



SPREP
Secretariat of the Pacific Regional
Environment Programme



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STOCKTAKE REPORT:

Available Tertiary & Vocational Waste Management Courses in the Pacific Region

January 2021



This report provides details of the waste management courses offered in the PacWastePlus countries.

TRAINING



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

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Abbreviations and Acronyms

AELERT	Australasian Environmental Law Enforcement and Regulators network.
CIWM	Chartered Institute of Waste Management
CROP	Council of Regional Organisations of the Pacific
EU	European Union
FNU	Fiji National University
HEI	Higher Education Institute
ISWA	International Solid Waste Association
JICA	Japanese International Cooperation Agency
MNRE	Samoa Ministry of Natural Resources and Environment
NUS	National University of Samoa
PacWastePlus	Pacific-EU Waste Management Programme
SINU	Solomon Islands National University
SPREP	South Pacific Regional Environmental Programme
SWANA	Solid Waste Association of North America
UNEP	United Nations Environmental Programme
USP	University of the South Pacific
WASTEMINZ	Waste Management Institute New Zealand Incorporated
WMRR	Waste Management Resources Recovery of Australia



BACKGROUND

The Secretariat of the Pacific Regional Environment Programme (SPREP) is working with the European Union's Delegation to the Pacific, 14 Pacific island countries and Timor-Leste to implement the PacWastePlus Programme, which seeks to improve and enhance waste management activities and the capacity of governments, industry, and communities to manage waste to reduce the impact on human health and the environment.

PacWastePlus seeks to generate improved economic, social, health and environmental benefits for Pacific island countries arising from stronger regional economic integration and the sustainable management of natural resources and the environment.

The programme activities is designed to assist countries to ensure the safe and sustainable management of waste with due regard for the consideration of biodiversity, reduction of marine litter, health and well-being of Pacific island communities, and climate change mitigation and adaptation requirements.

Activities for PacWastePlus will focus on the targeted priority waste streams of:

- **Hazardous wastes**

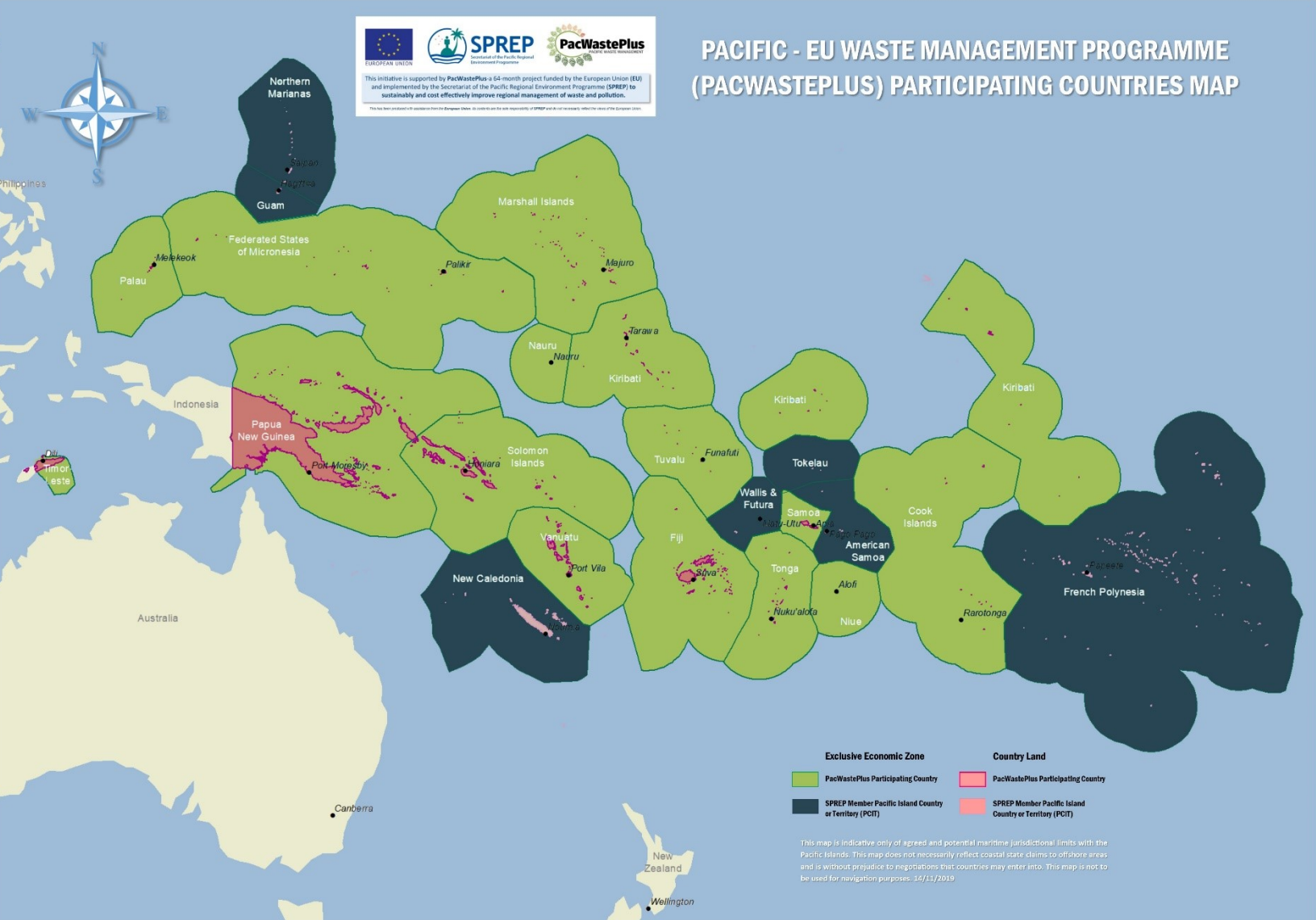


- **Solid wastes**



- Related aspects of **Wastewater** (water impacted by solid waste)





The Institute of Applied Sciences of The University of the South Pacific was engaged to carry out a stocktake assessment of tertiary and vocational waste management educational and trainings to identify any existing or potential accredited waste management training, competency-based assessments, or hands-on training opportunities currently available to participating countries.

OBJECTIVE

The stocktake activity was designed to respond to the following objectives:

1. Identify accredited waste management courses/programs previously and currently available in Higher Education Institutes (HEI) at the tertiary and vocational levels in the Pacific region, specific to the PacWastePlus participating countries through a desktop review.
2. Confirm the content details of the identified accredited courses/programs by questionnaire survey (SPREP approved) and findings tabulated for the PacWastePlus countries.
3. Identify and confirm details of any other waste management training programs developed for the Pacific region (in consultation with other CROP agencies who have waste management programs such as SPREP – Waste Management & Pollution Control (WMPC), JPRISM project and UNEP that can be utilized to develop accredited courses and programs that can be delivered in HEI in the Pacific.
4. Identify accredited waste management courses from New Zealand and Australia offered in recognised tertiary and vocational institutions relevant to the PacWastePlus programme and that can be replicated or developed further.

INTRODUCTION

Waste Management is a cross-cutting issue managed through several disciplines including environmental science, environmental health and management, civil engineering, and environmental engineering (to name a few). Various components of waste management knowledge and skills training is embedded in core subjects such as biology, chemistry, physics, geography, and health science at Higher Education Institutes (HEI) in the Pacific Region.

Shorter courses and the vocational waste management training programs or micro-type qualification courses are frequently available through professional waste management organizations and associations such as the Waste Management & Resource Recovery Association of Australia (WMRR), the Australasian Environmental Law Enforcement and Regulators network (AELERT), and the Solid Waste Association of North America (SWANA).

In the Pacific, waste management training is usually targeted at the national level and is provided by internationally funded programs under JICA, UNEP, World Bank and EU. A desktop review conducted as part of the methodology approach of waste management courses and programs in the Pacific show that opportunities for a pathway to obtaining a Waste Management certificate, diploma, degree, or postgraduate qualification through a HEI is extremely limited in the Pacific.

The review:



identified six HEIs that offer accredited waste management training courses after reviewing one hundred and twenty-six HEIs online



listed waste management related courses offered in the participating PacWastePlus countries



provided a snapshot of existing formal waste management and waste management related courses



listed and discussed donor funded waste management training in the PacWastePlus countries



listed 10 formal waste management courses offered in the SPREP region



discussed waste management training courses offered by international waste management institutes and associations

This report provides details of the waste management courses offered in the PacWastePlus countries.

METHODOLOGY

The project activities were undertaken using the following methodology.



Desk Review and Development of Stocktake Questionnaire

- Identification of HEI that could potentially offer waste management courses within the region.
- A review of online academic calendars to identify the waste management courses offered by HEIs.
- Compilation of waste management courses categorised by the eight PacWastePlus priority waste streams.
- Direct contact with HEIs to confirm what waste management courses are offered.
- Compilation of training and learning resources and/or materials available in the Pacific region.
- Development of draft stocktake assessment outlining findings.
- Development and distribution of a questionnaire seeking more detailed information from HEI and tertiary institutes on the waste management courses they offer.



Stocktake Content Confirmation

- Letters sent to the heads of targeted HEIs seeking their participation in the review by completing the questionnaire.
- Collation of responses to the questionnaire.



Report Development

- Analysis of the outcomes of the desktop and survey responses.
- Development of final report providing detailed waste management course stocktake results.

RESULTS OF STOCKTAKE

I. Accredited waste management courses available in the region

As per the project methodology, both HEI and tertiary institutes were included in the stocktake research. Difficulties were experienced with contacted many of these institutes due to incorrect information published on websites and materials.

