Tonga's National Action Plan and provided an overview on how Disaster Risk Management is arranged in Tonga.

- During the presentation, Mr. Viliami, provided an overview of Tonga's National Action Plan and the organisation's approach to Disaster Risk Management. NEMO's mandate is established by the Emergency Management Act 2007, which will soon be replaced by the Disaster Risk Management Bill 2021 upon receiving approval. He discussed NEMO's focus on disaster preparedness, including planning, risk assessment, training, and exercises at national, district, and village levels, as well as awareness programs in schools and communities and media outreach through television and radio programs.
- He also highlighted NEMO's role in disaster response, which includes coordinating with national and international partners and managing disaster assessments, planning, communication, logistics, and humanitarian relief efforts. Additionally, Mr. Tongamana discussed NEMO's efforts in disaster recovery and reduction, including the organisation's activities throughout the Disaster Management Cycle.
- He also provided a brief overview of the new Disaster Risk Management Bill 2022, which contains 17 parts and aims to establish a legal, institutional, and regulatory framework for disaster risk reduction and preparedness, emergency response, and disaster recovery. He noted that the bill places a greater emphasis on disaster risk management generally, rather than just emergency management, and highlights the legalisation of the Cluster system and the establishment of functions and responsibilities for clusters. Finally, Mr. Tongamana discussed the governance structure for the National Disaster Council, which is chaired by the Minister of MEIDECC and includes the National Emergency Management Council, National Emergency Operations Committee, and National Emergency Recovery Committee, with NEMO serving as chair for all three.

### *5.1.6. Lessons learned from Tonga on how they organised a Disaster Waste Management response/clean-up following the tsunami and volcano eruption*

Ms. Mafile'o Masi, the Chief Environmentalist at the Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change, and Communications (MEIDECC), presented on the lessons learned from Tonga's management of disaster waste in the aftermath of the tsunami and volcano eruption in January 2022. Ms. Masi discussed how Tonga organised its Disaster Waste Management response and clean-up efforts, as well as the key challenges faced during the process.

- On January 15, 2022, the Hunga Tonga Hunga Ha'apai submarine volcano in the Tongan archipelago erupted, leading to devastating tsunamis in multiple Pacific nations, including Tonga, Fiji, American Samoa, Vanuatu, and countries along the Pacific rim. Tragically, at least two individuals were killed and several more were injured due to waves reaching up to 20m in height. This was the largest volcanic eruption since the 1991 eruption of Mt Pinatubo and the most powerful eruption since the 1883 eruption of Karakatoa.
- She also provided visual representation of the aftermath of the volcanic eruption and tsunami, as well as information on the response and recovery efforts. The Disaster Waste Response Plan, endorsed by the National Emergency Management Committee (NEMC), was led by the Department of Environment, with support from various agencies including the Ministry of Health, Water and Land, the Prime Minister's Office, the Japan International Cooperation Agency, the Australian Department of Foreign Affairs and Trade, the Ministry of Police, the Tonga Red Cross Society, the No Pelesitiki Campaign, and local communities.
- Despite the challenges faced due to the remote location, limited communication infrastructure, lack of appropriate equipment, and the outbreak of COVID-19, Ms. Masi emphasised that the clean-up and recovery efforts would not have been possible without the active participation of local communities. Additionally, Ms. Masi highlighted the difficulties posed by the surplus of relief supplies and the strain on landfill capacity. Overall, Ms. Masi's presentation provided valuable insights into the complexities of managing disaster waste in the aftermath of a catastrophic event.

### *5.1.7. Lessons learned from Tonga on how the disaster waste was managed after the disaster for Asbestos*

In her presentation, Ms. Sulieti, the PacWastePlus In-country Officer in Tonga, discussed the lessons learned from the management of asbestos disaster waste in the country. She highlighted the importance of investing in long-term management solutions, as well as the need to address the health and environmental impacts of disaster waste and asbestos debris.

