



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



## PACWASTEPLUS PROJECT SNAPSHOT

# TIMOR-LESTE

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.

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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. **Timor-Leste** is one of the 15 countries participating in the PacWastePlus programme.



Timor-Leste is an island nation located in South East Asia. Timor-Leste occupies the eastern half of Timor Island and the islands of Atauro and Jaco with West Timor controlling the other half of the island (for Indonesia). Timor-Leste covers 14,919 km<sup>2</sup> of land and is in the process of establishing its maritime boundaries. The capital of Timor-Leste is Dili, home to 23% of its 1,280,743 population. Timor-Leste gained independence from Indonesia in 2002 .



The economy in Timor-Leste is based on agriculture, tourism and petroleum<sup>4</sup>. Subsistence agriculture employs 50% of the population and is the main source of livelihood. The staple crops cultivated include rice, cassava, and vegetables while the major cash crop is coffee . The gross domestic product (GDP) is estimated at USD\$1.67 billion or USD\$1,252 per capita. Extraction of oil reserves from the Timor Sea accounts for 80% of Timor-Leste's GDP.



Rural to urban migration continues to increase in Timor-Leste where 30% of the population reside in district centres. This growing urban population places pressure on the environment and infrastructure, resulting in issues including access to potable water, sanitation and waste management services.



Timor-Leste also is affected by drainage and stormwater pollution in Dili and district centres. During the wet season, many sections of drainage channels become blocked with solid waste and sediment, leading to flooding and pollution in the environment.



Timor-Leste's mountainous terrain and monsoonal climate results in regular flooding and erosion in rural and urban areas. Erosion and flooding have contributed to habitat degradation and roads collapsing.



There is large variability in the management of waste in Timor-Leste. The Dili District Administration manages the Tibar Dump, which is the only controlled landfill in Timor-Leste. The Dili District Administration contracts private companies to assist with rubbish collection in Dili. Despite this, many households and businesses do not dispose of waste properly and are engaged in illegal dumping in rivers or drains and burning. There are private recycling companies in Dili that bale and export cardboard, paper and scrap metal.

# 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, RMI, Nauru, Niue, Papua New Guinea, Palau, Samoa, Solomon Islands, **Timor-Leste**, Tonga, Tuvalu, Vanuatu



#### Incinerator Installation

Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Nauru, Niue, Palau, Solomon Islands, Tonga, Tuvalu, Vanuatu



#### Training (Incinerator Operation)

Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Nauru, Niue, Tonga, Tuvalu, Vanuatu



#### Training (Healthcare Waste Management)

Cook Islands, Fiji, Federated States of Micronesia, Kiribati, RMI, 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, Federated States of Micronesia, 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, Federated States of Micronesia, Kiribati, RMI, Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu



#### Abatement

Abated = 27,873m<sup>2</sup>

Cook Islands, Fiji, Federated States of Micronesia, Kiribati, RMI, Nauru, Samoa, Solomon Islands, Tonga, Vanuatu



#### Training

Fiji, Federated States of Micronesia, Kiribati, Nauru, Niue, Solomon Islands, Tonga, Vanuatu



#### Public Awareness

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



#### Policy and Regulation (Strategy)

Fiji, Nauru, Solomon Islands, 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 Islands



## 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, RMI, 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**  
RMI\*



**Training**  
RMI\*, Palau, Regional



**Policy and Regulation (ARF, Levy)**  
Samoa, RMI, 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

\*Project to be determined



## 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

RMI (Majuro)



### Recyclers Network

Cook Islands, Fiji, Federated States of Micronesia, Kiribati, RMI, 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

RMI, Niue\*, Vanuatu\*



### Seed Funding

Cook Islands, RMI, Niue\*, Vanuatu\*



### Training

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



### Policy and Regulation (ARF, Levy)

Samoa, Cook Islands, Nauru, Solomon Islands, RMI, 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