

# **COOK ISLANDS**

## **NATIONAL SOLID WASTE MANAGEMENT STRATEGY 2013 – 2016**

# ACKNOWLEDGEMENTS

We acknowledge all individual stakeholders and stakeholder groups who were consulted during the development of this document.

We particularly acknowledge the Minister of Infrastructure and Planning, Teariki Heather, whose vision and direction initiated the Solid Waste Committee to look into potential funding options to finance the disposal of solid waste. This led to the completion of this Solid Waste Management Strategy document which was originally drafted for the National Environment Service (NES) by the Pacific Regional Environment Programme (SPREP).

The Solid Waste Management Committee consisted of:

- John Wichman (Chair), Recycling Cook Islands
- Maureen Hilyard (Secretary), University of the South Pacific
- John Carter, NZ High Commissioner
- Jaime Short, WATSAN, Ministry of Infrastructure Cook Islands
- Tai Nooapii, WATSAN, Ministry of Infrastructure Cook Islands
- Vavia Tangataia, National Environment Service
- The late Tania Temata, National Environment Service
- Rerekura Teaurere, Office of the Prime Minister
- Oirua Joseph, Ministry of Health
- Imogen Ingram, Island Sustainability Alliance Cook Islands
- Kelvin Passfield, Te Ipukarea Society
- Jolene Bosanquet, Te Ipukarea Society
- Petero Okotai, Consultant

# FOREWORD



Kia Orana,

This strategy looks to develop a Solid Waste Management System, that is smart, fair, affordable and encourages ownership and responsibility of the management of waste amongst individuals, businesses and communities across the Cook Islands. This strategy is a vital tool in our overall development, in protecting our beautiful environment and safeguarding the wellbeing of current and future generations of Cook Islanders.

This government recognizes the need to take responsibility for the consequences of our economic development, by effectively tackling the issues of solid waste management. We are a country of limited land mass and have a fragile ecology and thus, we simply cannot sustain the current growth in waste or tolerate pollution from solid waste, if we wish to protect the health of our citizens and our environment.

I believe the solution, to our Waste Management issues lies in addressing the underlying cause of our growing solid waste problem: *our attitudes* and *our behaviours* as a society and as *individuals*. This strategy sets forth a vision for “**A Zero Waste Cook Islands**” with an informed and proactive Cook Island Community taking responsibility for sustainable Waste Management.

This strategy offers us a vision and a plan, but foremost in following this strategy and policy, the onus is on you and me, the people of the Cook Islands, to be responsible for our actions in the management of our solid waste.

Kia Manuia,

Hon. Teariki Heather  
Minister of Infrastructure and Planning

## EXECUTIVE SUMMARY

The purpose of this strategy is to establish an Integrated Solid Waste Management Framework that improves the country's management of solid waste, and promotes shared solid waste management responsibility by all stakeholders.

This Solid Waste Management Strategy covers a period from 2013 through to 2016, and applies across the whole of the Cook Islands.

### Vision

An informed and proactive Cook Islands community taking responsibility for sustainable solid waste management, with an aspiration towards Zero Waste.

### Policy Outcomes

The Zero Waste Cook Islands envisioned is one where:

- The amount of potential waste is minimised through responsible supplier and consumer behaviour and enforced by government restrictions.
- Solid wastes resulting from consumer products are first reused.
- Solid waste that is compostable will be used as such.
- Solid waste products that are recyclable will be repatriated for recycling.
- Hazardous waste (including e-waste) will be appropriately housed in interim storage prior to its transfer to environmentally sound disposal facilities overseas.

### Policy Objectives

- Minimize the volume of solid waste to landfill by using the "Waste Hierarchy" (Refuse, Reduce, Reuse, Recycle).
- Have a clear and robust institutional and legislative framework.
- Develop appropriate infrastructure including separation and storage facilities.
- Make solid waste management self sustaining and capitalise on potential economic opportunities.
- Create a culture of responsible solid waste management where waste management is everyone's responsibility. This can be advanced through education, advocacy and enforcement.
- Develop a strong monitoring and evaluation system.

## Immediate priorities for the Solid Waste Management Strategy

1. Legislative review and drafting of new waste management legislation.
2. Establishment of a dedicated entity or division within government to be the focal point for the management and co-ordination of all aspects of solid waste.
3. Establishment of a dedicated solid waste management fund.
4. National waste audit.
5. Economic assessment of the costs of Solid Waste Management in the Cook Islands.

The above are vital pre-requisites to ensure that the strategy is implemented in a coordinated and timely manner.

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## ACRONYMS

ADB	Asian Development Bank
ADF	Advanced Disposal Fees
CIGT	Cook Islands General Transport
EPF	Environmental Protection Fund
HCFCs	Hydrochlorofluorocarbons (ozone depleting gas)
HPMP	Hydrochlorofluorocarbons Phase-out Management Plan
ISACI	Island Sustainability Alliance Cook Islands
ISWM	Integrated Solid Waste Management
ISWMF	Integrated Solid Waste Management Framework
MFEM	Ministry of Finance and Economic Management
MOH	Ministry of Health
MOID	Ministry of Outer Island Development
ICI	Ministry of Infrastructure Cook Islands
MOU	Memorandum of Understanding
NES	National Environment Service
NGO	Non-Governmental Organisation
NSDP	National Sustainable Development Plan
NZAID	New Zealand Agency for International Development
ODS	Ozone Depleting Substances
OPM	Office of the Prime Minister
PET	Polyethelene terephthalate (the most common type of polyester)
POPs	Persistent Organic Pollutants
RCI	Recycle Cook Islands
SPREP	Secretariat of the Pacific Regional Environment Program
SWMA	Solid Waste Management Authority
TIS	Te Ipukarea Society
WATSAN	Water, Waste and Sanitation Unit



# INTRODUCTION

The Cook Islands faces a number of unique challenges as it deals with externalities of economic development and its integration into the global economy. Solid waste management is a significant challenge because of its impact on human health and ecosystems. The contextual challenges include:

- Ambiguous role responsibility is heightened by lack of legislation.
- High transport costs related to small dispersed land masses.
- Poor management of our narrow and limited economic base.
- Limited institutional capacity resulting from small populations.
- Asymmetrical trade balance, with the vast majority of consumables imported.
- Human and environmental health threatened by poor management of hazardous waste.

In this Strategy we briefly look at the contextual environment; reviewing the various challenges of solid waste management in the Cook Islands and outlining existing institutional arrangements.

In proposing a way forward we put forth a vision for the future of solid waste management in the Cook Islands and a policy framework to support this vision.

From this policy framework we derive four strategic action areas which summarise actions to help the Cook Islands to achieve its vision for sustainable solid waste management.

## Purpose

The purpose of this strategy is to implement an Integrated Solid Waste Management Framework that improves the Cook Islands management of solid waste through legislative, institutional and infrastructural arrangements; sustainable waste financing; and to promote shared responsibility for waste management by all stakeholders.

## Defining “Solid Waste”

To define “Solid Waste” we use a subsection of a broader definition of “waste” as set out in Section 3 of the Public Health Act 2004. In this document, we refer to “Solid Waste” under the following definition:

*“Solid Waste” includes the following: a) Garbage, refuse, or litter; b) Hazardous waste; c) medical & bio-waste; d) Building and demolition waste; e) Other discarded or superfluous things industrial, commercial, mining, agricultural, community, or other activities; f) that is not of a liquid or gaseous nature in its raw form.*

It is noted that liquid or gaseous waste that contains persistent organic pollutants and heavy metals are classified as hazardous waste so are included in this Strategy.

# BACKGROUND

## Geography and Population

The Cook Islands is located in the South Pacific Ocean between French Polynesia and Fiji, and comprises 15 widely-dispersed islands encompassing a land area of just under 240 km<sup>2</sup> and a maritime area of 1.8 million km<sup>2</sup>. The country is broadly divided into the Southern Group of mostly high volcanic formation comprising 90 per cent of the total land area, and the Northern Group of islands comprising mostly low-lying coral atolls with sparse vegetation and large lagoons (Cook Island Statistics, 2011). The island of Rarotonga is the largest island and the main urban centre. The estimated resident population of the Cook Islands in 2011 was 17,791 of whom 74% live on Rarotonga (Table 1).