Despite these challenges:

- Eighty-six vocational institutes were contacted.
- Forty tertiary institutes (Higher Education Institutes or HEI's) were contacted.
- Twelve accredited tertiary level courses were identified.
- No vocational or TVET accredited courses were identified at any of the HEIs.
- Only six HEIs in the region (located in Fiji, Papua New Guinea, Samoa, and Solomon Islands) countries confirmed to either have offered or still offer accredited tertiary courses in waste management.

The results are included in **Appendix B**.

Figure 1 Accredited waste management courses/programs in the PACWASTEPLUS island countries

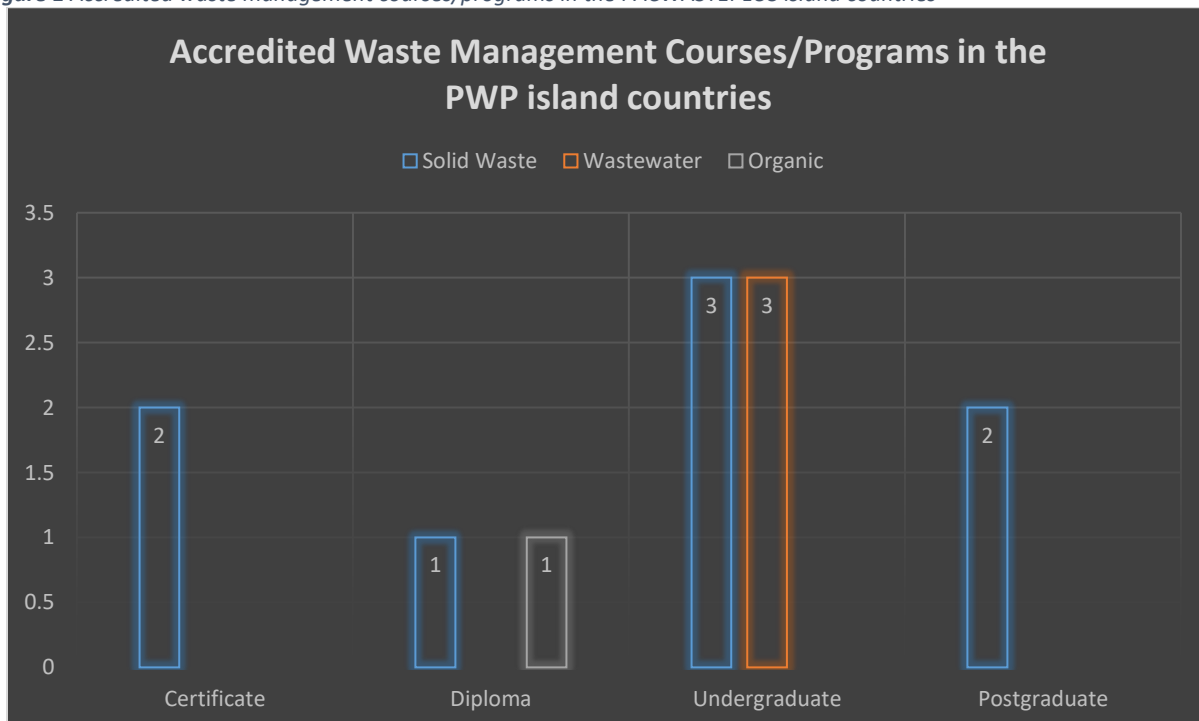


Figure 1 shows the number of tertiary courses in waste management at certificate, diploma, undergraduate and postgraduate level in the region. The tertiary level course in waste management are at the undergraduate level.

Certificate Courses

Certificate training programs are usually delivered by TAFE institutes in the Pacific, however there were no Certificate programs in waste management identified in the regional TAFE institutes such as Pacific TAFE in Fiji and the main APTC campuses in Fiji, Papua New Guinea, Samoa, Solomon Islands, and Vanuatu.

There were two short courses advertised by the National Training and Productivity Centre at the Fiji National University in Fiji.

- A two-day course in Waste Management and Pollution Control for individuals involved in handling and managing waste materials.
- A course in Integrated Waste Management in Hotels & Resorts was developed.

Diploma Courses

There were two diploma level courses in Waste Management identified as shown in **Table 1** below.

Table 1 Diploma level courses in waste management identified in the PacWastePlus countries.

Course Title	Course Code	PACWASTEPLUS Waste Stream	Program	Faculty or College	HEI
1. Livestock Waste Production and Management	ASM501	Organic	Diploma in Animal Husbandry	College of Agriculture, Fisheries and Forestry	Fiji National University
2. Waste Management and Pollution Control	EN533 (ENV403)	All	Diploma of Environmental Studies	Faculty of Agriculture Fisheries and Forestry- Department of Environment	Solomon Islands National University, Honiara

Interestingly, both the diploma courses were identified under the Agriculture, Fisheries and Forestry departments of their respective HEI, however one was focused on the management of organic waste in an animal husbandry program and the other was a general waste management and pollution control under an environmental studies program.

Undergraduate Courses

There were six undergraduate courses identified, however, only four of these are currently offered at their relevant institutes as shown in **Table 2**.

Table 2 Undergraduate level course in waste management identified in the PacWastePlus countries.

Core Course/Unit title	PACWASTEPLUS Waste Stream	Course Code	Programme Title	Faculty/School	Higher Education Institute
1. Solid Waste Management	All	Evh607	Bachelor of Environmental Health	College of Medicine, Nursing and Health Sciences	Fiji National University
2. Solid Waste Management	All	Evh612	Bachelor of Environmental Health	College of Medicine, Nursing and Health Sciences	Fiji National University
3. Water and Wastewater Engineering	Wastewater	CEB7078	Bachelor of Engineering (Honors)	College of Engineering, Science and Technology	Fiji National University
4. Water & Wastewater Engineering	Wastewater, Organic and Recyclables	CV362	Bachelor of Science (Geotechnical Engineering)	Faculty of Science, Technology & Environment	University of the South Pacific
5. Solid Waste Management (no longer offered)	All	HEH302	Bachelor of Health Science	Faculty of Health Science	National University of Samoa
6. Design and Monitoring of Water and Wastewater Systems	Wastewater	TFT432	Bachelor of Science (Food Technology)	Department of Applied Science	University of Technology, PNG

Postgraduate Courses

The University of Technology Papua New Guinea is the first and only institute that offers a Masters qualification in Solid Waste Management. The program was first offered in 2017 and the program will receive the first graduates in 2020.

A postgraduate course is offered by the College of Medicine Nursing and Health Science at FNU but specific information about this course was withheld by the College.

II. Content details for accredited waste management courses in the PacWastePlus countries

Four countries out of the fifteen PacWastePlus island countries offer accredited waste management courses at the tertiary level. These are Fiji, Samoa, Solomon Islands and Papua New Guinea.

Figure 2 PacWastePlus countries that offer accredited waste management courses.

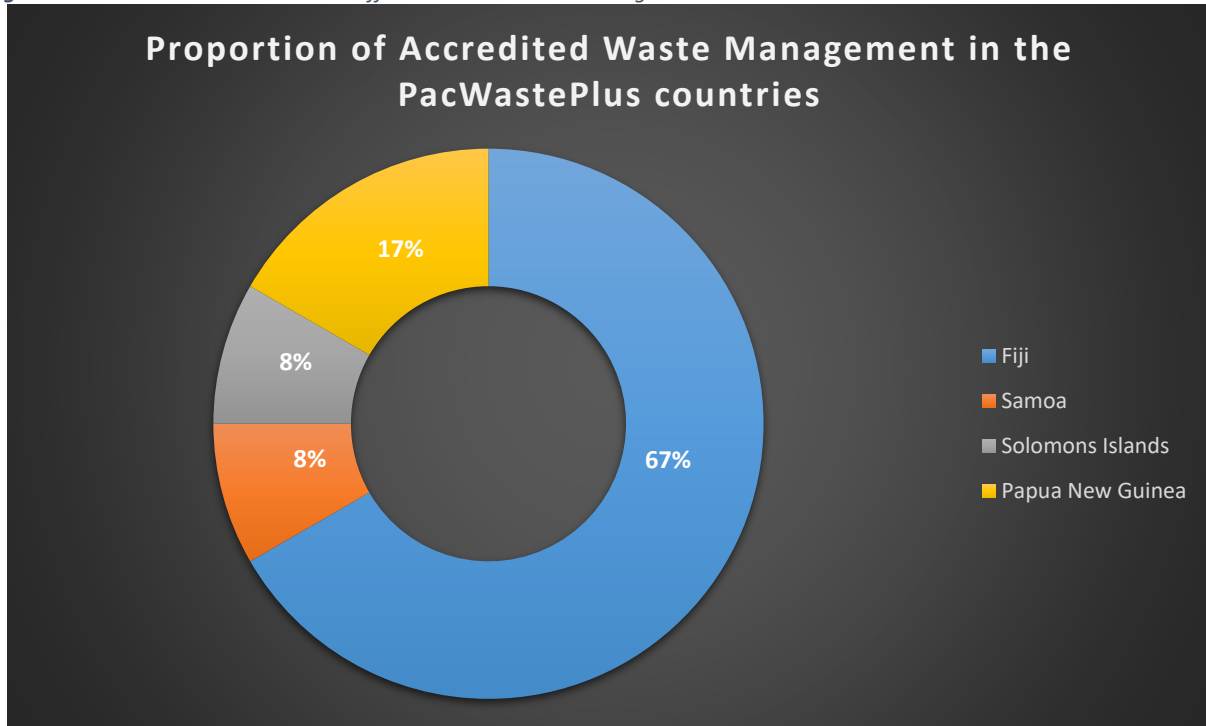


Figure 2 shows that Fiji offers just over two thirds of the accredited tertiary level courses in waste management.