- The Department of Environment, under the Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC), is working to build on the efforts of PacWastePlus and invest in the development of effective solutions for the management of Asbestos Containing Materials (ACM) in Tonga.
- In particular, the department is focusing on the Tapuhia Landfill, which is managed by the Waste Authority Limited and is an authorised site for solid waste management and disposal in Tongatapu. Collection services have been extended to the outer islands of Vava'u in 2018, Ha'apai and 'Eua in 2020. The landfill covers an area of approximately six hectares and is located between 15 to 20 meters above sea level.

- According to the Waste Management Act (2005), Waste Authority Limited is the authority for waste management collection services and disposal at the landfill in Tonga and in the outer islands. The landfill consists of four cells, with cell one being full, cell two reaching fifty percent of its capacity, and plans for the construction of cell three next year.
- The department is also considering opportunities for in-country disposal of asbestos, which would reduce environmental and health exposure impacts, reduce costs, and eliminate the need for long-term storage. Additionally, it would eliminate the need for off-island shipping and reduce the carbon footprint.
- In order to address the ACM in Tonga, the department is working on developing national legislation to ban the importation of asbestos or goods containing asbestos, as well as an asbestos Code of Practice to guide the management and handling of asbestos. The department is also working to establish an asbestos Inspectorate and identify best practices for asbestos disposal at the landfill.

### *5.1.8. Disaster Waste Management Data Collection Project*

In his presentation, Mr. Stalini Naufahu, Manager of Special Projects and Information Technology at the Waste Authority Ltd in Tonga, provided insight into the Disaster Waste Management Data Collection Project in Tonga. The project, which is based on the Tonga Volcano-tsunami Post-disaster Data & Information Collection Pilot Project (Mar-July 2022), aims to strengthen good practices in disaster waste management through the use of advanced technology, specifically the KoboToolBox app.

- Mr. Naufahu began by introducing the audience to KoboToolBox, a suite of tools for field data collection that are specifically designed for use in challenging environments, such as remote and offline areas. He highlighted the app's ability to track GPS locations and its significance in disaster response and recovery efforts.
- The presentation then delved into the specific ways in which the Tonga Waste Authority Ltd utilised the KoboToolBox app at all waste disposal sites on Tongatapu Island. Mr. Naufahu explained the process of data collection and the data outputs that were generated in excel for further analysis.
- In the context of the presentation, Mr. Faafetai also provided background information on the significant quantities of disaster waste that were generated because of the destructive tsunami caused by the Hunga Tonga Hunga Ha'apai submarine volcano. He displayed images of the devastation caused by the tsunami to both the natural and built environments.
- As part of the Disaster Response & Recovery Support of JPRISM 2 to Pacific Island Countries (PICs) during disaster events, equipment and tools were provided to Tonga. These resources were used to support maintenance operations of the waste disposal sites and to establish an Information System to gather information and data on the generated disaster waste.
- The purpose of the project is to pilot the collection of disaster waste data and information in Tonga using the KoboToolBox app as one of the available mobile data collection platforms. The key objectives of the project include:
    - Establishing an information system to support the quick collection of data and information on disaster waste during disaster and emergency events in Tonga.

  - Improving data collection, monitoring, and management of collected, disposed, and recovered waste for recycling purposes in the long term.
  - Utilizing the established system for other general waste management information assessment and monitoring purposes.
- The project employed various methodologies, including daily recording of the incoming waste to the disposal sites, key data and information collection, and the use of a mobile data platform to quickly gather data. The system was able to generate reports on various aspects of disaster waste management, including the number of incoming truckloads, the composition of incoming waste, and the locations of collected waste.

### *5.1.9. Practitioner Guidelines*

During the last presentation, Ms. Sainimili Bulai, the PacWastePlus technical Waste Project Officer for Solid Waste, discussed the practitioner guidelines for drafting national and community disaster waste management plans, establishing environment sector working groups, and standard methodology for estimating disaster waste. She provided a comprehensive overview of the PacWastePlus project, which aims to generate improved economic, social, health, and environmental benefits for Pacific Island countries and territories (PICs) by strengthening regional economic integration and sustainably managing natural resources and the environment.