ISLAND	SIZE (km <sup>2</sup> )	POPULATION	DISTANCE TO RAROTONGA (km)
<b>Southern Group</b>			
Aitutaki	18.3	2,035	162
Atiu	26.9	481	222
Mangaia	51.8	573	204
Manuae	6.2	0	236
Mauke	18.4	307	280
Mitiaro	22.3	189	262
Palmerston	2.1	60	503
Rarotonga	67.1	13,097	0
Takutea	1.22	0	217
<b>Northern Group</b>			
Manihiki	5.4	243	1,203
Nassau	1.3	73	1,220
Penrhyn	9.8	203	1,364
Pukapuka	1.3	453	1,311
Rakahanga	4.1	77	1,247
Suvarrow	.4	0	952
<b>TOTALS</b>	<b>235.4</b>	<b>17,791</b>	

Table 1: General statistics of the Cook Islands, 2011

## Economy

Gross Domestic Product in 2010/11 was NZ\$271,500 (MOFCOM, 2013) with the main economic activity being tourism (67.5%), agriculture, fishing, offshore financial services and black pearl farming. Tourism adds up to 120,000 additional people per year to the Cook Islands local population, which is a significant increase to the population at times during the year. This fact impacts significantly on solid waste generation.

## Government and governance

The Cook Islands has a Westminster style of Parliament similar to that of New Zealand and the United Kingdom. The country is a State in Free Association with New Zealand. While the Constitution provides for

New Zealand to be responsible for defence and some aspects of international relations, this can only be enacted upon request by the Government of the Cook Islands. The Government is responsible for enacting legislation, entering into international agreements and conducting its own international relations (Cook Islands Government Online, 2012).

## Transport Services

International air services are provided by Air New Zealand, Virgin Australia and Air Tahiti, offering flights between Rarotonga and Auckland, Fiji, French Polynesia, Los Angeles and Sydney.

Domestic passenger and cargo services are provided by Air Rarotonga which operates seven days a week. The airline runs five daily flights to Aitutaki and has weekly flights to four other islands (Mangaia, Atiu, Mauke, Mitiaro). Services to the Northern Group islands operate on an ad-hoc basis.

Two international shipping services connect Rarotonga with Auckland, Samoa, Tonga and Niue, with a smaller service operating between the Outer Islands and New Zealand. Another shipping company links the Cook Islands with Hawaii.

# THE STATUS OF WASTE MANAGEMENT

## Stakeholders

The following table summarizes the key stakeholders involved in the waste management sector in the Cook Islands, including government departments, the private sector and non-governmental associations. This list is not exhaustive, but provides a quick snapshot of key stakeholders at this point.

**Table 2: Key Stakeholders in Waste Management.**

Key Stakeholders	Roles
National Environment Service (NES)	Involved in policy development, education & awareness, monitoring & evaluation as well as enforcement.
Island Environment Authorities	Decision-making bodies established by the Environment Act (2003) which considers environmental impact applications, etc
Ministry of Infrastructure & Planning (ICI)	The administration of the landfills on Rarotonga and Aitutaki as well as the collection of garbage.  The Water Waste and Sanitation (WATSAN) Unit sits under the auspices of ICI, with responsibility for policy aspects of waste management.
Solid Waste Management Committee	A committee appointed by Cabinet to oversee solid waste initiatives and the implementation of this strategy. It consists of representatives from government departments, private sector and NGOs.
Infrastructure Committee	Committee set up to oversee infrastructure initiatives in the Cook Islands.
Te Ipukarea Society (TIS)	TIS is an NGO regularly involved in environmental consultations and integral in various environmental campaigns.
Island Sustainability Alliance CIs Inc.	ISACI is an NGO regularly consulted on sustainable development issues, including sustainable land management, chemicals & wastes and environmental monitoring.
Ministry of Finance and Economic Management (MFEM)	Responsible for Inland Revenue and the management of crown accounts and the budget process.
Cook Islands Tourism Corporation	Responsible for the promotion of the Cook Islands as a tourism destination and the implementation of the tourism destination strategy.
Tourism Industry Council	The Council oversees the accreditation program, which requires tourism related businesses to adhere to regulations including environmental legislation, and stipulates 'green practices'.
Recycle Cook Islands	Private recycler, most often steel and aluminium. Also repatriates plastic PET bottles and white-ware.
Cook Islands Trading Corporation	Practises recycling including reducing product packaging, accepting the return of traditional light bulbs, selling reusable shopping bags.
T&M Heather	Contractors for the Rarotonga roadside collection of municipal solid waste.
NZAID	New Zealand is a major development partner supporting many projects including those in the areas of environment,

	infrastructure and economic development.
Asian Development Bank (ADB)	The ADB funded the waste management facilities that were opened in Aitutaki and Rarotonga in 2006.

## Legal and Institutional Arrangements

The roles and responsibilities for Solid Waste Management in the Cook Islands are described below.

### ***National Environment Service (NES)***

The NES is governed by the Environmental Act (2003) and is comprised of a National Environment Council (the permitting authority); Island Environment Authorities representing each island as policy and decision making bodies. The Environment Act (2003) prescribes measures for the control of litter in public places including the designation or approvals of waste disposal areas, and charges the NES with ensuring environmentally safe disposal of toxic chemicals and wastes. The Regulations below dictate waste practices on the (named) Outer Islands and the current state of plastic bag legislation.

- Environment (Atiu and Takutea) Regulations 2008
- Environment (Mitiaro) Regulations 2008
- Prohibition of Plastic Shopping Bags Regulations

Section 37 of the Act authorises the NES to prepare management plans for any island at the request of the Island Environment Authority in respect to 37(g) prevention and control of pollution and waste

### ***Ministry of Health (Public Health)***

The Public Health Act (2004) consolidates the law relating to public health and includes the following definition of waste: to include “... *garbage, refuse, litter, hazardous waste, building and demolition waste, other discarded or superfluous things from open fires, incinerators, or industrial, agricultural...*”

Section 2 defines “*hazardous waste*” as “*any waste that is likely to be a health hazard if released into any water and includes the following: animal waste, medical waste or sewage sludge, other by-products, or other waste from devices, facilities, plants or other systems that treat water, sewage, or pollution (for example, septic tanks, other sewage treatment facilities, water treatment plants or sewage treatment plants); [and] any other waste declared by the Queen’s Representative by Order in Executive Council to be hazardous waste for the purposes of this Act*”

Part 6 of the Public Health Act (2004) has the stated purpose of ensuring that “*waste is safely stored, collected, treated, removed, transported, disposed of, and otherwise dealt with*”. It prescribes regulations for those responsible for solid waste containers, and prohibits the burning of plastics and tyres, with exception of fire fighting training. It also legislates fines for non-compliance.

Part 8 of the Public Health Act (2004) also regulates “*offensive trades*” which includes asbestos removal, processing or disposal, operating a waste disposal site, scrap metal processing, and waste collection, treatment or disposal. This section of the Act requires those wishing to be involved in offensive trades to apply for a renewable permit (maximum 1 year).

## **Ministry of Agriculture**

The Ministry of Agriculture through the Bio-security Management Unit is mandated under the Bio-security Act (2008) to manage waste from vessels at designated ports of entry which may pose a bio-security hazard. Among its requirements, the Biosecurity Act (2008) prohibits incoming vessels from discharging garbage containing animal, plant, or their products into the sea, and requires fenced facilities to be established at Bio-security points of entry or departure for the incineration or other disposal of regulated articles without creating an unacceptable bio-security risk.

The Pesticides Act (1987) provides for the regulation and control of the importation and sale of pesticides. In the ADB Report it reports that *"The Pesticides Act 1992 (sic) is inoperative [and] NZ's Pesticide protocol/standards<sup>1</sup>, are applied in the Cook Islands. However there has been no analysis undertaken to show if NZ's standards are applicable to the Cook Islands. For the same reasons, the Pesticides Board has become defunct"*. The Pesticides Act (1987) has not been repealed; therefore, it is still in force. A Pesticides Bill has been in draft for several years and perhaps it is timely to revisit the draft Bill to incorporate any new provisions relating to hazardous waste.