Table 3 provides a summary of courses where information was available.

Table 3 Summary results of content confirmation for the waste management courses identified in the PacWastePlus countries.

Higher Education Institute	Course Code	Core Course/ Unit title	Course Type	Prerequisite	Delivery Mode	Programme Title
Fiji National University	Postgraduate	Solid Waste Management	Tertiary	Work Experience	Face -Face	Postgraduate Diploma in Environmental Health
Fiji National University	EVH607	Solid Waste Management	Tertiary	Foundation Science	Face -Face	Bachelor of Environmental Health
Fiji National University	EVH612	Solid Waste Management	Tertiary	EVH 607 Solid Waste Management	Face -Face	Bachelor of Environmental Health
Fiji National University	CEB707	Water and Wastewater Engineering	Tertiary	CEB703, Water Resources Engineering	Face -Face	Bachelor of Engineering (Honours)
Fiji National University	ASM501	Livestock Waste Production and Management	Tertiary		Face -Face	Diploma in Animal Husbandry
FNU - National Training and Productivity Centre	PQEM0021C	Integrated Waste Management in Hotels & Resorts	Short Course	None	Face-Face/ Online/ Blended	Certification of Participation Environmental Management and Green Productivity
FNU - National Training and Productivity Centre	PQEM	Waste Management and Pollution Control	Short Course	None	Face-Face/ Online/ Blended	Environmental Management and Green Productivity
University of the South Pacific	CV362	Water & Wastewater Engineering	Tertiary	CE224-Biology and Chemistry for Civil Engineering	Face -Face	Bachelor of Science (Geotechnical Engineering)
University of Samoa	HEH302	Solid Waste Management	Tertiary		Face -Face	Bachelor of Health Science
Solomon Islands National University, Honiara	EN533 (ENV403)	Waste Management and Pollution Control	Tertiary	Form 6 or 7 with good pass in English, Math's and Science or work experience	Face- Face	Diploma of Environmental Studies
University of Technology, PNG	MSc	Solid Waste Management and Resource Management	Tertiary	Bachelor's degree in sciences or equivalent or related field with experience in Civil Engineering works.	Face -Face	Master of Science in Solid Waste and Resource Management
University of Technology, PNG	TFT432	Design and Monitoring of Water and Wastewater Systems	Tertiary		Face -Face	Bachelor of Science (Food Technology)

Fiji

There were eight accredited waste management courses identified in Fiji (see **Table 4**). The courses identified include short courses, diploma level courses, undergraduate courses, and a postgraduate course.

Table 4 Waste management courses in Fiji

Higher Education Institute	Program	Level	Course Code	Course Title
FNU - National Training and Productivity Centre	Certificate in Environmental Management and Green Productivity	Short Course	PQEM0021C	1. Integrated Waste Management in Hotels & Resorts
	Certificate in Environmental Management and Green Productivity	Short Course	PQEM	2. Waste Management and Pollution Control
FNU, College of Agriculture, Fisheries and Forestry	Diploma in Animal Husbandry	Diploma	ASM501	3. Livestock Waste Production and Management
FNU, College of Medicine Nursing and Health Science	Bachelor of Environmental Health	Undergraduate	EVH607	4. Solid Waste Management
	Bachelor of Environmental Health	Undergraduate	EVH612	5. Solid Waste Management
	Postgraduate Diploma in Environmental Health.	Postgraduate		6. Solid Waste Management
FNU, College of Engineering, Science and Technology	Bachelor of Engineering (Honours)	Undergraduate	CEB7078	7. Water and Wastewater Engineering
USP, Faculty of Science, Technology and Environment	Bachelor of Science (Geotechnical Engineering)	Undergraduate	CV362	8. Water & Wastewater Engineering

Short Courses in Waste Management

Two-day courses from the Environmental and Green Productivity Certificate program accredited to FNU were offered. This course is no longer offered by FNU. A short course in Waste Management and Pollution Control is currently offered twice yearly and on demand.

The course has three learning outcomes:

1. Implement the productive use of local resources through proper integrated waste management.
2. Identify methods for applying GP concepts and practices in waste management.
3. Realize the link between waste management and efficient use of resources.

Competency units for this short course include:

- Understanding end-of-pipe approach vs pollution prevention.
- Overview of environment laws related to pollution waste disposal and recycling.
- Application of waste minimization practices.
- Waste management and pollution prevention case studies.

Diploma Course

The College of Agriculture, Fisheries and Forestry of FNU offers a Trade Diploma in Animal Husbandry that includes a number of competency units that address organic waste and farm waste management. Competency units for this course include:

- the introduction to manure production by farm animals
- the quantity of manure produced per animal
- manure collection and storage
- manure production management
- the biological treatment of manure
- use of biodigester to treat manure
- chemical treatment of manure
- land application of manure
- strategies for managing animal waste
- other farm waste products and their disposal methods
- disposal of other farm waste products
- carcasses disposal
- management of piggery odour and manure
- use of pig and poultry wastes
- strategies to achieve air quality in poultry's buildings
- dust and fly control in feedlots.

Undergraduate Courses

The College of Medicine, Nursing and Health Science at the School of Public Health and Primary Care offer three out of the four undergraduate courses at the Fiji National University.

Course Name	Course Number	Degree	Year Offered	Description
Solid Waste Management	EVH 602	Bachelor of Environmental Health		Offered in the second year of the Bachelor of Environmental Health program introduces the different types of wastes and their sources.
Solid Waste Management	EVH 612	Bachelor of Environmental Health		Offered in its third year of study covers the identification of different types of wastes from solid, liquid, hazardous, wastewater, toxic, clinical, e-waste, etc. and their sources. Projects include sorting waste and classifying at different settings such as the home, office, cafeteria, etc.
Water and Wastewater Engineering	CEB 7078	Bachelor of Engineering (Honors)		This course is offered in the third year of the undergraduate programme which also requires a pass in the Fiji Secondary School Year 13 subjects such as mathematics, physics and chemistry or technology.

The Faculty of Science, Technology and Environment at the University of the South Pacific offers a course in Water & Wastewater Engineering (CV 362). The course is offered in the third year of the Bachelor of Science in Geotechnical Engineering.

Course Name	Course Number	Degree	Year Offered	Description
Water & Wastewater Engineering	CV 362	Bachelor of Science in Geotechnical Engineering	Precise date could not be determined during this review	The learning outcomes includes: <ul style="list-style-type: none"> • explaining the chemical and biological concepts, and microorganisms in water and wastewater. • illustrate the fundamentals of water and wastewater treatment, describe different water and wastewater treatment processes, and critically compare them in terms of quality and environment. • compare emerging technologies for advanced wastewater treatment and water recycling. • formulate a preliminary design of a water and/or wastewater treatment plant. • modelling of water quality and wastewater data.

Postgraduate Course

FNU offers Fiji's only postgraduate Diploma in waste management, which was developed and implemented as part of the SPREP Global Environment Facility- Pacific Alliance for Sustainability (GEFPAS) / Agence Française de Développement (AFD) Project.

It has a total of 5 modules and the requirement for a country project enabling regional participants to propose different types of disposal system suitable for their country considering their countries' soil type, land space etc.

The postgraduate diploma had three major courses that include Waste science, Management and Waste in the Pacific.

Samoa

The National University of Samoa (NUS) had offered an undergraduate course Solid Waste Management (HEH302) under the Bachelor of Health Science program in the Faculty of Health Science. This course is no longer offered.

Solid Waste Management is currently addressed as a two-week component in one of their Bachelor of Science undergraduate level Biology courses (HBI312 Environment Conservation) as part of their Environmental Science programme. This component includes lectures, tutorials, and fieldwork.

Sub-topics for this component include:

- Waste streams, (municipal, industrial, hazardous waste, mining, packaging, end of life vehicles and waste electronic equipment),
- Source of each waste stream, the amount generated,
- Environment relevance of each Solid Waste Stream and the Management of each Waste Stream.
- Local and International Policies/Legislations/Conventions dealing with these wastes.

The fieldwork involves several field visits:

- to MNRE's Division of Conservation to consult with the staff regarding the status of solid waste management practices in Samoa.
- to Tafa'igata Landfill to see firsthand the Fukuoka Method that MNRE employs to deal with organic waste, sludge, and medical wastes.

Wastewater is currently addressed in two of their Bachelor of Science courses:

- Microbial Structures and Functions (HBI212) covering the roles of microbes in the wastewater treatment process.
- Advanced Environmental Chemistry (HCH332) analyzing the chemical content of wastewater samples. These two courses are also part of their BSc major /minor in Environmental Science programme.

Solomon Islands

The Solomon Islands National University offers a Diploma of Environmental Studies through the Faculty of Agriculture, Fisheries and Forestry. This course started in 2018 and is offered in the first semester of every year. It is equivalent to fifteen credit points and is delivered in face-to-face mode over fourteen weeks.

The diploma includes the following learning outcomes:

1. Define and explain waste management.
2. Identify, describe, and discuss different types of waste streams, characteristics, and their sources.
3. Describe and discuss the importance of managing solid and liquid wastes.
4. Explain and discuss Solid waste generation per capita and its applications locally, regionally, and internationally such as Income Level.
5. Identify and discuss problems associated with wastes (economic, social, human health and environmental).
6. Discuss the challenges associated with wastes locally, regionally, and internationally.
7. Explain the different components of waste management system.
8. Discuss and analyze the different methods of waste disposal based on their characteristics.
9. Discuss the concept of Integrated Waste Management System and apply them in their workplaces.
10. Discuss and make recommendations on the policies and legal framework governing waste management locally, regionally, and internationally.

