



# Solid Waste Management in the Pacific

## Cook Islands Country Snapshot

### BACKGROUND

The Cook Islands has a population of around 17,800.<sup>1</sup> Seventy percent of the population lives on the main island of Rarotonga, which has an area of 6,719 hectares. Per capita gross domestic product in 2011 was estimated to be NZ\$17,799 (around \$14,710).<sup>2</sup> The country is heavily dependent on tourism as a key driver of economic growth, tourism receipts amounted to the equivalent of about 54% of GDP in FY2012. The natural beauty of the islands, including the pristine surrounding environment, is what draws the majority of tourists to the Cook Islands. The country received around 120,000 visitors in 2012.

### TECHNICAL ASPECTS

#### Waste Collection

Waste collection services are provided everyday from Monday to Saturday to households on Rarotonga. Businesses are responsible for hauling their own wastes to the landfill, but can opt to pay for waste collection services. Waste collection services are provided by private operators under contract with the Ministry of Infrastructure Cook Islands (ICI). The contractor employs one small compactor truck with a trailer for recyclables, such as glass, polyethylene terephthalate (PET) drink bottles, and aluminum cans. Two private companies provide commercial waste collection services.

The Department of Internal Affairs employs eight staff to clean streets and public spaces, and to collect waste from public receptacles, in the Avarua town area. All waste collected is then burned on the open ground outside Avarua.

#### Solid Waste Disposal

ICI is also responsible for managing Rarotonga's Waste Management Facility. The facility is located in a narrow, rocky canyon that drains a sizeable mountain watershed. The stream that formerly ran through the middle of the site has been diverted along the canyon wall. While constructed as a sanitary landfill in 2006 with assistance from the Asian Development Bank, managing the waste facility as it was originally designed has encountered problems due to limited financial and human resources.

The Governments of Australia and New Zealand and the private sector provide support to improve waste facility management. ICI employs eight staff to operate the small sanitary landfill, three at the landfill, and five at the recycling centre, which is also located at the facility. The landfill was constructed with a design life of 15 years; however the landfill is now close to full capacity. Acceptance of green waste in earlier years, a practice that has now stopped, has also contributed to the landfill filling up more quickly than expected. However, small amounts of green waste still appear in garbage that arrives at the landfill.

The urban area in and around Avarua is host to at least three incinerators that burn garbage, and a fourth that burns medical wastes. All are single-stage incinerators and none have emissions control equipment. The incinerator at the airport that is used to dispose of around 200 kilograms (kg) of airline waste daily is severely dilapidated.

ICI estimates that around 80 tons per week, or 4,200 tons per year, of solid waste is deposited in the Rarotonga landfill.<sup>3</sup>

1 Cook Islands Statistics Office. 2011. *Cook Islands Census of Population and Dwelling*. Cook Islands Government. Rarotonga.

2 ADB. 2013. *Key Indicators for Asia and the Pacific 2013*. Manila.

3 Palmer. L. 2012. *The Establishment of Long Term Financing for Solid Waste Management*. CITAF Project 2012.



Photo by J. Tim O'Meara

Burning trash in Avarua

Given that the landfill will soon reach its full capacity, the government is seeking to identify appropriate longer term options for solid waste disposal. Rarotonga is a mountainous island with a narrow coastal plain that is developed for tourism and housing. The lack of available land for a new landfill facility on Rarotonga poses a significant challenge.

The electricity utility, Te Aponga Uira (TAU), was provided with a grant from New Zealand to carry out a feasibility study to determine the viability of a waste-to-energy facility on Rarotonga. However, since the feasibility study was carried out in the absence of sufficiently detailed data on the quantity or characteristics of the available waste stream, the viability of this waste disposal option has not been confirmed with certainty.

### Recycling

There are a number of recycling initiatives in Rarotonga to reduce the amount of waste which reaches the Rarotonga Waste Facility. A transfer station is located at the landfill for the processing of recyclable materials. Aluminum cans, PET

bottles, and glass are collected for recycling along with other solid waste, although the practice of segregating recyclables is not yet widespread among households. These recyclable materials are then exported to New Zealand for processing, while some glass is crushed for local use for making concrete blocks and road aggregate.

The Cook Islands Trading Corporation (CITC), a commercial enterprise, provides recycling services for compact fluorescent light bulbs, and runs a drop off center for recyclables and cardboard boxes. CITC also ships paper and cardboard for aggregate recycling in New Zealand.

Cook Islands General Transport also organizes the periodic collection of white goods for recycling. A limited amount of composting also takes place in Rarotonga. Larger resorts are also reported to provide food scraps to local piggeries in exchange for discounted pork. A farmers' association that supports the production of organic produce has also set up a compost center to reduce the volume of green waste that would otherwise be burnt.