## **Ministry of Infrastructure Cook Islands (ICI)**

There is no specific Act which governs ICI although it is responsible for the operation and maintenance of solid waste management facilities and services on Aitutaki and Rarotonga as well as the performance of any private contractors engaged by the Ministry, such as the domestic waste collection contract for Rarotonga. The Water, Waste and Sanitation Unit (WATSAN) operates under ICI. WATSAN has a role in developing and managing the implementation of policy as it relates to waste management. The unit also manages and implements projects in the areas of research, capacity development and infrastructure development in the areas of water, waste and sanitation, and produces communication and awareness material on solid waste and sanitation.

## **Ministry of Outer Islands Development**

The Ministry of Outer Islands Development (MOID) was established in 1994 by an Act of Parliament, to coordinate the transition of empowerment to the Outer Islands. In 2000, under an Order in Executive Council, each island administration became an independent ministry within the office of the Prime Minister. The Pa Enua Governance Unit<sup>2</sup> was formed (superseding MOID) to provide a policy, coordination and technical services role<sup>3</sup>. Island Administrations are therefore responsible for waste management including ensuring dedicated refuse sites and the collection of domestic waste. These responsibilities are stated in the Pa Enua Governance Act (2012-2013).

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<sup>1</sup> Legal and Institutional Strengthening of Environmental Management in the Cook Islands (ADB TA:42373-COO), Volume 2: Institutional Profiles (taken from Hilyard (2010), Persistent Organic Pollutants (POPS): POPS Team Reports Book 2.

<sup>2</sup> Formerly known as OMIA which was under the Ministry of Infrastructure Cook Islands.

<sup>3</sup> ADB Technical Assistance Consultant's Report Review of Outer Island Government: Roles and Accountability (Sept 2011), p7.

## ***Office of the Prime Minister (OPM)***

The OPM is responsible for guiding and monitoring policy across the Cook Islands Government. Under the direction of the Chief of Staff, the OPM is responsible for the administration and monitoring of the National Sustainable Development Plan (NSDP) which sets the framework for policy and planning for the Cook Islands Government.

## **Conventions and Policies Relevant to Solid Waste Management**

### ***International Conventions***

The Cook Islands has ratified, acceded to, or endorsed several international and regional treaties relating to waste management and pollution prevention, including:

- Basel Convention on the Trans-boundary Movement of Hazardous Wastes and Their Disposal
- Stockholm Convention on Persistent Organic Pollutants
- Rotterdam Convention on the Prior Informed Consent Procedure
- International Convention for the Prevention of Pollution From Ships
- United Nations Framework Convention on Climate Change
- Vienna Convention – Montreal Protocol
- MARPOL Convention - International Convention for the Prevention of Pollution from ships (1973 as modified by the MARPOL protocol of 1978)
- United Nations Convention for the Law of the Sea and its London Protocol on marine litter
- United Nations Convention to Combat Desertification and Land Degradation

### ***Regional Agreements and Conventions***

- Pacific Regional Solid Waste Management Strategy 2010-2015
- Pacific Islands Framework for Action on Climate Change 2006-2015
- Pacific Ocean Pollution Prevention Programme Strategy 2011-2014
- Nouméa Convention
- Waigani Convention

Relevant aspects of these obligations are incorporated into this National Solid Waste Management Strategy.

### ***National Context***

#### **National Sustainable Development Plan (NSDP) 2011-2015**

The NSDP 2011-2015 is the central planning document for Government and sets out the policy objectives for the Cook Islands for a five year period (NSDP, 2011-2015). The NSDP 2011-2015 recognises that solid waste management, including hazardous waste, is a critical issue and articulates the government's commitment to implementing programmes, providing facilities and incentives to achieve zero waste through to establishing necessary institutional arrangements and public-private partnerships.

## **National Environment Strategic Action Framework 2011-2015 (NESAF)**

The NESAF 2011-2015 provides guidance and direction for achieving sustainable social and economic progress for the Cook Islands by utilising natural resources and the environment wisely. It aims to sustain efforts generated from growing environmental awareness to protect, conserve and manage the environment and natural resources.

### ***National Implementation Plans under various Conventions***

- Persistent Organic Pollutants (POPs) - Stockholm Convention 2010-2011
- Ozone Depleting Substances (ODS) – Vienna Convention - Montreal Protocol
- National Plan of Action for Climate Change and Disaster Risk Management
- National Action Plan under Convention to Combat Desertification and Land Degradation

### ***Policies and Regulations***

There have been several policies and plans developed in the Cook Islands around solid waste management. In drafting this Strategy, these have been reviewed, in order to avoid “reinventing the wheel” and to learn what has worked as well as what is still valid and relevant. From this review we can then develop an understanding about what needs to be improved and updated to ensure the success of this National Solid Waste Management Strategy.

#### **Draft Cook Islands National Waste Strategy 2004**

A document residing at ICI and developed by Maunsell Ltd (2004)<sup>4</sup>. It has been referred to for the development of this strategy.

#### **Environment (Atiu and Takutea) Regulations 2008**

These regulate the environment for Atiu and Takutea islands. It prescribes measures for environmental protection including:

27. Controlled litter - It shall be unlawful for any person to bring onto the Island any non-biodegradable plastic shopping bags or glass beer containers whether for personal or business purposes.
28. Disposal of litter at home - All litter that can be burned at the homes, with the exclusion of disposable nappies, glass and glass containers, plastic bags, hazardous waste, and motor parts, shall be disposed of in a safe and proper manner, either by burning or burying in the ground, or by disposal at the designated public waste disposal and treatment site.
29. Recyclable materials - The Island Council, in consultation with the Island Environment Authority, shall be responsible for the environmentally sound collection, storage, and export of all cans, bottles, batteries and other recyclable materials.
30. Hazardous materials and waste - (1) It shall be unlawful for any person without a written permit from the Island Environment Authority to bring onto Atiu any product that will produce hazardous waste or will become a hazardous waste once its use has expired

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<sup>4</sup> AECOM is now the name of the former New Zealand based Maunsell Ltd consulting group.  
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31. Designation of a public waste disposal and treatment site - (1) The Island Council in consultation with the Island Environment Authority and Landowners shall be responsible for the designation of any site for the purpose of public waste disposal and for the storage of recyclable materials.

**Environment (Mitiaro) Regulations 2008**

These regulations apply to Mitiaro Island and includes provisions for Waste Management which are identical to the Environment (Atiu and Takutea) Regulations 2008.

**Draft Waste Policy 2010**

This was prepared by AECOM, and is held at the Office of the Prime Minister. This document was used in the development of this strategy.

**Plastic Bag Regulation 2012**

The plastic bag regulation bans the importation of non-biodegradable plastic bags into the Cook Islands. Prohibition of Plastic Shopping Bags regulations made under section 70 of the Environment Act (2003).

## Solid Waste Management and Disposal

The Rarotonga waste facility contains a sanitary landfill, which was completed in 2006 with joint financing from the ADB and the Cook Islands Government. It receives waste from all of Rarotonga and has a design lifetime of 15 years (ADB, 2001). The Aitutaki Waste Facility was also constructed in 2006 under the same project, but has a design lifetime of 20 years. The Outer Islands, in general, use local dump sites for waste disposal.

A waste collection service on Rarotonga is provided by ICI free-of-charge to residents twice weekly. Businesses are responsible for their own waste collection and may opt to pay for the collection service or deliver their waste to the Rarotonga Waste Facility. The fee for delivering waste is listed on Table 3 below. Aitutaki runs a similar system except that it is the Island Administration that manages the residential collections. On other islands, the Island Administrations are responsible for waste management.

**Table 3: Rarotonga Waste Facility Fees**

LOAD	GATE FEE
Car boot	\$10
Small truck load	\$10
Truck load	\$20
Raro Bin	\$20
Big truck	\$40

There are several positive waste recycling initiatives that operate on Rarotonga, including:

- ICI engages a private contractor (T&M Heather) - to uplift recyclables
- Cook Islands General Transport - engaged for periodic collections of white-ware
- Recycle Cook Islands – a privately operated recycling business
- Cook Islands Trading Corporation - the main wholesaler/retailer on the island. Cook Islands Trading Corporation also has a shipping arm (XCIL Shipping). The company has established a recycling committee driven by senior managers to lead its recycling initiatives
- Small scale recycling initiatives, for example, Brad’s Auto Body Repairs Ltd, reuses crushed glass for driveways and concrete. The reuse of glass is also practiced on the outer islands.
- The Titikaveka Growers Association are working on being collectors of organic waste to turn into compost.