The competency units covered each week are:

- Introduction to and definition of waste Management
- Sources and Characteristics of different types of Municipal Solid streams waste
- Municipal solid waste Generation per capita, locally, regionally, and internationally.
- Types of Municipal Solid Waste, their drivers and the impact on the Environment and human health.
- Waste Management Cycle (4Rs): including collection, transportation, treatment, and disposal at landfill.
- Types of Solid waste treatment- composting, recycling, incineration, and Landfill.
- Sources, characteristics of different liquid waste streams and their treatments.
- One week break
- Definition, Sources, and characteristics of different types of hazardous waste.
- Treatment, storage, and disposal of Hazardous waste
- Types and characteristics and treatment of Healthcare wastes
- Institutional legal framework solid waste Management in SI.
- National Policy and legal framework on Waste Management and Pollution control in Solomon Islands and International Conventions on Waste Management.

There are plans for SINU to develop an undergraduate level course in waste management as part of the Bachelor in Environmental Studies programme.

Papua New Guinea

A Master of Science Programme in Solid Waste and Resource Management was offered for the first time in 2017 at the University of Technology Papua New Guinea. The courses are delivered both through face to face and distance learning (online) classes. **Table 5** provides a list of core courses required to complete the MSc program and the learning outcomes expected from each course.

Table 5 Waste management courses under the MSc programme in PNG

Unit Title	Learning outcomes
CEME514 Recycling and Resource Management	<ul style="list-style-type: none"> Assess on recycling and resource management possibilities Estimate cost analysis on recycling and resource management Deliver case study on best practice of recycling and resource management Identify threats, hazards of as is practices and with recycling Deliver a project on PNGs recycling and resource management portfolio.
CEME531 Introduction to Solid Waste Management	<ul style="list-style-type: none"> Determine different composition of waste generation Identify international regulations Determine biological treatment Discuss principles of waste management Identify technologies appropriate to changing environment.
CEME532 Hazardous Waste Management	<ul style="list-style-type: none"> Characterize and classify hazardous waste Calculate thermal and energy recovery Identify alternative hazardous waste management program Perform treatment and disposal of hazardous waste.
CEME533 Waste Management Systems	<ul style="list-style-type: none"> Plan waste management in system view Identify pollution and its prevention using proven methodology Calculate economic evaluation of pollution prevention Assess of investment portfolio on various manufacturing processes waste disposal Monitor and prevention of impact of solid waste to the environment.
CEME538 Mining Waste Management	<ul style="list-style-type: none"> Characterise minimising waste Assess risk of mining facilities Review of techniques for the prevention of abatement of pollution generated by mining waste Use at least two decision management support tools for minimizing the impact of mining waste
CEME541 Special Waste Management	<ul style="list-style-type: none"> Design hazardous health care from hazardous waste and Identify potential health hazards Audit industrial health program Deliver special waste management project.
CEME516 Thesis	<ul style="list-style-type: none"> Identify solid waste and resource management project involving investigation, research and/or field laboratory execution. Plan and perform a detailed schedule of activities (from start to finish) of the project Apply skills and knowledge in the execution of the project Present the thesis and objectives in an organized research seminar. Create and produce a written thesis and preliminary discussions.
CEME535 Final Disposal/ Land Filling in Developing Countries	<ul style="list-style-type: none"> Plan and design landfill Design methodologies on landfill construction on latest technologies Describe a landfill system appropriate to PNG setting Deliver case studies of landfill system from at least 2 different developing countries Evaluate future energy production, maintenance, emission control and treatment.
CEME539 Sustainable Production Technologies	<ul style="list-style-type: none"> Plan sustainable development and sustainable production Evaluate impact of production process on the environment Prepare and assess sustainable production process in an industrial setting Deliver CDM project Tap or propose opportunities-financing economies of CDM
CEME540 Environmental Management Systems	<ul style="list-style-type: none"> Audit environmental impact using EMAS,EMS, ISO 1400 and ISO 14001 Develop a mock EMS manual for an organization Implement ISO 1400 compliant EMS within organization

III. Other waste management training programs in the Pacific region

CROP agencies and International agencies have utilised waste management experts to develop waste management courses for delivery through funded development programmes. **Annex E** includes details of the various courses that have been provided in the region over the past few years.

Solid waste management training has targeted numerous audiences, including:

- communities
- technical waste management workers
- policy or decision makers in government

Specific waste management training has addressed issues of management of disaster waste, recyclables, hazardous waste, organic waste, and wastewater.

Figure 3 indicates that the largest proportion of waste management training is focused on general solid waste management.

Figure 3 Training provided by CROP type agencies by priority PacWastePlus waste stream.

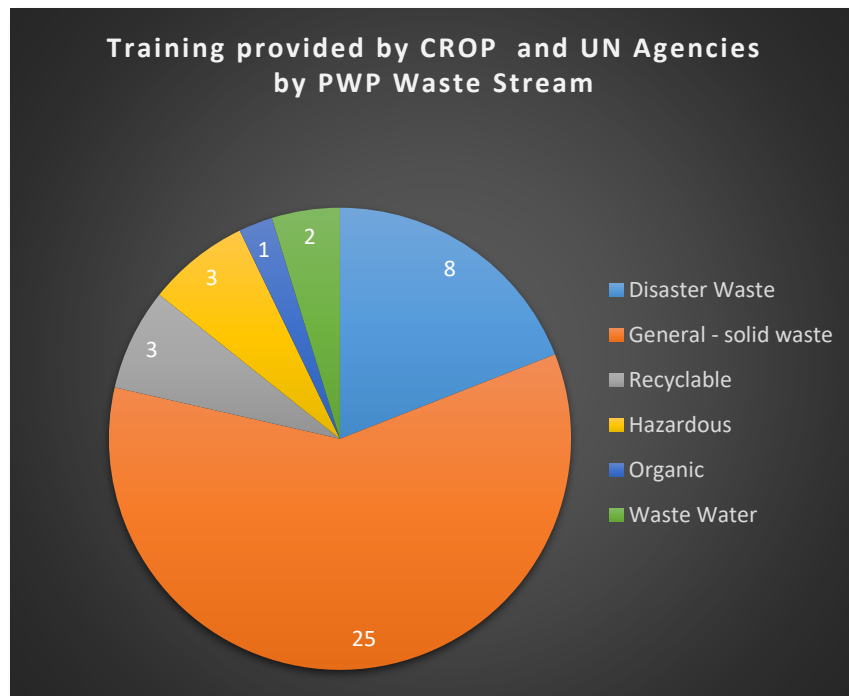
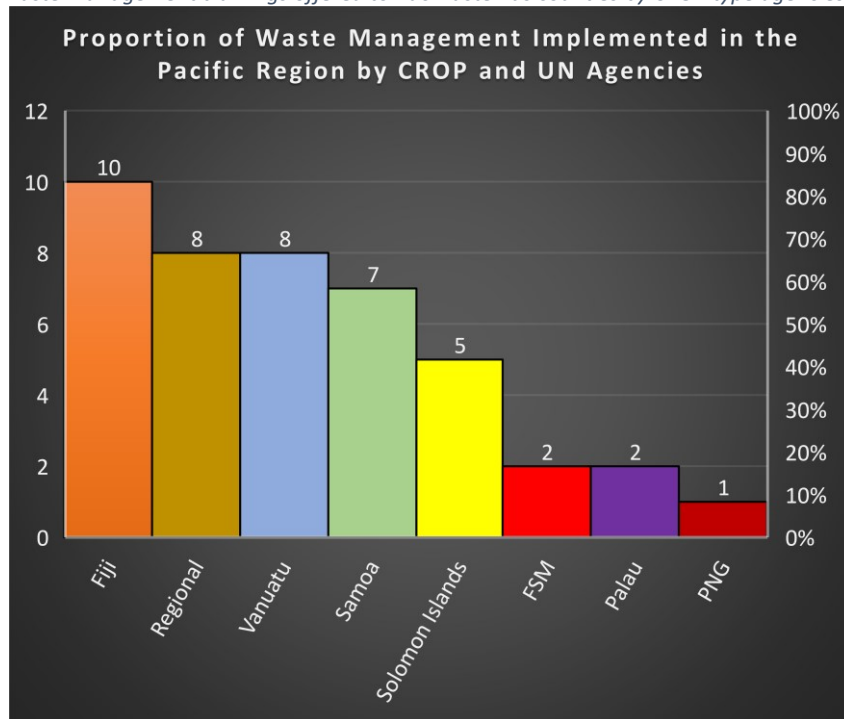


Figure 4 reveals that the highest number of recent CROP agency trainings have been implemented for Fiji, Vanuatu, and Samoa. Regionally focused trainings include representatives from the PacWastePlus countries.

Figure 4 Number of waste management trainings offered to PacWastePlus counties by CROP type agencies.



Annex C provides a list of waste management training, conferences and workshops provided by CROP and UN agencies to the Pacific island countries.

Table 6 provides a list of CROP and other training programs from **Annex C** with its description and objectives that can be utilised to develop accredited courses and programs are listed below:

Table 6 List of waste management trainings by CROP and other agencies that can be adapted into accredited courses.