- The specific objective of the PacWastePlus project is to ensure the safe and sustainable management of waste with due regard for the conservation of biodiversity, health and wellbeing of Pacific Island communities, and climate change mitigation and adaptation requirements. The project focuses on three priority waste streams: hazardous waste, solid waste, and wastewater.
- Ms. Bulai discussed the key result areas (KRA) of the PacWastePlus project, including the development of a regional waste management data framework, regional research activities, and national education and awareness plans. She also discussed the legislative frameworks for waste licensing and monitoring, asbestos management, sustainable financing, and disaster waste management task force. In addition, she discussed the on-ground action and best practice initiatives, such as organics processing technologies, end-of-life vehicle management, and re-use and repair centres. Finally, Ms. Bulai discussed the capacity building initiatives, including school education curriculum and waste management tertiary and vocational course development.
- Given the Pacific region's vulnerability to natural disasters, Ms. Bulai emphasised the importance of enhancing PICs' resilience to disasters through proper management of waste generated from natural disasters. This includes incorporating waste management into the national disaster management process, empowering local communities to improve daily waste management, and enhancing in-country capacity to manage high volumes of waste.
- The project will be implemented in a pilot country, where a waste management cluster within the National Disaster Management Office (NDMO) will be established, a national disaster plan will be developed and implemented, and partnership agreements with stakeholders will be formed. First responders and local officers will also be trained. From the learnings of the pilot project, resources will be developed to assist other countries, including guidelines on the establishment of waste management clusters, practitioner guidelines,

drafting national disaster waste management frameworks, and partnership agreements for effective management of disaster waste. Additionally, a training manual on disaster waste management will be developed, as well as a video to guide local practitioners. PacWastePlus will be working with a pilot country to trial all guidelines before finalization.

## 5.2. Materials

### *5.2.1. Presentations*

The nine presentations are provided in Appendices 5:

- Framework For Resilient Development (FRDP) In the Pacific: Appendix 5a;
- Disaster Waste Management Guideline: Appendix 5b;
- Samoa Disaster Waste Management Plan (DWMP): Appendix 5c;
- Vanuatu Community Project on Vanuatu's DW response to communities following the Tropical Cyclone Harold in 2020: Appendix 5d;
- National Action Plan – Tonga: Appendix 5e;
- Lessons learned from Tonga on how they organised a Disaster Waste Management response/clean-up following the tsunami and volcano eruption: Appendix 5f;
- Lessons learned from Tonga on how the disaster waste was managed after the disaster for Asbestos: Appendix 5g;
- Disaster Waste Management Data Collection Project: Appendix 5h;
- Practitioner Guidelines: Appendix 5i.

### *5.2.2. Recording*

The recording of the workshop is available on SPREP YouTube Channel (in English and French) at:

- English: https://youtu.be/-vB2WFyQhHE
- French:
  - Part 1 (Introduction): https://youtu.be/IblNj8wQ6o4
  - Rest of recording: https://youtu.be/XMoy-QNy35U

### *5.2.3. Additional materials*

Additional materials are available here:

- Framework for Resilient Development in the Pacific (FRDP): https://www.resilientpacific.org/en/framework-resilient-development-pacific
- Disaster Waste Management Guideline: https://library.sprep.org/content/pacific-island-countries-regional-disaster-waste-management-guideline
- Resources from PacWastePlus, Ms. Sainimili Bulai on her presentation - Practitioner Guidelines
  - Video on Grow a Wish Short Film: https://www.youtube.com/watch?v=_XgI0lY7mJc
- Documentary on how Tonga has handled disaster waste generated by Jan2022 volcanic eruption & tsunami:
  - English version: https://youtu.be/JYbIPNlFSJU
  - French version: https://youtu.be/uXmRbYgtLYM
  - 7-minute teaser: https://youtu.be/gD8TJcnwy34