The main items of waste regularly collected for recycling are glass bottles, aluminium cans, plastics numbered 1 and 2, steel, and occasionally white-ware. In December 2010, there was an E-Waste-day event that collected computer waste, which was sent to New Zealand for dismantling for recycling. This event was in conjunction with, and funded by, e-Day New Zealand. Cook Islands Trading Corporation runs a paper and cardboard recovery operation, a “take back” scheme for incandescent light bulbs and sends a large portion of plastic packaging back to New Zealand.

On Rarotonga, segregation of solid waste at source is encouraged by the Government, but this is not widely practised by the community. Some further sorting takes place at the waste management facility

before compaction but this removes a very small fraction of recyclables or other waste that could be diverted from the landfill for other purposes. In the Outer Islands, recycling and sorting is not regularly practiced.

The disposal costs in Table 3 are relatively low for the disposal of waste at the Rarotonga waste facility. Although the cost does not truly reflect the full cost of disposal, there is a concern that any increase in the fees would result in illegal dumping due to low prioritisation of solid waste management by some members of the community. Litter in public places is also a growing problem.

The Cook Islands Government has made no provisions for proper hazardous waste storage. In the meantime, the public are requested to store hazardous waste such as electronic appliances under dry cover at homes until better arrangements can be made.

## Challenges in Waste Management

### Lack of legislation heightens ambiguous role responsibilities

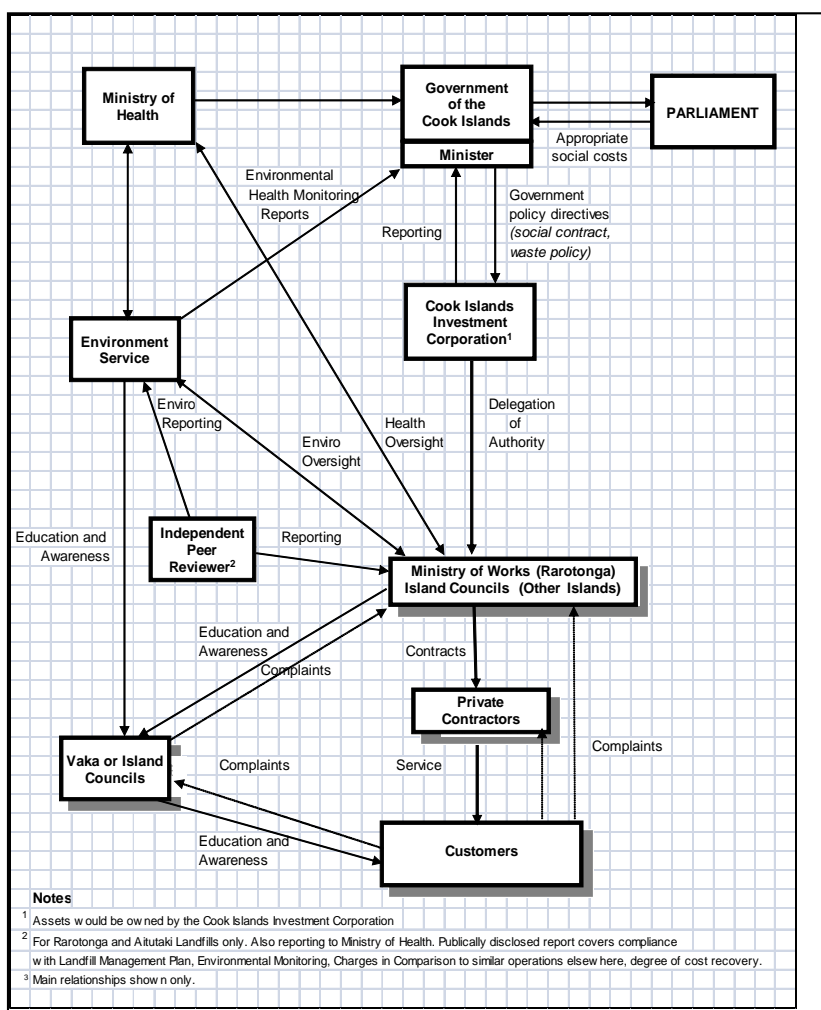


Figure 1: Institutional Arrangements for the Management of Solid Wastes ((Cook Islands National Waste Management Strategy, 2004). Note that the Vaka Councils were abolished in 2007 and the Ministry of Works is now called the Ministry of Infrastructure Cook Islands

The management of solid waste in the Cook Islands has required collaboration between government agencies, resulting in inconsistencies and confusion in the community. The entangled web of roles and responsibilities in Figure 1 above illustrates how ambiguity, role confusion and possible failings in such a system might occur. Anecdotal evidence suggests that a key weakness has been the absence of a single point of accountability with a coherent legislative framework to drive the implementation of all waste management initiatives.

Different plans and strategies have sat with the NES and ICI, but there has been slow progress in implementing them. Reasons for this could include limited human resources, and low priority rating for budget appropriation.

### ***Limited institutional capacity due to small population***

The limited number of knowledgeable staff working in solid waste management presents a significant challenge for the Cook Islands Government to advance proper solid waste management. This issue is compounded by the country's depopulation trends. This highlights the need for a clearly designated and appropriately resourced focal point within government that will take responsibility for the implementation of this waste management strategy.

Consistent data collection on waste and different waste streams has been haphazard, which further highlights the lack of coordination, resources and reliable information for decision-making. However, various reports over the years have produced estimates on the amount of waste entering the landfill on Rarotonga.

### ***High transport costs related to small dispersed land masses***

As shown in Table 1, there are significant distances between the capital island, Rarotonga, and the Outer Islands. This factor, combined with the Cook Islands isolation from metropolitan countries that have recycling facilities, increases the cost of recycling. This has inhibited an appropriate mechanism for solid waste recycling and the safe disposal of hazardous waste.

### ***Poor management of narrow and limited economic base***

Lack of investment into solid waste management infrastructure has contributed to limited capacity, unsustainable funding and inadequate maintenance of solid waste facilities. This includes the absence of safe storage for hazardous waste. The commitment to the three dimensions of sustainable development (social, environmental and financial) is hence, weak.

### ***Asymmetrical trade balance***

Imports to the Cook Islands far exceed exports, including the export of waste. A large amount of these imports is food items in which packaging constitutes significantly to the generation of waste. This waste

stream is increased to meet the additional consumption needs of visitors. In addition to this import export imbalance, many shipping containers return to New Zealand empty.

### ***Human and environmental health is threatened by hazardous substances***

There is a risk that the food web and ecosystems could be contaminated by toxic substances contained in or produced by the degradation of inappropriately disposed-of wastes. Hazardous substances include POPs (pesticides and dioxins from plastics) and heavy metals (mercury, lead, cadmium). Special attention will also be required to safeguard against the risks associated with the wastes generated by any future deep sea mining.

Global warming, as a result of climate change, has been shown to worsen POP emissions and concentrations. Extreme weather events that cause flooding trigger secondary emissions of POPs in agricultural lands and storage sites. Climate change is also predicted to increase precipitation in some areas therefore attention also needs to be focused on landfill management as increases of leachate from increased precipitation is a very real threat to the surrounding environment including the lagoon.

The above risk factors have the potential to degrade ecosystems that form the basis of the Cook Islands economy and well-being of its people. This includes subsistence lifestyles as well as tourism, black pearls and agriculture.

Litter has far reaching national and international consequences which are detrimental to human health, wildlife and the environment. This includes degradation of the aesthetic quality of the local environment, impacting negatively on tourist perceptions and, harming wildlife. Much of the litter that is dropped on land will end up in the ocean, eventually becoming part of the “Pacific Garbage Patch”. The Pacific Garbage Patch is a body of plastic waste in Pacific Ocean that, due to ocean currents, has converged to form a mass as large as the state of Texas, in the United States. Oceanic litter is responsible for contamination that reaches the human food web.

