



**SPREP**  
Secretariat of the Pacific Regional  
Environment Programme



# TONGA

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

December 2020

ISBN: 978-982-04-0936-1



The PacWastePlus programme is being implemented across 14 Pacific island countries and Timor-Leste, and will address both the cost-effective and sustainable management of waste and pollution in the priority waste streams of:

- **Hazardous wastes** (*asbestos, healthcare waste, and e-waste*)
- **Solid wastes** (*organic waste, disaster waste, bulky waste, and recyclables*)
- related aspects of **Wastewater**

The programme will deliver positive social and environmental outcomes from the effective management of waste in the Pacific. PacWastePlus activities are tailored to address the specific needs of each country based on their identified priorities. **Tonga** is one of the 15 countries participating in the PacWastePlus programme.



Tonga is an archipelago of islands, located in the Polynesia region of the South Pacific. Tonga comprises of 36 inhabited islands (171 islands in total) over five administrative divisions, covering a land area of 749km<sup>2</sup>. Its exclusive economic zone covers an oceanic area of approximately 700,000km<sup>2</sup>. The capital of Tonga is Nuku'alofa (on the island of Tongatapu), home to 23% of the 100,651 population.



Tonga experiences internal migration from rural to urban areas. This growing urbanised population exerts pressure on Tongatapu's environment, through the consumption of natural resources, waste generation, habitat destruction and environmental degradation leading to the loss of much of its native vegetation.



Palau's population is relatively small at 18,000, but has strong economic growth through tourism, fisheries, and agriculture. Approximately 70% of the 18,000 population lives in the city of Koror, on Koror Island. Koror is the former capital, the present capital being Ngerulmud on this island of Babeldaob.



Tonga is located within the Ring of Fire, as such it is vulnerable to natural disasters. Average loss from a disaster (cyclone, earthquake, tsunami) is estimated to be 4.4% of GDP. Tonga is also vulnerable to climate change, as sea level rises about 6mm annually around the country which has led several communities from the smaller islands to relocate to other islands due to saltwater intrusion into groundwater aquifers, and severe coastal erosion .



Tonga's economy has grown by 0.7% from 2018 to 2019, with gross domestic product (GDP) at USD\$450 million or USD\$5,100 per capita. Although trading activities are limited (kava, root crops, coconuts and fish), tourism was an important sector with earnings recorded at USD\$156.7 million in 2017. Due to the increase in tourism arrivals, consumption patterns have also shifted to imported foods and beverages posing a great challenge to existing waste service providers who are already strained in resources and capacity.



There is large variability in the management of waste in Tonga. The islands of Tongatapu and Vava'u receive rubbish collection services provided by the Tonga Waste Authority Limited. However, due to the lack of waste collection services provided to the other outer islands and rural areas, practices of backyard burying and burning is prevalent .

# SUMMARY OF PACWASTEPLUS WASTE STREAMS AND COMMITMENTS



## Healthcare Waste

Waste generated by health care facilities includes used needles and syringes, soiled dressings, body parts, diagnostic samples, blood, chemicals, pharmaceuticals, medical devices, and radioactive materials. Incorrect management of healthcare waste can expose health care workers, waste handlers, patients and local communities to infection and injuries, and risks polluting the environment. The volume of healthcare waste is increasing in the Pacific as populations grow and medical services expand.

### Activities implemented by PacWaste (2014-2018)



#### Baseline Survey

Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Niue, Papua New Guinea, Palau, Samoa, Solomon Islands, Timor Leste, **Tonga**, Tuvalu, Vanuatu



#### Incinerator Installation

Cook Islands, Fiji, FSM, Kiribati, Nauru, Niue, Palau, Solomon, **Tonga**, Tuvalu, Vanuatu