PACP/ SPREP Country	Partner Organisations/Agencies	Donor	Title	Location	Training Type	Training Description/Objective	Duration	Delivery Date
Vanuatu	SPREP, JICA/J-PRISM II, University of Newcastle	Canadian Funding for Local Initiatives, JICA	Training on Disaster Waste Management	Port Vila, Vanuatu	Training of Trainers	To improve disaster response and manage disaster wastes. The training programme involved removing salvageable material from disaster waste. The training includes identifying and handling dangerous materials, such as asbestos and household chemicals.	4 days	18 th -22 nd November 2019
Vanuatu	SPREP, JICA/J-PRISM II, University of Newcastle	JICA, JPRISM II	Training on Disaster Waste Management	Port Vila, Vanuatu	Specialised training	To develop contingency plans for the management disaster waste.	5 days	2 nd - 6 th March 2020
Vanuatu	APWC- Asia Pacific Waste Consultants, Port Vila Municipal Council (PVMC) and LMC		Phase I – extensive waste-audit and data- collection	Port Vila, Vanuatu	Specialised training	Training included: <ul style="list-style-type: none"> • Development of waste audit protocols • Collection of samples and completing corresponding paperwork, • Sorting of garbage and recycling, • Material identification, • Data collection, • Stakeholder interviews. 	1 day	18 th November
Vanuatu	APWC- Asia Pacific Waste Consultants, PMVC, Ministry of Environment and Provincial Government		Phase II – extensive waste-audit and data- collection	Port Vila, Vanuatu	Specialised face-to-face training.	The objectives of the training were to: <ul style="list-style-type: none"> • Enhance the understanding of waste data, using data to make decisions, and undertaking ongoing data collection activities to help achieve better waste management outcomes: • Improve co-ordination and communication between government departments, • Enhance technical capacity of waste management staff to meet the needs of future planned activities. 	3 days	19 th February

IV. International accredited waste management training courses relevant to the region

There is an abundant supply of internationally accredited vocational type courses offered by professional waste management institutes and associations.

The results of this section are divided into:

1. vocational and tertiary accredited courses in Australia and New Zealand
2. vocational short waste management courses offered by professional training providers from around the world.

Accredited Waste Management Courses in Australia and New Zealand Higher Education Institutes

Table 7 lists the vocational courses in waste management offered by professional waste management organisations in the Pacific.

Table 7 Accredited in waste management offered by professional waste management organisations

Course	Training Provider	Core Competency Units	Electives
Certificate III Waste Management CPP30719	Academy Green Learning, Fusion Training Solutions, National Training Organization Pty Ltd, OCTEC Ltd	<ul style="list-style-type: none"> • CPPWMT3001 - Identify and segregate waste • CPPWMT3002 - Conduct waste resource recovery • CPPWMT3003 - Identify and respond to hazards and emergencies in waste management • TLIF1001 - Follow work health and safety procedures 	<ul style="list-style-type: none"> • CPPWMT3004 - Comply with environmental protection requirements when transporting waste • CPPWMT3005 - Maintain storage area for waste management equipment and consumables • CPPWMT3007 - Process waste using plant • CPPWMT3008 - Store and monitor contained waste • CPPWMT3011 - Conduct waste assessments • TLID1001 - Shift materials safely using manual handling methods • TLIF2010 - Apply fatigue management strategies • BSBCUS301 - Deliver and monitor a service to customers
Certificate III Waste Management CPP30711 (Superseded by CPP30719)	Academy Green Learning, OCTEC Ltd, Box Hill Institute, Fusion Training Solutions, TAFE NSW	Unavailable	Unavailable

Course	Training Provider	Core Competency Units	Electives
Certificate IV Waste Management (CPP40919)		<ul style="list-style-type: none"> BSBSUS401 - Implement and monitor environmentally sustainable work practices BSBWHS307 - Apply knowledge of WHS laws in the workplace CPPCMN4003 - Establish, develop and monitor teams CPPWMT3002 - Conduct waste resource recovery CPPWMT3003 - Identify and respond to hazards and emergencies in waste management CPPWMT4001 - Develop proposals for waste management services CPPWMT4010 - Assess and advice on waste avoidance options 	<ul style="list-style-type: none"> CPPWMT4002 - Develop waste management plans CPPWMT4007 - Organize and monitor waste management operations CPPWMT4009 - Conduct waste audits BSBLDR401 - Communicate effectively as a workplace leader BSBLDR402 - Lead effective workplace relationships
Certificate course in Collect waste refuse or recyclables LGAHRW201A (Certificate III Local Government and Environment)	Canberra Institute of Technology	Unavailable	Unavailable
Certificate Course in Cover Waste CPPWMT3021A (Certificate III Waste Management - CPP30711)	Centre of Appropriate Technology Inc. (CAT)	Unavailable	Unavailable
Diploma of Waste Management CPP5081 (Deleted)	No Training Provider however details of course found in Australian Government Department of Education, Skills and Employment	<ul style="list-style-type: none"> BSBLED502A - Manage programs that promote personal effectiveness BSBOHS509A - Ensure a safe workplace BSBRKS501A - Manage risk CPPCMN4001B - Develop workplace policies and procedures for sustainability CPPWMT5004A - Develop waste management strategies CPPWMT5036A - Develop waste management plans CPPWMT5045A - Develop site safety plans CPPWMT5058A - Develop emergency response plans 	<ul style="list-style-type: none"> BSBMGT615 - Contribute to organization development CPPWMT5033A - Educate public on waste management issues CPPWMT5043A - Develop and implement an environmental management strategy CPPWMT5057A - Develop landfill rehabilitation plans CPPWMT5061A - Plan resource recovery BSBADM504 - Plan or review administrative systems BSBATSIM505 - Control organization finances BSBATSIW416 - Obtain and manage consultancy services BSBCUE604 - Develop and maintain a service level strategy BSBCUS501 - Manage quality customer service BSBFIM501 - Manage budgets and financial plans BSBHRM402A - Recruit, select and induct staff BSBHRM503B - Manage performance management systems BSBHRM504A - Manage workforce planning BSBINM501 - Manage an information or knowledge management system

Course	Training Provider	Core Competency Units	Electives
			<ul style="list-style-type: none"> • BSBINN502 - Build and sustain an innovative work environment • BSBITB501A - Establish and maintain a workgroup computer network • BSBMGT502 - Manage people performance • BSBMKG608 - Develop organizational marketing objectives • BSBSLS501 - Develop a sales plan • BSBSLS502 - Lead and manage a sales team • BSBWOR501 - Manage personal work priorities and professional development • CPPWMT5031A - Prepare detailed tenders • LGACOM602B - Coordinate and facilitate a change process • LGACORE603B - Represent council's role and value in the community • LGAEHRR509A - Undertake environmental and nuisance controls • LGAEHRW507A - Plan and coordinate a waste collection or recycling service • LGAEHRW603B - Coordinate the implementation of council's waste management strategy • TAEDES401 - Design and develop learning programs
Undergraduate course in Solid Waste Management CVEN9872	University of New South Wales, Faculty of Engineering, School of Civil & Environmental Engineering, Bachelor of Civil Engineering program	Unavailable	Unavailable
Undergraduate course in Hazardous Waste Management 6208ENG	Griffith University, Faculty of Engineering, School of Civil & Environmental Engineering	Unavailable	Unavailable
Undergraduate course in Solid Waste Engineering 3202ENG	Griffith University, Faculty of Engineering, School of Civil & Environmental Engineering	Unavailable	Unavailable
Postgraduate Course in Solid Wates Management 7412ENG	Griffith University, Faculty of Engineering, School of Civil & Environmental Engineering	Unavailable	Unavailable
Postgraduate course in Hazardous Waste Management 7408ENG	Griffith University, Faculty of Engineering, School of Civil & Environmental Engineering	Unavailable	Unavailable
Diploma course in Water and Waste Management ENGGDE6206 (Diploma in Engineering (Civil))	UNITEC Institute of Technology, NZ	Unavailable	Unavailable
Graduate Program in Waste Management	Waste Management, NZ	Unavailable	Unavailable

Table 8 Short courses in waste management offered by professional waste management organisations

Training provider	Course Type	Course duration	Course title/content	Asbestos	E-waste	Healthcare waste	Recyclable	Organic	Disaster	Bulky	Waste water
WMRR – Waste Management Resources Recovery of Australia	2020 Webinar Series	1 hour	Energy from Waste, Indigenous Waste Management, Recycling and Resource Recovery, Litter & Illegal Dumping, Collection, Product Stewardship, Circular Economy				✓	✓	✓	✓	
Allen's Training	Statement of Attainment	2 weeks	Course in Safe Handling of Sharps and Infectious Waste			✓					
Environment Science Solution	Statement of Attainment	2 weeks	Radiation Safety Training		✓						
WASTEMINZ - (NZ Transport Agency)			Kerbside Collection Traffic Leader				✓	✓	✓	✓	
(Waste Management NZ)			Landfill Operators Course				✓	✓	✓	✓	✓
(Zero Waste)			Introduction to Resource Recovery	✓	✓	✓	✓	✓	✓	✓	✓
			Resource Recovery Management	✓	✓	✓	✓	✓	✓	✓	✓
(Learning Cloud)			Environmental Waste Management	✓	✓	✓	✓	✓	✓	✓	✓
(Massey University, by long distance learning)			Zero Waste paper				✓				
AELERT - Australasian Environmental Law Enforcement and Regulators network.	Webinar	1 hour	Improve and Inspire - Best Practice Composting					✓			
	Self-space eLearning	5 - 8 hours	Compost Facility Management					✓			
	Self-space eLearning	3 hours	Multi-agency Asbestos Education Program	✓							
	Online	5 weeks	Develop an illegal dumping project				✓	✓	✓	✓	
	Face to face	1 day	Introduction to Waste and Resource Recovery Facilities				✓	✓	✓	✓	
	Face to face	1 day	Waste and Resource Recovery Facilities training - Supervisors and Managers				✓	✓	✓	✓	
Courses for success	Online	8 - 10 hours	Environmental Waste Management				✓	✓		✓	