# THE WAY FORWARD

The first draft of the National Solid Waste Strategy 2011-2015 was developed with the assistance of the Secretariat of the Pacific Regional Environment Program (SPREP), who held consultations with major stakeholders during an in-country mission in April 2011. The proposed way forward was developed using a participatory and consultative approach, following an analysis of the existing situation. This Strategy supersedes the previous draft and contains new data and information from the interim period (between 2011-end of 2012). The National Solid Waste Management Strategy 2013-2016 is intended to be a living document in that it will be reviewed on a regular basis in order to incorporate new information and data so that it provides relevant and viable guidance for solid waste management.

## Guiding Principles

In defining the strategy for solid waste management in the Cook Islands, the following principles have been developed to lay the foundation on which to build the actions that will transform current solid waste management practices.

### *Polluter-pays Principle*

Those responsible for causing pollution or generating solid waste should pay for the cost of dealing with the pollution, or for managing solid waste collection and disposal in order to maintain ecological health and diversity. Individual responsibility for solid waste management should be encouraged. It is essential to develop funding mechanisms based on the polluter-pays principle, which will sustain solid waste management in the future without constant reliance on government or donor funding.

### *Precautionary Principle*

Lack of scientific data/information should not be used as a reason for not acting to prevent serious or irreversible environmental damage or degradation from the mismanagement or lack of prevention of solid waste.

### *Consultation Principle*

All levels of government, communities and organizations should be consulted throughout the development and implementation of solid waste management strategies and action plans. Such strategies or plans should be openly accessible to those in the community who are interested.

### *Waste Hierarchy*

The "Waste Hierarchy" is a strategic tool which prioritizes actions for solid waste management. The general hierarchical model that will be used consists of 4 'Rs – Refuse, Reduce, Reuse, and Recycle. This model prioritizes waste avoidance and reduction methods, before reuse, recycling, and final disposal. In

our model, the first R, (Refuse) places the onus on importers and consumers to reject the purchase of products that produce waste that is difficult and expensive to dispose of in an environmentally sound manner.

### ***Proximity Principle***

Solid waste should be managed as close to the source as possible. This recognises the need for producers of waste to take responsibility for the management of that waste. It also recognises that there are costs - both environmental and financial - associated with transporting waste over longer distances.

## **Vision**

An informed and proactive Cook Islands community taking responsibility for sustainable solid waste management, with an aspiration towards Zero Waste.

This long-term vision, as promulgated by the Solid Waste Management Committee, guides the policies and strategies for solid waste management in this document.

## **Defining a “Zero Waste” Cook Islands**

The Zero Waste Cook Islands envisioned is one where:

- The amount of potential waste to landfill is minimised through responsible supplier and consumer behaviour, supported by legal instruments, and enforced by government.
- Waste resulting from consumer products are either first reused for other purposes.
- Waste products that are suitable will be composted.
- Waste products that are recyclable are repatriated for recycling.
- Hazardous waste and other products that cannot be recycled or appropriately processed or disposed of on-shore will be temporarily stored in appropriate containment facilities to be expatriated to facilities overseas to be processed. Expatriation will only occur after the Cook Islands Government is satisfied there will be appropriate processing and disposal of this waste in the receiving country.
- Only when all the above alternatives have been explored, and have been deemed technically and, or economically unviable, will non-hazardous waste be considered for final disposal using available disposal solutions.

# POLICY OBJECTIVES

## What we want to achieve

1. Minimise the volume of solid waste to landfill by using the “Waste Hierarchy” (Refuse, Reduce, Reuse, Recycle).
2. Have a clear and robust institutional and legislative framework.
3. Develop appropriate infrastructure including separation and storage facilities.
4. Make solid waste management cost neutral and capitalise on potential economic opportunities.
5. Create a culture of responsible solid waste management where waste management is everyone’s responsibility. This can be advanced through education, advocacy and enforcement.
6. Develop a strong monitoring and evaluation system.

## Scope

This Strategy covers the following waste types:

- All solid wastes from household, commercial, industrial, and institutional sources.
- Medical, dental or health-care wastes from hospitals and clinics.
- Electrical and electronic wastes such as computers, televisions, and white-ware.
- Hazardous waste including asbestos and lead acid batteries.
- Difficult or intractable solid wastes such as end-of-life vehicles, and tyres.

## Implementation Period

This Strategy covers a four year implementation period from 2013-2016.

## Coordination

The Solid Waste Management Committee recommends that initially the implementation of the strategy at the national level will be coordinated by the WATSAN unit of ICI until such time as long-term formal management arrangements have been established to coordinate solid waste management in the Cook Islands.

## Stakeholder Priorities

During stakeholder consultation to discuss the original 2011 draft, certain areas were identified as community priorities. These areas were:

- Legislation
- Capacity Building
- Policy and Planning
- Sustainable Financing
- Education and Awareness
- Monitoring and Evaluation



- Environmental monitoring
- Integrated Solid Waste Management (ISWM)

To achieve the Strategy's vision and to implement policy and actions, these community priorities have been clustered into four main action areas:

1. Legislative Framework, Infrastructure and Institutional Arrangements
2. Sustainable Financing
3. Monitoring and Evaluation
4. Education and Awareness

Each of these action areas is expanded in the following chapters by

1. Setting targets to be achieved within the implementation period
2. Outlining the strategies for achieving those targets and
3. Identifying the key performance indicators for evaluating success

# INTEGRATED SOLID WASTE MANAGEMENT FRAMEWORK

*"Integrated Solid Waste Management (ISWM) is a comprehensive waste prevention, recycling, composting, and disposal programme. An effective ISWM system considers how to prevent, recycle, and manage solid waste in ways that most effectively protect human health and the environment" (Solid Waste and Emergency Response, 2002).*

The Cook Islands Integrated Solid Waste Management Framework (ISWMF) also considers the effects of imported products; the full life-cycle of products through to when they become solid waste; and social attitudes and behaviour towards solid waste. The ISWMF establishes, through following the 'Waste Hierarchy', waste prevention as the first step to minimising solid waste. These ISWM steps are diverse and relevant throughout the four actions areas of this Strategy. Additionally, a single formalised institutional focal point in charge of solid waste management would oversee all further actions and ensure that individuals and organisations practise good solid waste management in everyday living.

## 1. Legislative Framework, Institutional and Infrastructure Arrangements

To enable the successful implementation of the ISWM principles and realise the Cook Islands 'Zero Waste' vision; suitable legislation, institutional and infrastructure arrangements must be developed that ensure accountability and targets are achieved. Inherent in these arrangements is the need to build capacity to ensure qualified and competent staff, enforce and successfully implement sustainable solid waste management.

National government as signatory to International Conventions have the responsibility to enact and enforce legislation that ensures appropriate standards of practice are adhered to which protect the environment from damaging practices. Outer island administrations are responsible for enforcement of this legislation on behalf of the national government. Individuals must take responsibility for their actions, to ensure that they play their part in an economically viable and environmentally sound solid waste management system.

### *Legislative Framework*

Develop relevant streamlined legislation with clear laws and regulations around solid waste prevention, recycling and management of different waste streams. This legislation will also articulate the roles and responsibilities of agencies responsible for the coordination of solid waste management.

## Recommended Actions/Setting the targets

- Legislation is developed that formalises the ISWMF under the auspices of the ICI. Legislation is centralised to integrate sound solid waste management.
  - Regulatory arrangements are prepared for a new solid waste entity or division to take over the management of the ISWMF once the system is operating.
  - To reinforce some elements of the Waste Hierarchy (Refuse, Reduce, Reuse, Recycle).
    - A Green Procurement Policy will ensure that imported goods meet criteria that ensure it can be disposed of in a way that causes no damage to the environment.
      - Customs tariff codes will be updated in compliance with the globally harmonized system so that products that are hazardous or contain hazardous substances are identified at import entry.

### 1. REFUSE

Ban the importation of certain products

- 1.1 Ban the importation of potentially hazardous non-biodegradable products e.g., all types of plastic shopping bags.
- 1.2 Restrict and/or ban certain products e.g. PET, glass bottles, disposable nappies, goods that have excessive packaging.
- 1.3 Ban products that could be replaced by other environmentally friendly alternatives e.g., disposable plastic plates replaced with disposable biodegradable rice flour plates.