#### Training (Incinerator Operation)

Cook Islands, Fiji, FSM, Kiribati, Nauru, Niue, **Tonga**, Tuvalu, Vanuatu



#### Training (Healthcare Waste Management)

Cook Islands, Fiji, FSM, Kiribati, Marshall Islands, Nauru, Papua New Guinea, Palau, Samoa, Solomon Islands, Timor Leste, **Tonga**, Tuvalu, Vanuatu



#### Provision of Equipment

FSM, Nauru, Papua New Guinea, Timor Leste, Vanuatu



#### Policy and Regulation (Strategy)

Cook Islands, Fiji, FSM, Kiribati, Nauru, Papua New Guinea, Palau, Samoa, Solomon Islands, Timor Leste, **Tonga**, Tuvalu



## Asbestos

Asbestos refers to six naturally occurring silicate minerals composing of long and thin fibrous crystals. Historically, asbestos was a common building material, but is now banned from most modern products as it is a known carcinogen. Numerous buildings in the Pacific contain asbestos, and risk of exposure is elevated due to the number of extreme weather events, which can damage asbestos containing materials (ACM) and release airborne fibres.

### Activities implemented by PacWaste (2014-2018)



#### Baseline survey

Cook Islands, Fiji, FSM, Kiribati, RMI, Nauru, Niue, Palau, Samoa, Solomon Islands, **Tonga**, Tuvalu, Vanuatu



#### Abatement

Abated = 27,873m<sup>2</sup>  
Cook Islands, Fiji, FSM, Kiribati, RM, Nauru, Samoa Solomon, **Tonga**, Vanuatu



#### Training

Fiji, FSM, Kiribati, Nauru, Niue, Solomon, **Tonga**, Vanuatu



#### Public Awareness

Cook Islands, Fiji, Kiribati, RMI, Nauru, Niue, Palau, Solomon, **Tonga**, Tuvalu, Vanuatu



#### Policy and Regulation (Strategy)

Fiji, Nauru, Solomon, **Tonga**, Tuvalu

**PacWastePlus** is working directly with five member countries, and has regional activities underway, to assist with the management of asbestos through:



#### Survey/Investigation

Nauru, Kiribati, **Tonga**, Tuvalu



#### Abatement

Nauru, Niue, Kiribati, **Tonga**



#### Training

Nauru, Niue, Kiribati, **Tonga**, Tuvalu



#### Policy and Regulation (Asbestos Ban, Code of Practice)

Nauru, Niue, Kiribati, **Tonga**, Tuvalu, Regional



#### Public Awareness

Regional

The PacWastePlus programme brings together key organisations supporting waste and pollution sector in the region. Additionally, the programme is partnering with numerous other development partners operating waste management projects in the region, to ensure no duplication of efforts or wasted resources.

**PacWastePlus** is working directly with two member countries, and has regional activities underway, to assist with the management of healthcare waste through:



#### Incinerator Assessment

Cook Islands, Federated States of Micronesia, Fiji, Nauru, Niue, Solomon Islands, **Tonga**, Tuvalu, Vanuatu, Timor-Leste, Kiribati



#### Incinerator Repair

Kiribati, Palau, Solomon Islands, **Tonga**, Vanuatu



#### Training

Timor-Leste, Papua New Guinea, Regional



#### Policy and Regulation

Timor-Leste, Papua New Guinea



#### Public Awareness

Regional



#### Remediation

Timor-Leste



#### Provision of Equipment

Timor-Leste

# SUMMARY OF PACWASTEPLUS WASTE STREAMS AND COMMITMENTS



## E-waste

The rapidly increasing use of electrical and electronic equipment globally is resulting in an increase in the volume of e-waste generated. E-waste contains a range of hazardous materials including heavy metals, brominated flame retardants and other toxic substances. Incorrectly managed e-waste has a risk to release toxic substances and has potential to contaminate the environment. E-waste management is an emerging issue in the Pacific due to the lack of recycling and disposal options available. Even though electrical and electronic items contain recoverable and valuable components, efforts to effectively manage e-waste are often faced with economical, logistical, and technical challenges.