Training provider	Course Type	Course duration	Course title/content	Asbestos	E-waste	Healthcare waste	Recyclable	Organic	Disaster	Bulky	Waste water
SWANA - Solid Waste Association of North America	Hybrid learning	4 - 5 weeks	Advanced Leachate Management and Bioreactor Landfills								✓
	Hybrid learning	4 - 5 weeks	Manager of Landfill Operations	✓	✓	✓	✓	✓	✓	✓	✓
	Hybrid learning	4 - 5 weeks	Managing Composting Programs					✓			✓
	Hybrid learning	4 - 5 weeks	Managing Integrated Solid Waste Management Systems	✓	✓	✓	✓	✓	✓	✓	✓
	Hybrid learning	4 - 5 weeks	Managing Municipal Solid Waste Collection Systems	✓	✓	✓	✓	✓	✓	✓	✓
	Hybrid learning	4 - 5 weeks	Managing Recycling Systems				✓				
	Hybrid learning	4 - 5 weeks	Landfill Gas Systems Operations & Maintenance				✓	✓	✓	✓	✓
	Hybrid learning	4 - 5 weeks	Zero Waste Principles & Practices	✓	✓	✓	✓	✓	✓	✓	✓
	Hybrid learning	4 - 5 weeks	Managing Construction & Demolition Materials						✓	✓	
	Hybrid learning	4 - 5 weeks	Managing Leachate Recirculation & Bioreactor Landfills								✓
CIWM - Chartered Institute of Waste Management	Virtual program - scheduled	2 weeks	Hazardous waste regulations	✓	✓	✓					
	Virtual program - scheduled	2 weeks	Hazardous waste - Classification and coding	✓	✓	✓					
			Management of Hazardous Waste	✓	✓	✓					
			Special waste regulations	✓	✓	✓					
			Special waste - Classification and coding	✓	✓	✓					
			Practical Management and Control of Landfill Gas								✓
			Leachate Management								✓
			Practical Aspects of Ground Water and Landfill Gas Monitoring								✓
		Landfills closure, aftercare and economy								✓	

Training provider	Course Type	Course duration	Course title/content	Asbestos	E-waste	Healthcare waste	Recyclable	Organic	Disaster	Bulky	Waste water
ISWA – International Solid Waste Association	Professional Certification program		International Waste Manager Certification	✓	✓	✓	✓	✓	✓	✓	✓
ICERMS - International Centre for the Environment, Resource Management & Sustainability	Certificate		Principles of Sustainable Resource Management	✓	✓	✓	✓	✓	✓	✓	✓
	Scottish Vocational Qualification		Waste Management Operations - Managing Physical and Chemical Treatment - Hazardous Waste	✓	✓	✓	✓	✓	✓	✓	✓
			Waste Management Operations - Managing Physical and Chemical Treatment - Non-Hazardous Waste	✓	✓	✓	✓	✓	✓	✓	✓
			Waste Management Operations - Managing Transfer - Hazardous Waste	✓	✓	✓	✓	✓	✓	✓	✓
			Waste Management Operations - Managing Transfer - Non-Hazardous Waste	✓	✓	✓	✓	✓	✓	✓	✓
			Waste Operations - Waste Collection Driver	✓	✓	✓	✓	✓	✓	✓	✓
			Waste Operations - Waste Collection Operative	✓	✓	✓	✓	✓	✓	✓	✓
			Waste Operations - Waste Site Operative	✓	✓	✓	✓	✓	✓	✓	✓
			Waste Operations - Waste Team Leader	✓	✓	✓	✓	✓	✓	✓	✓
			Waste Operations - Waste Weighbridge Operative	✓	✓	✓	✓	✓	✓	✓	✓
			Waste Supervisory Management	✓	✓	✓	✓	✓	✓	✓	✓

SUMMARY OF STOCKTAKE RESULTS

There is a limited supply of tertiary or vocational accredited courses and/or programmes available in the region.

Details of the identified accredited courses show that waste management primarily focusses on solid waste management and wastewater management. There is a limited coverage of disaster waste and bulky waste streams. However, CROP agencies have somewhat met this gap by focusing on disaster waste management through non-accredited training provision.

Professional waste management organisations offer vocational online waste management training courses and programs accredited to their respective institutes which could be adapted to suit the issues faced in the region.

APPENDIX A QUESTIONNAIRE/SURVEY

PacWastePlus Programme – Questionnaire for Stock Take of Current and previous Tertiary and Vocational Waste Management Courses in the Pacific Region

The Pacific – European Union (EU) Waste Management Programme, (PacWastePlus), a EUR 16.5 million programme, funded by the European Union and implemented by the Secretariat of the Pacific Regional Environment Programme (SPREP), will generate improved economic, social, health and environmental benefits by enhancing existing activities and building capacity and sustainability into waste management practices. PacWastePlus would like to carry out a first ever stock take of waste management training courses in the Pacific. This will describe the status of waste management skills and competencies training available in the Pacific and inform the development of academic and professional waste management training needs in the Pacific island countries.

The programme has engaged the Institute of Applied Sciences (IAS) at the University of the South Pacific (USP), through a service agreement to undertake a stock take of all the current tertiary and vocational waste management courses in the Pacific Region. The aim of this questionnaire is to take stock of the current courses in waste management and determine the priority areas for waste management training that needs to be developed to build the capacity of the Pacific region to govern, enforce and manage waste against minimum required standards.

Scope and Purpose of the Stock Take

The questionnaire aims at providing information to the following:

- **Confirm the course outline and content of waste management courses available in Higher Education Institutes**
- **Confirm the relevance of current course to PacWastePlus priority waste streams i.e., hazardous wastes (specifically asbestos, E-waste and healthcare waste); solid wastes (specifically recyclables, organic waste, disaster waste and bulky waste); and related aspects of wastewater (water impacted by solid waste).**
- **What is the current capacity (course coordinator and expectation details) the higher education institutes of the Pacific Region to deliver waste management courses and programs in the future?**

Structure

The questionnaire is divided into four sections;

- the course details,
- the course content,
- the course coordinator details
- the student responsibilities and
- the course evaluation.

Instructions

The questionnaire can either be sent via email to university contacts or course coordinators; or the course coordinator can be contacted directly either virtually or by phone for a one-on-one interview to complete the questionnaire.

STOCK TAKE QUESTIONNAIRE

1. COURSE CONTENT CONFIRMATION– WASTE MANAGEMENT

1.1. Course Details

1)	Course Code:	
2)	Course Title:	
3)	Course Type (Vocational/Tertiary)	
4)	Prerequisite to the course:	
5)	Course Accreditation level (Certificate, Diploma...Masters):	
6)	Course duration:	
7)	Course Delivery Mode:	
8)	Course Assessment (Continuous assessment %; Examination %):	
9)	Field Experience (Yes or No)	
10)	Course Credit Points	
11)	What is the cost of this course?	
12)	When was the course first offered?	
13)	How often is the course offered?	

1.2. Course Content:

1) Course learning outcomes

On successful completion of this course, students should be able to:

- 1.
- 2.
- 3.

2) Graduate outcomes

For example, the USP graduate outcomes are as follows:

1. **Communication:** Graduates will be able to communicate ideas clearly and persuasively in structured formats using language and other modes of communication that are appropriate for context, audience and specific disciplinary conventions.
2. **Creativity:** Graduates will extend boundaries of current knowledge in a particular discipline or profession.
3. **Critical thinking and quantitative reasoning:** Graduates will be able to evaluate multiple perspectives and arrive at a reasonable independent judgement based on evidence.

4. **Ethics:** Graduates will demonstrate a commitment to high ethical standards in scholarly, professional and socio-cultural practices.
5. **Pacific consciousness:** Graduates will recognize the cultural heritage and diversity of Pacific societies for sustainable development in a contemporary environment.
6. **Professionalism:** Graduates will demonstrate the ability to carry out tasks to acceptable standards within their profession and occupations.
7. **Teamwork:** Graduates will work together in a respectful and collaborative manner to complete tasks within teams to achieve an outcome.

3) Course Description/Subject Content:

Focus for Each Week	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	

- 4) For each of the following 8 streams of waste, what percentage of the course covers the following waste streams, and what are their relevant learning outcomes (theory and practically);
 - i. Asbestos
 - ii. E-waste
 - iii. healthcare waste
 - iv. recyclables
 - v. organic waste
 - vi. disaster waste
 - vii. bulky waste
 - viii. wastewater (water impacted by solid waste).
- 5) What is the relevant list of textbooks and learning resources required for the course?
- 6) Are there any tools, equipment or supplies required for the delivery of the course?
- 7) Alignment of learning outcomes, activities, and assessment

The following table demonstrates the alignment of the course learning outcomes to appropriate activities and assessments and the links to programme and USP graduate outcomes.