### 2. REDUCE

- 2.1 Implement ADF in order to provide for the management and proper disposal at the end-of-life for all solid wastes.
- 2.2 Promote eco-design that has regard for the environmental performance of products throughout their whole life cycle.
- 2.3 Enshrine solid waste management activities within a single piece of legislation to aid in streamlining and coordinating the regulation of solid waste prevention, minimisation, and management.

### 3. REUSE

Defined as “the **re-use** of products or components that are not considered to be waste; and the activity involves reuse of products or components for the original purpose” (Scottish Government, 2010).

- 3.1 Create a permit system ensuring that any activity involving the reuse of waste products to create a new product are done so in an environmentally sound and informed way.

### 4. RECYCLE (sorting)

Recycling is defined as the recovery of any waste that is reprocessed to make new products. There needs to be compulsory residential and commercial separation of waste.

- 4.1 Ban 'green' waste and food scraps from household rubbish bins.
- 4.2 Promote and educate about composting and alternative uses of green waste and food scraps rather than sending to the landfill.

### Performance Indicators

- Integrated and streamlined national solid waste management legislation is adopted
- Legislation legitimises the new waste entity
- Solid waste management bylaws are integrated into the work plans of government departments

### *Institutional Arrangements*

In establishing a framework it is important to have a focal point of responsibility to coordinate solid waste management activities nationally and also provide a central point of accountability for the achievement of targets and goals in this area. This proposal has been reinforced in reports by Thomas (2009) and Palmer (2012).

Previously solid waste management and the responsibility for it, was a shared responsibility between the NES, ICI, Ministry of Health (MOH) and Island Councils. However, as previously mentioned, this complex web of responsibility can, and has, led to confusion over roles and responsibilities resultant in inefficiencies and failures in sustainable solid waste management.

It is envisioned that revenues to finance the operation of the responsible entity will consist of polluter pays charges, such as ADF, fines from non-compliance against solid waste legislation and/or new taxes on waste disposal.

### Recommended Actions/Setting the targets

- A single dedicated solid waste entity or division established and made responsible for:
  - the environmentally sound management of solid waste throughout the Cook Islands.
  - the monitoring of government and private sector in their management of the life cycle of products they import.
  - managing the enforcement of solid waste management and legal action for offences against it.

### Performance Indicators

- A formal entity or division mandated (via the drafting of new legislation) to manage solid waste in the Cook Islands in a manner that will promote accountability and efficiency and develop partnerships with private sector and non-governmental stakeholders and interest groups.
- It will:
  - Assess capacity gaps for waste management throughout Cook Islands

- Identify and access relevant and practical training opportunities for staff members to address gaps.
- Develop long-term human resource development plan to support continuous staff development.
- Enforcement training manuals and associated training delivered to staff involved in waste management.
- Ensure efficient and effective waste management in an environmentally sound manner services through:
  - Efficient and affordable waste collection system.
  - Policies that will ensure proper disposal of wastes on all islands.
  - Encourage compliance with waste legislation and ensure that there are effective remedies for non-compliance.

## *Infrastructure*

Further research must be conducted to define the scope of works required to upgrade solid waste containment and storage and disposal facilities, including waste to energy conversion, and the cost of these works. At present such upgrades are not part of the Cook Islands midterm capital works budget (Ministry of Finance and Economic Management (MFEM), 2012). However, in the long term these upgrades may be funded or at least partially funded by revenue generated by advance disposal fees and other polluter pays charges.

## *Recommended Actions/Setting the targets*

Ensure that adequate infrastructure is consistent with the aspirations of the Cook Islands' long term "Zero Waste" policy

- Explore lands and sites (including the viability of existing sites) across the country that may be used for the establishment of solid waste management facilities.
- Establish community recycling centres and solid waste storage sites on all islands. These centres should serve as the collection and storage point for recyclables and hazardous wastes. Solid waste from Outer Islands will be shipped to Rarotonga for further consolidation and export.
- Equipment and facilities in Outer Islands may consist of a simple waste baler that bales residual/general waste (excluding organic waste and recyclables), which are then placed in a designated site ready for forwarding to Rarotonga and onwards.
- Segregation bins in public places and for households such that homes have separate bins for separating household waste.

Strategies to achieve the targets

## Performance indicators

- All national obligations under the Waigani, Basel, Rotterdam and Stockholm Conventions are met.
- Regulation and service delivery of solid waste management activities are clearly separated.
- Solid waste management complies with all relevant Cook Islands Bills and Acts.
- Number of island solid waste management plans adopted and implemented.
- Appropriate infrastructure established throughout the nation with successful management and maintenance plans in place and in operation.
- Demarcated roles for regulation, management and enforcement of solid waste management
- Establish a complaints mechanism to report periodically on the number of complaints received and the success rate in resolving them.

## 2. Sustainable Financing

To ensure a financially secure ISWMF, sustainable financing is needed to avoid reliance on donor aid and the already exhausted government budget.

In designing a financing system for the management of solid waste, there are various, and sometimes competing considerations that must be weighed. The primary principles that should guide the development of a sustainable financing arrangement include:

- Fairness and cost neutrality across the community. The aim of the financing system is cost recovery rather than to make a profit .
- ADF: importers of goods, which will require environmentally sound disposal at the end of the product life cycle, should contribute towards this cost so that human health and the environment is not put at risk by its import.
- Redirection of the Environmental Protection Fee (EPF) from the departure tax for its intended purpose.
- Polluter-pays: those who purchase products that are difficult to dispose of, should also contribute towards its environmentally sound disposal or management (internalisation of costs).
- Affordability: disposal charges will aim not to severely impact lower income groups.

### Recommended Actions/Setting the targets

- A dedicated fund for solid waste management.
- A fair and affordable polluter pays system in proportion to the amount of solid waste produced, for generating revenue to finance solid waste management.
- Efficient and cost-effective solid waste management services, where the costs for delivering these services are distributed equitably among recipients of the service in proportion to the amount of solid waste produced, or in proportion to the extent to which the service is used.

- A high level of public and political awareness of the costs of solid waste management and the funding gaps.

### Strategies to achieve the targets

- Undertake an economic assessment to ascertain the costs of delivering an acceptable level of solid waste management services across all of the Cook Islands. This should include a cost benefit analysis and user preference of possible cost-recovery measures that take into account the socio-economic situation, with a view to recommending the optimum mix of cost-recovery measures and an implementation timeframe and modality for these measures.

The ease of administering these measures and recovering the revenue should be compared for all options. Cost recovery measures that could be considered include:

- ADF: This fee incorporates the cost of managing that product at the end of its useful life. This could include a refundable deposit (container deposit) on specific products that are non-biodegradable/difficult to dispose of. This refundable deposit adds a value to the commodity and encourages the consumer to return the product at the end of its usable life to designated locations, thus improving segregation and reducing collection costs. The exact level of deposits and refunds will be determined through a proper assessment of the costs associated with the management and handling, as well as socio-economic conditions.
- Exploration of the use of pre-paid garbage collection bag for household waste collection or stickers for shop-bought bags. The price of the collection of household waste will be built into the purchase price of the bag or sticker. These will be the only bags picked up on collection day.
- Exploration of the cost of municipal solid waste disposal incorporated household power bills.
- Any monies paid out for fines resulting from offences against legislation will be used for the operation of A dedicated solid waste entity.
- A percentage of the EPF dedicated to solid waste management.

### Performance Indicators

- A solid waste fund is established
- Adequate budget generated from sustainable sources results in reduced reliance on government subsidies and donor aid.
- No negative impact on lower income groups

## 3. Monitoring and Evaluation

Environmental protection relies on the minimisation of anthropogenic impacts on local, national and regional environments. The monitoring of the effectiveness of actions is essential if standards are to be maintained and effectiveness of actions understood

## Recommended Actions/Setting the targets

- Accurate and updated national solid waste statistics (including relevant information from all/significant businesses, industries and communities) regularly available through a central agency, which can be used as the basis for strategic action.
- Solid waste disposal facilities are monitored and managed in accordance with international standards to reduce environmental damage and ensure effective and efficient operations.
- Conduct a solid waste audit to ascertain the volume and patterns of solid waste flows so as to provide data such as the cost of solid waste, and appropriate infrastructure and measures to deal with the types and quantities of solid waste.
- Develop and implement environmental monitoring programmes for solid waste disposal sites.
- Development and enforcement of discharge standards (including emissions and releases) for solid waste disposal sites.
- Develop a reporting template for importers, both private and government, that is required by law to be submitted to A dedicated solid waste entity on an annual basis.