### Activities implemented by PacWaste (2014-2018)



**Facility Design/Establishment** (*Pilot and processing*)  
Cook Islands, Kiribati, Palau, **Tonga**, Vanuatu



**Public Awareness**  
Cook Islands, Kiribati, RMI, **Tonga**



**Policy and Regulation (Strategy)**  
Tuvalu



**Collection System**  
RMI, Solomon



## Disaster Waste

Natural disasters generate a huge volume of intermingled waste types which have the potential to contaminate the natural environment and poses a risk to human health, and which often need to be cleared very quickly to allow for relief efforts to be undertaken. With natural disaster frequency and severity in the Pacific region increasing, the issue of disaster waste management has developed a higher profile and greater sense of urgency.

**PacWastePlus** is working directly with two member countries, and has regional activities underway, to assist with the management of disaster waste through the:



**Clean up**  
Vanuatu



**Training**  
Vanuatu



**Policy and Regulation (Management Plan)**  
Vanuatu, Regional



**Public Awareness**  
Regional

**PacWastePlus** is currently working directly with two member countries, and has regional activities underway, to assist with the management of e-waste through the:



**Facility Design/Establishment**  
Samoa



**Training**  
Samoa, Niue, Regional



**Policy and Regulation (ARF, Levy, Strategy)**  
Papua New Guinea, Samoa, Marshall Islands, Cook Islands, Nauru, Solomon Islands, Vanuatu, Kiribati, Regional



**Collection System**  
Samoa



**Public Awareness**  
Regional



## Bulky Waste

Bulky waste is materials that are too large to be accepted by regular waste collection services (end-of-life vehicles, tyres, white goods, furniture, construction waste, and other large household goods). In the Pacific region, bulky waste is problematic to manage as it requires specialist equipment and a large area for effective collection and processing, and requires potentially cost-prohibitive transport to reach recycle markets. As a result, bulky waste items can often be seen disposed in landfills, dumps and discarded on vacant land.

**PacWastePlus** seeks to work directly with two countries, and has regional activities underway, to assist with the management of bulky waste through the:



**Survey/Investigation**  
Palau, Regional



**Provision of Equipment**  
Marshall Islands\*



**Training**  
Marshall Islands\*, Palau, Regional



**Policy and Regulation (ARF, Levy)**  
Samoa, Marshall Islands, Cook Islands, Nauru, Solomon Islands, Vanuatu, Kiribati, Regional



**Public Awareness**  
Regional

\*Project to be determined

### The four key result areas of PacWastePlus are:

- improved data collection, information sharing, and education and awareness,
- policies and regulatory frameworks developed and implemented
- best practices including enhanced private sector engagement and infrastructure development implemented
- enhanced human capacity

# SUMMARY OF PACWASTEPLUS WASTE STREAMS AND COMMITMENTS



## Organic waste

Organic material is biodegradable matter such as kitchen scraps (food); garden cuttings, grass and branches; and paper. Up to 50% of waste disposed to landfill in the Pacific is organic material. When processed correctly (in an “aerobic” or oxygen-filled environment), organic materials can produce valuable nutrient rich products, such as compost, suitable for soil enhancement and food cultivation. However, when intermingled with other waste and disposed in a landfill or dump (an “anaerobic” environment), organic material can release toxic leachate and generate methane gas.

**PacWastePlus** has regional activities underway and will seek to work directly with countries to assist with the management of organic material through the:



### Survey/Investigation

Nauru\*, Solomon Islands, Vanuatu



### Facility Design/Establishment

Nauru, Solomon Islands, Vanuatu



### Training

Nauru\*, Solomon Islands, Vanuatu, Regional



### Policy and Regulation (Operating Procedure)

Nauru, Solomon Islands, Vanuatu, Regional



### Public Awareness

Regional



## Water impacted by Solid Waste

Pacific Island countries largely depend on the ocean and water bodies for daily sustenance and economic livelihood. Improper waste management can impact water bodies and poses a potential threat to the health of local communities.