<i>Course Learning Outcome</i>	<i>Associated Teaching and Learning Activities</i>	<i>Assessment</i>	<i>Programme Outcomes</i>	<i>University Graduate Outcomes</i>

1.3. Course Coordinator Details:

1)	Name:	
2)	Position:	
3)	Department:	
4)	Faculty:	
5)	Institute:	
6)	State/Province: Country:	
7)	How long have you been teaching the course?	
8)	What is the average class roll?	
9)	What is the lifespan/sustainability of this course?	
10)	Which of the PacWaste Plus priority waste streams are addressed by this course?	
11)	What other topics does this course cover that are not waste related? (Finance, probity, data management, monitoring, communications)	
12)	Does the completion of this course qualify for internationally recognized certification?	

1.4. Course Evaluation (Coordinator/Past Students):

1.4.1. Course Content:

- 1) Does the course description accurately capture the types of duties a graduate can expect to perform in the work environment?
- 2) Is the time allocated to the course sufficient, excessive, or inadequate?
- 3) Are there specific learning outcomes not particularly relevant to the course, identify them?
- 4) Were there specific learning outcomes you feel need to be strengthened, or topic areas that could be added to the course?
- 5) Is there an adequacy of balance between theory (i.e., classroom) and practice (i.e., lab/shop/fieldwork) within the course?

1.4.2. Course Resources:

- 1) Were the tools, equipment and/or supplies used for practical components of the course satisfactory for course delivery (i.e., do they support the learning outcomes of the course?)
- 2) Were the textbooks provided adequate for course delivery (i.e., do the textbooks appear current and/or relevant for training in this field?)
- 3) Were there adequate learning resources (e.g., print media, audio-visual materials) provided for the course delivery and to actively engage students.
- 4) Which specialized equipment, textbooks, software, or other resources which you feel are not listed but would strengthen the delivery of this course, please identify those resources.

1.4.3. Course Instruction/Assessment Methods:

What is the Assessment Portfolio?

TYPE OF ASSESSMENT	WEIGHT	Comments/Rationale	LEARNING OUTCOME
CONTINUOUS ASSESSMENT - <<e.g., 50% >>			
FINAL EXAMINATION - <<e.g., 50% >>			

- 1) What is the passing unit?

In order to be awarded a pass in this unit, students must:

- Achieve an overall mark of at least 50% in the course.
- <<insert other details>>

- 2) What is the grade distribution?

A+	A	B+	B	C+	C	D	E
85-100	78-84	71-77	64-70	57-63	50-56	40-49	0-39

- 3) What are the assessment policies and regulations?
- 4) Are the instructional materials model appropriate for work habits in industry, and were the course content/learning activities consistent with industry practices?
- 5) Are the methods of assessments used for this course appropriate (i.e., is there an adequate balance of theoretical and practical assessments conducted for each course?).
- 6) Are there any recommendations for additional assessment methods which would ensure student competency, identify these?
- 7) What combination of training/qualifications and experience do you feel will be required for potential instructors hired to teach this course?

1.4.4. Course Completion Requirements:

- 1) Are the requirements for successful completion (e.g., passing grades of courses, work term completion) sufficient for the course?

1.5. Student Expectations and Responsibilities

1.5.1. Responsibilities:

(if applicable, insert details. An example is shown below.)

Students are expected to:

- *Spend enough time on Moodle and other activities required in the course*
- *Attend all lectures, workshops, team meetings etc. unless hampered by illness in which case you must inform your course coordinator and team members.*
- *Arrange with the team members to work in their own times on the project.*
- *Maintain proper attire for the laboratory, clothing, shoes etc.*
- *Facilitate the course coordinator with any proof that he/she was sick and unable to attend classes or assessment at the earliest possible time to avoid getting a zero mark for the missed assessment.*

1.5.2. Student Workload:

TYPE	Hours	Comments
TOTAL		

1.6. Additional Comments

Provide any additional comments regarding this course you feel have not been previously addressed.

END OF QUESTIONNAIRE

APPENDIX B LIST OF HEIs

Country	Category of HEI	Name of HEI
American Samoa	Vocational	American Samoa Community College, Mapusaga
	Tertiary	Wayland Baptist University, Tafuna
	Vocational	US Army Reserve Training Centre
Cook Islands	Tertiary	Cook Islands Tertiary Training Institute
	Tertiary	USP Cook Islands Campus
		Ministry of Education
		National Department of Health
Fiji	Tertiary	USP Main Campus - Laucala
	Vocational	Pacific TAFE - College of Science, Technology and Environment Programs
	Tertiary	Fiji National University
	Tertiary	FNU - National Training and Productivity Centre
	Tertiary	University of Fiji
	Vocational	Pacific Open Learning Health Network
	Vocational	Ministry of Youth Training Centers - National Youth Training Centre Sigatoka
		Yavitu Training Centre Kadavu, Nasinu, Labasa, Savusavu
	Vocational	Centre for Appropriate Technology Development
	Vocational	Fiji Monfort Boys Town
	Vocational	Tutu Rural Training Centre
	Vocational	Fiji Maritime Academy - Fiji National University
	Vocational	Service Pro International Tourism Hospitality Institute
	Vocational	Datec Training Centre
	Vocational	Fiji Police Academy
	Vocational	Fiji Government Training Centre
	Vocational	Australia Pacific Training Coalition
	Vocational	Chevalier Training Centre
Vocational	Fiji Airways Training Centre	
Vocational	Pacific Flying School	
French Polynesia	Tertiary	University of French Polynesia
	Vocational	College La Mennaïas
FSM	Vocational	College of Micronesia
	Vocational	FSM Fisheries and Maritime Institute

Country	Category of HEI	Name of HEI
		National Department of Education
Guam	Tertiary	University of Guam
	Vocational	Guam Community College
Kiribati	Tertiary	USP Kiribati Campus
	Vocational	Fishing Training Centre
	Vocational	Marine Training Centre
	Vocational	APTC - Australian Pacific Training Coalition
	Vocational	Kiribati Teacher's College
	Vocational	Ministry of Education
Nauru	Tertiary	USP Nauru Campus
	Vocational	APTC - Australian Pacific Training Coalition
	Vocational	Queensland TAFE
New Caledonia	Tertiary	University of New Caledonia
Niue	Tertiary	USP Niue Campus
	Vocational	Niue High School
	Vocational	APTC
	Vocational	UNITEC Applied Skills Technology
	Vocational	St Clements University Higher Education School Niue
Northern Marianas	Vocational	Northern Mariana's College
Palau	Vocational	Palau Community College
	Vocational	Ministry of Education
PNG	Tertiary	University of Papua New Guinea, Port Moresby
	Tertiary	University of Technology, PNG
	Tertiary	University of Goroka, Goroka
	Tertiary	University of Natural Resources and Environment
	Tertiary	Divine Word University
	Vocational	Port Moresby Technical College
	Vocational	PNG Polytechnic Institute
	Vocational	Goroka Technical College
	Vocational	Mt Hagen Technical College
	Vocational	PNG Maritime College
	Vocational	Don Bosco Technical College
	Vocational	Vunabosco Technical High School
	Vocational	Malaguna Technical High School
	Vocational	Madang Technical College
	Vocational	Bulolo Forestry College
Vocational	Vocational Training Institutes (25)	
Vocational	La Salle Technical College	
Vocational	Australia Pacific Training Coalition	

Country	Category of HEI	Name of HEI
	Vocational	Sonoma Adventist College
RMI	Vocational	College of Marshal Islands
	Tertiary	USP Marshal Campus
	Vocational	Marshal Islands High School
	Vocational	Jaluit High School
	Vocational	Northern Islands High School
	Vocational	Laura High School
	Vocational	Kwajalein Atoll High School
Samoa	Tertiary	USP Alafua Campus
	Tertiary	National University of Samoa
	Tertiary	Oceania University of Medicine
	Vocational	Don Bosco Technical Centre
	Vocational	Uesiliana Technical & Vocational Centre
	Vocational	APTC - Australian Pacific Training Coalition
		Tesese Institute
	Vocational	Leulumoeaga Fou Arts School
Solomon Islands	Tertiary	USP - Solomon Islands Campus
	Tertiary	Solomon Islands National University, Honiara
	Tertiary	Solomon Islands College of Higher Education
	Vocational	Don Bosco Technical Centre
	Vocational	APTC - Australian Pacific Training Coalition
	Vocational	Rural Training Centers
	Vocational	MASE Business Training Centre
Timor Leste	Tertiary	Dili Institute of Technology
	Tertiary	Universidade Nacional Timor Lorosa'e (National University of East Timor)
	Tertiary	Universidade de Dili (University of Dili)
	Tertiary	Universidade Oriental Timor Lorosa'e (Oriental University of Timor East)
	Vocational	East Timor Coffee Institute
	Tertiary	Universidade da Paz (University for Peace)
Tokelau	Tertiary	USP Tokelau Campus
Tonga	Tertiary	USP Tonga Campus
	Tertiary	King's International University
	Tertiary	University of the Nations
	Tertiary	Tupou Tertiary Institute
	Vocational	Tonga Institute of Science & Technology
	Vocational	Tonga Institute of Higher Education
	Vocational	APTC - Australian Pacific Training Coalition

Country	Category of HEI	Name of HEI
	Vocational	Tonga Maritime Polytechnic Institute
	Vocational	Atenisi Institute
	Vocational	A'hopanilolo Technical Institute
	Vocational	Christ's University of the Pacific
	Vocational	Queen Salote College
	Vocational	Queen Salote Nursing Institute
Tuvalu	Tertiary	USP Tuvalu Campus
	Vocational	APTC - Australian Pacific Training Coalition
	Vocational	Tuvalu Maritime Training Institute
		Ministry of Education and Sport
	Vocational	Maretta Kabane Typing & Computer School
	Vocational	8 X Community Training Centers
	Vocational	Motufoua Secondary School
	Vocational	Fetuvalu Secondary School
Vanuatu	Tertiary	USP Emalus Campus
	Tertiary	Revan's University
	Tertiary	National University of Vanuatu
	Vocational	Vanuatu Institute of Technology
	Vocational	APTC - Australian Pacific Training Coalition
	Vocational	Vanuatu Institute of Teacher Education
	Vocational	Vanuatu Maritime College
	Vocational	Vanuatu Agriculture College
	Vocational	Vanuatu College of Nursing Education
	Vocational	30 Rural Training Centers
Wallis and Futuna	Tertiary	University de Wallis