## Strategies to achieve the targets

- Create a product inventory system that is updated regularly.
- Create a regular monitoring and testing programme for testing solid waste management facilities for contamination.

## Performance Indicators

- Establishment of standards for environmental monitoring of soil, air, freshwater and marine water.
- Establishment of standards for bio-monitoring of humans, seafoods and marine invertebrates.
- Number of remedial actions conducted as a result of environmental monitoring data.
- Reliable, comparable, and timely statistics on solid waste management in Cook Islands readily available and accessible by the public (number of solid waste data reports submitted or collated).
- Required reports submitted to relevant international waste management conventions that are complete and accurate.

## 4. Education and Awareness

Education and awareness are the most crucial components of developing and embedding a culture of sustainable ISWM, with an informed and proactive Cook Island community taking individual and collective responsibility. It is envisioned that efforts in this area will create the greatest gains and benefits in solid waste prevention and recycling for the country over time. There are three main target groups:

- The first group are businesses and other larger scale solid waste producers (including government agencies) where targeted campaigns and in-house programmes can educate businesses about good solid waste management practices as well as the business



opportunities, cost and efficiency savings that can result from solid waste prevention and product stewardship measures and behaviour.

- The second target group is the general adult population where advertising, media and public awareness campaigns are the primary tools for changing attitudes and behaviours and encouraging improved practices around solid waste management.
- The third group is youth and children, where by mainstreaming sustainable solid waste management into the science curriculum and within school practices, the next generation of Cook Islanders will be educated in the principles, science and rationale of sustainable integrated solid waste management.

### Recommended Actions/Setting the targets

- Ensure that every individual and corporate body has a better understanding of their contribution to the solid waste problem.
- Encourage individuals to implement responsible solid waste management behaviours by following the 4 Rs waste hierarchy of the ISWMF, and to participate in solid waste management programmes and activities, while complying with the applicable laws.
- Promote consistent understanding and interpretation of this Strategy and everyone's responsibility to take ownership of it.
- Publicly reward and recognise 'waste champions' ie, individuals, organizations, schools, businesses that practice good solid waste management.
- Establish partnerships with organizations from all sectors of society (religious affiliations, private, government and NGOs) to help promote good solid waste management.
- Promote collaborative relationships where waste from one sector or individual may be utilised in an environmentally sound manner as a resource by another sector or individual.

### Strategies to achieve the targets

- Develop a communication strategy that captures all three of the target groups with effective strategies to instil good solid waste management behaviour including:
  - In-school and workplace solid waste policies.
  - Promote anti-littering.
  - Waste Hierarchy– 4 Rs
  - Encourage the community to be the eyes and ears of enforcement. Get evidence and photos of bad examples, preferably with the offender in the picture.

#### **1. REFUSE**

- Promote the "Say NO to plastic bags" campaign.
- Promote the idea of buying in bulk.
- Promote avoiding the purchase of products with excessive packaging.

#### **2. REDUCE**

- Use cleaner, more efficient technologies that produce less volume and/or less harmful waste products, e.g. cars and appliances.
- Promote eco-design that has regard for the environmental performance of products throughout their whole life cycle. Promotion of products that carry accredited eco-design labels.
- Develop awareness campaigns and the provision of information to businesses, encouraging the use of best practice and available techniques to prevent solid waste production.

### **3. REUSE**

Defined as “the **re-use** of products or components that are not considered to be waste; and the activity involves reuse of products or components for the original purpose” (Scottish Government, 2010).

- Encourage, through incentives and economic instruments (taxes, rebates, etc), the use of more durable products and discourage the purchase of single use disposable items (plastic nappies, plastics cups, etc) where a re-useable alternative exists.
- Create and encourage a culture of reuse, through the redistribution of items and goods such as building demolition materials, books, household ornaments, crockery, toys, clothes etc.
- Encourage the repair and or refurbishment of goods such as electronics, furniture or clothing that might otherwise be considered waste.

### **4. RECYCLING & COMPOSTING**

Recycling and/or Composting are defined as the recovery of any solid waste that is reprocessed in an environmentally sound manner for reuse in other products. This may include green waste for horticultural activity but exclude waste-to-energy conversion activities.

- Promote residential and commercial separation of waste (especially compostable and recyclable wastes).
- Develop viable recycling and composting initiatives with private sector partners at commercial scale, to ensure effective and efficient public private partnerships in developing the recycling industry in the Cook Islands.
- Promote home and community composting. This should be accompanied by a targeted awareness campaign to encourage backyard composting of organic waste, which may account for up to 25% of the household waste stream.

### **HAZARDOUS WASTE**

- Ban all forms of hazardous waste from household rubbish collection (the public informed via education and awareness activities of what is ‘hazardous’). Hazardous waste must be delivered to safe storage facilities or notice given to A dedicated solid waste entity for pickups.

- Establishment of a quarter yearly hazardous waste collection with reminders of collection made public through the use of media.
- Ensure that asbestos fibres contained in existing structures are stabilised to minimize further release of fibres to the atmosphere prior to eventual asbestos removal.
- Implement and enforce minimum occupational health and safety standards for personal protective equipment and standardised national operating procedures for all workers involved in routine and emergency response asbestos handling.

#### **ASBESTOS**

- Complete a public awareness campaign to convey accurate information about the relative risk of asbestos exposure and its minimisation in the Cook Islands.
- Seek public views on preferred asbestos disposal options prior to any future asbestos removal commencing.

#### **E-WASTE (INCLUDING WHITE-WARE)**

- Maintain media activities to raise awareness of the hazards of poor disposal of discarded e-waste.

#### **POPS AND PESTICIDES**

- Implement awareness activities in the Cook Islands National Implementation Plan for the Stockholm Convention.

#### **OZONE DEPLETING SUBSTANCES**

- Implement the regional and national Hydrochlorofluorocarbons (HCFCs) Phase-out Management Plan and relevant national Ozone Depleting Substances (ODS) management strategies. Ensure relevant audiences are kept up to date with the regional and national plans and strategies.

#### **MEDICAL, PHARMACEUTICAL AND QUARANTINE WASTE DISPOSAL**

- Develop an "Infectious waste" management policy.
- Assess alternative options for medical and quarantine waste disposal that meet with the standards of the relevant Conventions.

#### **OTHER HAZARDOUS WASTES (ODS, WASTE OIL, BATTERIES)**

- Strengthen regulatory arrangements under the new solid waste management entity to effectively enforce laws and regulations concerning solid waste management practices. Educate the public on what constitutes **other** hazardous waste.
- Repatriation of hazardous and non-biodegradable waste for environmentally sound disposal..
- Facilitate mechanisms that will enable cost recovery.
- Encourage NES and/or Solid Waste Management Authority staff to schedule regular public meetings on the outer islands relating to solid waste and actions communities can take to ensure "clean and green" outer islands.

Ensure that the media is kept informed of all matters relating to the development of this strategy.

#### **Performance Indicators**

- A communication strategy for solid waste management is developed and administered by the waste entity.
- Encourage and support the Ministry of Education to include and strengthen ISWM principles throughout the schools.
- Measurable percentage increase in waste segregation and recycling achieved.
- Reduction in observed litter.
- Increased percentage of population aware of, and engaged in good practices via surveys and other statistical analysis.
- Public access to periodic reports on complaints received about poor waste practices, and complaints resolved.

# PRIORITISATION

In initiating change to implement this strategy, we highlight two of the strategic actions as immediate priorities, to lay the foundation for the implementation of the other components of the strategy.

## Immediate Priorities

### I. Legislative review and drafting of Waste Management Act

As recommended as part of Policy Objectives (Legislative Review, Institutional and Infrastructure Arrangements) there is an immediate need to put in place a legislative framework to enable establishment of an effective ISWMF.