  - 1.5-minute short-cut: https://youtu.be/KTzr_-jrlTQ
- Feature articles were published on SPREP Website:
  - English version: https://www.sprep.org/news/pacific-islands-supported-to-better-manage-disaster-waste
  - French version: https://www.sprep.org/news/un-atelier-pour-preparer-les-pays-du-pacifique-a-mieux-gerer-les-dechets-issus-de-catastrophes-naturelles

## V. Survey

Before the closing remarks, the attendees were requested to file an online survey to assess the Disaster Waste Management Workshop including format, length, content, presentations, logistics, etc. The survey was in French and English.

The links for the survey (in English and French) are as follows:

- English link https://www.surveymonkey.com/r/swap_survey_eng
- French link https://www.surveymonkey.com/r/swap_survey_fr

The questions were as follows, and the participants were given the opportunity to add comments to detail their thoughts:

- Question 1: In general, are you satisfied with the Disaster Waste Management Workshop?
- Question 2: Was the length of the workshop appropriate?
- Question 3: Did the agenda and content of the Disaster Waste Management Workshop meet your expectations?
- Question 4: Were the topics covered in sufficient detail?
- Question 5: Was the quality of the interventions satisfactory?
- Question 6: What improvements could be made at the next workshop (length, content, format, etc.)?

Responses were anonymised to facilitate participation in the survey.

Unfortunately, only three attendees filled out the online survey. Their responses are provided in Appendix 7. In summarise, all of the participants who sent in their assessments were satisfied with the workshop. The two main comments are:

- a face-to-face workshop would be a good improvement;
- more experience sharing from stakeholders and projects would also be relevant in a future workshop on Disaster Waste Management.

# Appendices

- Appendix 1 – Flyers
- Appendix 2 – Circulars
- Appendix 3 – Registration Form
- Appendix 4 – Contact details of registered persons
- Appendix 5: Presentations
  - Appendix 5a – Framework for Resilient Development (FRDP) In the Pacific.
  - Appendix 5b – Disaster Waste Management Guideline.
  - Appendix 5c – Samoa Disaster Waste Management Plan (DWMP).
  - Appendix 5d – Vanuatu Community Project on Vanuatu's DW response to communities following the Tropical Cyclone Harold in 2020.
  - Appendix 5e – National Action Plan – Tonga.
  - Appendix 5f – Lessons learned from Tonga on how they organised a Disaster Waste Management response/clean-up following the tsunami and volcano eruption.
  - Appendix 5g – Lessons learned from Tonga on how the disaster waste was managed after the disaster for Asbestos.
  - Appendix 5h – Disaster Waste Management Data Collection Project.
  - Appendix 5i – Practitioner Guidelines.
- Appendix 6 – Post-Event report
- Appendix 7 – Survey responses

# Appendix 1: Flyers

# Appendix 2: Circulars

# Appendix 3 – Registration Form

# Appendix 4 – Contact details of registered persons

# Appendix 5 – Presentations

# Appendix 5a – Framework for Resilient Development (FRDP) In the Pacific.

# Appendix 5b – Disaster Waste Management Guideline.

# Appendix 5c – Samoa Disaster Waste Management Plan (DWMP).

# Appendix 5d – Vanuatu Community Project on Vanuatu's DW response to communities following the Tropical Cyclone Harold in 2020.

# Appendix 5e – National Action Plan – Tonga.

# Appendix 5f – Lessons learned from Tonga on how they organised a Disaster Waste Management response/clean-up following the tsunami and volcano eruption.

# Appendix 5g – Lessons learned from Tonga on how the disaster waste was managed after the disaster for Asbestos.

# Appendix 5h – Disaster Waste Management Data Collection Project.

# Appendix 5i – Practitioner Guidelines.

# Appendix 6 – Post-Event Report

# Appendix 7 – Survey responses