## INSTITUTIONAL ASPECTS

Key pieces of legislation that govern the management of solid waste in the Cook Islands are the Environment Act (2003), and the Public Health Act (2004). The National Environment Strategic Action Framework under the Environment Act also includes the management of waste. The National Sustainable Development Plan 2011–2015 identifies improved solid waste management facilities and waste minimization as key objectives to support the achievement of national development goals. The National Solid Waste Management Strategy 2013–2016 sets out an overall approach, policy objectives and targets for the improved management of solid waste in the Cook Islands.

Under the Environment Act, the National Environment Service is primarily responsible for developing policy, enforcing regulations against illegal rubbish dumping, and monitoring and enforcing environmental standards at the landfill on Rarotonga. The Ministry of Health, under the Public Health Act, is responsible for protecting public health and for managing medical waste. ICI is responsible for solid waste infrastructure development, and collection and disposal services.

The fragmentation of responsibility among several agencies has resulted in some confusion over various roles and responsibilities. To address this, the National Waste Management Strategy recommends a new waste management act, which would consolidate responsibility for solid waste management under a single entity, which would be specially created for this purpose.

## FINANCIAL ASPECTS

An annual operational budget of NZ\$422,000 (around \$346,000) is allocated to ICI for the management of solid waste services on Rarotonga. Households are provided with waste collection services free of charge, which provides little incentive for waste minimization, and means that services must be funded entirely from the government budget. Revenue to support landfill operations comes from government budget allocations and from tipping fees charged to nongovernment vehicles (solid waste and septage pump out) based on the size of the vehicles as presented in the table on next page. Trucks hauling household and small business waste under government contract pay no tipping fees.



Rarotonga landfill

Photo by J. Tim O'Meara

## Landfill Gate Fee Structure

Load	Gate Fee (NZ\$)
Car boot	10
Small pickup truck (1 cubic meter)	20
Skip bins (3.9 cubic meters)	20
Large truck (8 cubic meters)	40

Source: L. Palmer, 2012.

Large distances from overseas processing centers mean that with the exception of scrap metals, subsidies are required to support recycling activities.

The Minister of Infrastructure Cook Islands set up a Waste Financing Committee in February of 2012 to investigate options for long-term financing of solid waste management. The proposed National Solid Waste Management Strategy identifies a number of options for financing recycling activities such as (i) the introduction of a container deposition scheme on aluminum and PET beverage containers, (ii) an advance disposal fee levied on selected imported items to cover the costs of collection, storage, export and processing of hazardous waste, and (iii) the creation of a dedicated trust fund to cover the costs of solid waste management to cover the costs of exporting and processing of waste. In the past, an additional \$5 was added to the departure tax and deposited in a special purpose Environmental Protection Fund. However, the fund has since been abolished, and all revenues are now deposited into the general fund.

## CONCLUSIONS AND RECOMMENDATIONS

Despite the problems, standards for solid waste management and pollution control are noticeably higher in the Cook Islands than in most of the other Pacific developing member countries. With tourism comprising such a large proportion of its economy, Cook Islanders want those standards to be even higher. A national objective of “zero waste” in the Cook Islands has been established as outlined in the country’s National Solid Waste Management Strategy.

The greatest and most pressing need is finding a means of solid waste disposal to be implemented before the present landfill becomes full. While waste minimization, and greater reuse and recycling of waste are required to address Rarotonga’s solid waste challenge, new disposal facilities will still be needed. Options include a waste-to-energy facility, or, if that is not economically viable, a thermal waste destruction without energy recovery. Either option is likely to be much more cost effective and much easier to locate than a new landfill and would have better environmental results than the present strategy of landfilling combined with open burning and uncontrolled incineration of wastes. An assessment of these options requires access to better data, but both offer potential solutions.

The introduction of “user pays” systems which encourage waste minimization and improve cost recovery in service delivery should be considered. However, such systems should be implemented in parallel with improved environmental enforcement to discourage illegal dumping and burning of waste. Similarly, a container deposit scheme on aluminum and PET beverage containers, and batteries, could be considered as a means of establishing sustainable financing streams for the recycling.

A resolution of these challenges is hampered by the lack of coherent and reliable data on the types, qualities, and quantities of wastes; and what happens to those wastes. Collecting reliable data is therefore a top and immediate priority for improving solid waste management.

The National Solid Waste Management Strategy recognizes these issues as key priorities for improving for existing solid waste management situation on Rarotonga. ■

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