**PacWastePlus** has partnered with The Pacific Community (SPC) to develop and pilot a wastewater pilot project.

Project to be designed and implemented by SPC



## Recyclables

Recycling is a process to convert “waste” items into new products. Globally, consumption patterns generally following a linear “buy, use and throw” model. This linear model is problematic in the Pacific as all recyclable items are imported into the region and the majority of recyclable waste is disposed into overflowing landfills, with associated cost borne by national and local governments. Managing recyclables in the Pacific region is challenging due to the relatively small volume of items received being unable to provide an economy of scale – resulting in challenges for the collection, processing and reverse shipping to reach recycle markets. As a result, discarded recyclable items are a prevalent sight in the Pacific.

### Activity implemented by PacWaste (2014-2018)



### Pilot Project on Integrated atoll waste management

Marshall Islands (Majuro)



### Recyclers Network

Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Niue, Papua New Guinea, Palau, Samoa, Solomon Islands, Timor Leste, **Tonga**, Tuvalu, Vanuatu

**PacWastePlus** is providing direct assistance to six member countries, and has regional activities underway, to assist with the management of recyclables through the:



### Facility Design/Establishment

Federated States of Micronesia, Solomon Islands, Cook Islands, Tuvalu



### Provision of Equipment

Marshall Islands, Niue\*, Vanuatu\*



### Seed Funding

Cook Islands, Marshall Islands, Niue\*, Vanuatu\*



### Training

Federated States of Micronesia, Solomon Islands, Cook Islands, Tuvalu, Marshall Islands, Vanuatu



### Policy and Regulation (ARF, Levy)

Samoa, Cook Islands, Nauru, Solomon Islands, Marshall Islands, Vanuatu, Regional



### Public Awareness

Regional

PacWastePlus activities were selected either:

- 1) directly by countries as part of their chosen country projects; or
- 2) to respond to a key topic or action area brought to the attention of the PacWastePlus Programme Management Unit

Wherever possible country specific projects will be converted into regional resources, so all countries and territories in the region can benefit from the investment.

# PACWASTEPLUS REGIONAL KEY RESULT AREAS

In addition to activities directly related to the waste streams, PacWastePlus will undertake regional activities under each key result area. These activities are designed to respond to needs identified by member countries and to inform and support implementation of country specific activities.

## Data Gathering



- Waste Audits to inform decision making
- Research into Gender and Social Inclusion issues in waste management throughout the region
- Development of a decision support tool to assist management option assessments
- Research into possible Small Scale Technology options suitable for use in the region
- Research into the management options for used tyres
- Research into alternatives to the use of disposable diapers
- Research into the impacts of different types of landfill designs
- Research to understand social and technical barriers and opportunities for managing organics
- Research into the management options for bulky waste (ELV/Construction waste)

## Policy and Regulation



- Review and assessment of national legislative frameworks as they relate to waste management
- Specific Legislative assistance to each country to strengthen waste management legislative instruments\*

\* Currently utilised for ARF = Samoa, Marshall Islands, Cook Islands

## Education and Awareness



- Development and implementation of a Regional Education and Awareness Plan
- Assistance to develop National Education and Awareness Plans that will support the implementation of PacWastePlus in each participating country
- Implementation of three pilot Behavioural Change/Social Marketing Campaigns

## Capacity Building



- Identify skills countries feel their staff and waste management workers should have and provide the up-skilling
- Developing a sustainable capacity building program for waste management in the Pacific

For more information please contact:

The PacWastePlus team on [pwp@sprep.org](mailto:pwp@sprep.org)  
Or visit - <https://www.sprep.org/pacwaste-plus>

(post project please email-[sprep@sprep.org](mailto:sprep@sprep.org))

### Disclaimer

*This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of SPREP and do not necessarily reflect the views of the European Union.*

*\*Countries mentioned in this publication are as at December 2020*