APPENDIX C WASTE MANAGEMENT TRAINING ORGANISED BY CROP AGENCIES

PACP/ SPREP Country	Informal Training Providers (Main organisation)	Partner Organisations/Agencies	Funders	Course Title	Location	Training Type	Training Description/Objective	Duration	When was it offered
Regional		JICA, SPREP	JICA	3RINCS International Scientific Conference on Material Cycles and Waste Management	Bangkok, Thailand	Workshop	Training on the Pacific Regional Disaster Waste Management Guide development process and the status of waste indicators for monitoring purposes	4 days	27 th February - 1 st March 2019
Regional		JICA, SPREP	JICA	9th 3R Forum in Asia and the Pacific	Bangkok, Thailand	Workshop	Discussion of the transition to a circular economy and sufficiency economy (Kiribati, FSM, RMI, Palau, Samoa, Tonga, Tuvalu)	3 days	4 th - 6 th March 2019
Regional		JICA, SPREP	Coca-Cola, Avery Dennison, Ocean Recovery Alliance, the Plastic Circle	Plasticity Pacific Conference	Suva, Fiji	Workshop	To promote solutions for plastic pollution in the Pacific Island Countries including smaller communities	2 days	12 th - 13 th March 2019
Regional		JICA, SPREP	JICA, JPRISM II	Further Enhancement of Regional Capacity in Waste	Suva, Fiji	Workshop	Training opportunities and training systems provided by universities and development partners in the Pacific Region	1 day	21 st August 2018

PACP/ SPREP Country	Informal Training Providers (Main organisation)	Partner Organisations/Agencies	Funders	Course Title	Location	Training Type	Training Description/Objective	Duration	When was it offered
Regional		JICA, SPREP	JICA, JPRISM II	Promoting Disaster Waste Management at the Clean Pacific Roundtable	Suva, Fiji	Workshop	Disaster Waste Management Guidelines in Asia and the Pacific developed by the Ministry of Environment, government of Japan with the Society of Material Cycles and Waste Management (JSMCWM)	1 day	27 th July 2016
Regional	ILO	JICA, SPREP	ILO	Tackling daily dangers of waste management	Apia, Samoa	Train the Trainer	Occupational Safety and Health in Waste Management	1 day	17 th July 2013
Fiji	SPREP - JPRISM II		JICA, JPRISM II	Master Plan Workshop for Municipal Councils in Fiji	Suva and Lautoka, Fiji	Workshop	Waste management master plans to include waste management in rural areas that are outside their municipal boundaries.	3 days	11 th - 13 th September
Fiji	Institute of Applied Sciences, University of the South Pacific	Land Care Research, Wildlife Conservation Society, Conservation International, Fiji Environmental Law Association	EU - RESCCUE Project	Water Conservation, Waste and Wastewater and Livestock Management Action Plan for the Community of Dravuni, Ono, Kadavu	Kadavu, Fiji	Workshop	To develop Water Conservation, Waste and Wastewater and Livestock Management Action Plans for the selected community in Kadavu.	1 day	15 th June 2018

PACP/ SPREP Country	Informal Training Providers (Main organisation)	Partner Organisations/Agencies	Funders	Course Title	Location	Training Type	Training Description/Objective	Duration	When was it offered
Fiji	Institute of Applied Sciences, University of the South Pacific	Climate Change Working Group	Zero Emission Research Initiative Foundation - Geneva and USP	USP/ZERI Mushroom Workshop	Suva, Fiji	Lectures and practical sessions	An Integrated Biosystem (IBS) Approach to Organic Waste Chemistry	5 days	15 th to 19 th February 1999
Fiji	Institute of Applied Sciences, University of the South Pacific		Integrated Coastal Management Project - MacArthur Foundation	Waste Management Workshop, Votua Village Nadroga	Votua Village, Nadroga Navosa Province, Fiji	Workshop	To train the trainers on waste management and raise community awareness	2 days	26 th - 27 th January 2007
Fiji	Institute of Applied Sciences, University of the South Pacific		Integrated Coastal Management Project - MacArthur Foundation	Waste Management Workshop for Conua Tikina	Cuvu Village, Nadroga Navosa Province, Fiji	Workshop	To raise awareness on waste management concerns in the area and how to address them and to train community members to manage their waste	2 days	13 th - 14 th September 2005
Fiji	Institute of Applied Sciences, University of the South Pacific		Community requested and funded	Waste Management for Bau Island	Bau Island, Fiji	Workshop	To develop community waste management plan	2 days	March 9 th - 10 th 2006
Fiji	Institute of Applied Sciences, University of the South Pacific		Embassy of Japan	Community Waste Management Planning Workshop	Verata, Tailevu, Fiji	Workshop	Enhance the knowledge of community members in differentiating types of waste and adopt appropriate waste management methods	2 days	16 th - 17 th April 2013

PACP/ SPREP Country	Informal Training Providers (Main organisation)	Partner Organisations/Agencies	Funders	Course Title	Location	Training Type	Training Description/Objective	Duration	When was it offered
							to improve and maintain a pollution free environment that will ensure the protection of their resources and increase their livelihood.		
Fiji	SOPAC	UNESCO-IHE and GPA	UNEP and GPA	Waste Management Training – Fiji Islands	Suva, Fiji	Workshop		5 days	29 th June - 3 rd July 2009
Fiji	IUCN Regional Office (IUCN ORO)		United States Embassy of Suva and the Pacific Development Conservation Trust of NZ	Lami Waste-To-Art Workshop & Suva Harbor Coastal Clean-up	Suva, Fiji	Workshop		1 day	1 st March 2016
Vanuatu	SPREP - JPRISM II	University of Newcastle, JICA	Canadian Funding for Local Initiatives, JICA	Training on Disaster Waste Management	Port Vila, Vanuatu	Train the Trainer	To improve disaster response and manage disaster wastes.	4 days	18 th -22 nd November 2019
Vanuatu	SPREP - JPRISM II	University of New Castle, JICA	JICA, JPRISM II	Training on Disaster Waste Management	Port Vila, Vanuatu	Workshop	To develop contingency plans for the management of generated waste at the national and local government levels, when natural disaster strikes	5 days	2 nd - 6 th March 2020
Vanuatu	SPREP - JPRISM II	Department of Local Authorities (DLA)	JICA, JPRISM II	National Solid Waste Management Planning Workshop	Port Vila, Vanuatu		To build a foundation between national government and provincial/municipal governments to improve solid waste	1 day	28 th February 2020

PACP/ SPREP Country	Informal Training Providers (Main organisation)	Partner Organisations/Agencies	Funders	Course Title	Location	Training Type	Training Description/Objective	Duration	When was it offered
							management (SWM) in each area		
Vanuatu	SPREP - JPRISM II	University of New Castle, JICA	JICA, JPRISM II	Disaster Waste Management (DWM) Training	Port Vila, Vanuatu	Workshop	To trial the use of the Draft Disaster Waste Management (DWM) Training Handbook that will be used by SPREP in the promotion of DWM in the Pacific Island Countries.	5 days	18 th – 22 nd November 2019
Samoa	SPREP - JPRISM II	JICA	JICA, JPRISM II	Disaster Waste Management Workshop in Samoa	Apia, Samoa	Workshop	Development of a Regional Disaster Waste Management Guideline	3 days	16 th - 18 th October 2018
Samoa	SPREP - JPRISM II	Ministry of Natural Resources and Environment (MNRE) and Disaster Management Organization (DMO)	JICA, JPRISM II	Disaster Waste Management Workshop in Samoa	Apia, Samoa	Workshop	To review Samoa's responses to Cyclone Gita and other past disasters by various sectors and to discuss further strategic measures to guide Samoa into the management of DW when natural disasters strike	2 days	19 th - 20 th March 2018
FSM	SPREP - JPRISM II	Department of Environment, Climate Change and Emergency Management (DECEM)	JICA, JPRISM II	Solid Waste Management Workshop 1	Pohnpei, FSM	Workshop	Officials of 4 states gathered to share SWM issues technically as well as quantitatively by using "Waste Flows" which were formulated based on the baseline	1 day	17 th September

PACP/ SPREP Country	Informal Training Providers (Main organisation)	Partner Organisations/Agencies	Funders	Course Title	Location	Training Type	Training Description/Objective	Duration	When was it offered
							surveys conducted in 2017 in each state		
FSM	SPREP - JPRISM II	Department of Environment, Climate Change and Emergency Management (DECEM)	JICA, JPRISM II	Solid Waste Management Workshop 2	Pohnpei, FSM	Workshop	Officials presented waste collections situations after 2 years in each state as well as their effort to improve it	1 day	19 th September
Palau	SPREP - JPRISM II	JICA Kyushu Center	JICA, JPRISM II	Waste Landfill Training in Palau	Koror, Palau	Half-day classroom lectures, half day practical sessions conducted at landfill in Koror	Practical and theoretical aspects of the Fukuoka Method based on Micronesia region's conditions.	5 days	5 th - 9 th February 2018



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