The primary outputs of this project will be:

- a) Analysis of current legislative framework with gap analysis and comparison to needs and objectives as stated in the National Solid Waste Management Strategy
- b) The drafting of a Waste Management Bill, to establish the institutional framework for solid waste and empower government to uphold and enforce sustainable solid Waste Management practices in working towards a 'Zero Waste Cook Islands'.

Suggested Time frame: 1<sup>st</sup> June 2013 - July 2014

### II. Establish a Solid Waste Management Entity

As recommended as part of Policy Objectives (Legislative Review, Institutional and Infrastructure Arrangements) there is an immediate need to put in place an agency that will be solely responsible for the management of solid waste and the implementation of the Integrated Solid Waste Management Framework.

The primary outputs of this project will be:

- a) Mandate and legislate the establishment of a Solid Waste Management entity as in the legislative work.

Suggested Time frame: 1<sup>st</sup> August 2013 - January 2014

### III. Establish a dedicated fund

As recommended as part of the Policy Objectives there is a need to have a fund that is solely for the management of solid waste including the operation of the Solid Waste Management Entity.

Suggested Time frame: 1<sup>st</sup> August 2013 - October 2013

### IV. Conduct a national waste audit<sup>5</sup>

This will help form a baseline understanding of the scale specific issues of solid waste management in the Cook Islands. This will then help inform all subsequent actions

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<sup>5</sup> SPREP (2006) describes a waste audit to be " The first step to any waste management strategy is to develop an accurate waste inventory or database on the different types of waste destined for landfill"

around appropriate measures and costs and cost recovery of waste management in the Cook Islands. Outputs of this study will be:

- a) Volume of solid waste produced by island.
- b) Detailed understanding of waste streams.
- c) Assessment of current issues with solid waste management methodology, treatment, facilities etc.

Suggested Time frame: 1<sup>st</sup> July 2013 - July 2014

#### V. Economic assessment of the costs of solid waste management in the Cook Islands

This needs to be conducted to assess the costs of solid waste management to determine the type and levels of charges to recover the costs of solid waste disposal/management.

The outputs of this report will be:

- a) Economic Impact assessment of the cost of solid waste and environmental degradation resultant of waste.
- b) High, medium and low cost options for ISWM infrastructure in the Cook Islands.
- c) Drafting of a tariff framework for cost recovery across the country.

Suggested Time frame: 1<sup>st</sup> July 2013 - 30<sup>th</sup> September 2013

Suggested Time frame: 1<sup>st</sup> July 2013 – 31<sup>st</sup> December 2013

Other strategies (see below) are prioritised with the intent to lay the policy and legislative framework and then implement initiatives that have associated capital and operating costs on an ongoing basis.

What follows is a table of the different strategies across action areas, classified in order of priority with approximate starting dates for their implementation.

## Strategy Timeline

<b>Priority (Date of Inception)</b>	<b>Strategy</b>	<b>Responsibility/Lead</b>
<b>Already in Progress</b>	Ban the importation of non-biodegradable plastic shopping bags.	National Environment Service, Office of the Prime Minister
	Maintain media activities to raise awareness of the hazards of poor disposal of discarded e-waste.	National Environment Service, Ministry of Infrastructure Cook Islands
<b>Immediate Priorities</b>	Develop relevant streamlined legislation with clear laws and regulations around solid waste prevention, recycling and management of different waste streams. This legislation will also clearly articulate the roles and responsibilities of agencies in an integrated waste resource management system as well as establish the mandate for the creation of the aforementioned institution that will be primarily responsible for the coordination of solid waste management.	Ministry of Infrastructure Cook Islands

	A single dedicated solid waste entity or division established.	Ministry of Infrastructure Cook Islands
	A dedicated fund for solid waste management.	Ministry of Infrastructure Cook Islands
	Undertake an assessment of the costs of delivering an acceptable level of solid waste management services, including waste to energy conversion, across all of the Cook Islands. This should include a cost benefit analysis and user preference of possible cost-recovery measures that take into account the socio-economic situation, with a view to recommending the optimum mix of cost-recovery measures and an implementation timeframe and modality for these measures.	Ministry of Infrastructure Cook Islands
	Conduct a thorough solid waste audit to ascertain the volume and patterns of waste flows to inform things such as the cost of solid waste, and appropriate infrastructure and measures to deal with the types and quantities of waste.	Ministry of Infrastructure Cook Islands
<b>2013-2014</b>	Restrict and/or ban certain waste products via legislation and regulation.	The new waste entity/division
	Incentivise the use of cleaner, more efficient technologies that produce less wasteful and/or harmful products in products such as cars, appliances etc.	The new waste entity, National Environment Service; Climate Change Division
	Develop the use of effective and meaningful indicators. For example, reductions for solid waste generated in Cook Islands can be measured and reported in terms of waste per household, waste per capita or waste per unit of GDP.	The new waste entity/division
	Legislate solid waste minimisation regulations enshrining them within a single piece of legislation to streamline the regulation of waste minimisation, prevention and management.	The new waste entity/division
	Undertake a detailed inventory of the quantity and status of asbestos materials in buildings located in the Cook Islands.	The new waste entity/division
	Complete an objective evaluation of relevant asbestos disposal options and seek public views on preferred asbestos disposal options prior to any future asbestos removal commencing.	The new waste entity/division
<b>2013-2014</b>	Identify suitable financial instruments to fund the management of and return end-of-life e-waste products for storage and eventual re-exportation.	The new entity/division
	Identify preferred recycling disposal facilities overseas to send items where the processing of the maximum value of recyclables at the end of an items lifecycle can be carried out.	The new waste entity/division
	Explore solid waste incineration as a possible option for the Cook Islands considering the Cook Islands unique circumstances as a small island developing state and taking into consideration environmental, social, economic and health impacts. Establish international standards for operating procedure of incinerators including temperature monitoring,	The new waste entity/division

	analysis of gaseous pollutants, analysis of residual ash and analysis of chimney particulate matter.	
	Assess alternative options for medical and quarantine waste disposal.	The new waste entity/division
	Develop a Communication Strategy for solid waste management.	The new waste entity/division
	Undertake a baseline survey of current good solid waste management practices now being undertaken and of the understanding of the role of good solid waste practices in ensuring sustainable development. The survey should cover different generations and sectors of society.	The new waste entity/division
	NES to develop template for communication and success measurement.	National Environment Service
	Advertise for lands and sites across the country that may be used for the establishment of solid waste management facilities.	The new waste entity/division
	Dependant on the outcome from the prospect of incineration, explore environmentally sound waste-to-energy conversion options.	The new waste entity/division
	Assess capacity gaps for solid waste management throughout Cook Islands.	The new waste entity/division
	Identify and access relevant and practical training opportunities to address sustainable solid waste management knowledge gaps	The new waste entity/division
	Exploration of appropriate charges per household for the sustainable management of municipal solid waste. Exploration of appropriate charges to businesses' for the sustainable management of corporate solid waste.	The new waste entity/division
<b>2014-2015</b>	Implement ADFs to provide for the environmentally sound disposal of all wastes at the products end-of-life.	The new waste entity/division
	Procure eco-design products that bear accredited labels that have regard to the environmental performance of products throughout their whole life cycle.	The new waste entity/division
	Develop awareness campaigns and the provision of information to businesses', encouraging use of best available techniques to prevent solid waste production	The new waste entity/division
	Encourage the use of more durable products and discourage the purchase of single- use disposable items (nappies plastics cups etc) where a re-useable alternative exists through incentives and punitive measures (taxes, rebates etc).	The new waste entity/division
	Create and encourage a culture of reuse, with re-using and redistribution of items and goods such as demolition waste, books, household ornaments, crockery, toys, clothes etc.	The new waste entity/division
	Encourage the repair and or refurbishment of goods such as electronics, furniture or clothing that might otherwise be considered waste, through public awareness and possible incentive based initiatives.	The new waste entity/division



	Establish community recycling centres on all islands. These centres should serve as the environmentally sound collection and storage point for recyclable and hazardous wastes which for the outer islands will be shipped to Rarotonga for further consolidation and export.	The new waste entity/division
<b>2014-2015</b>	Develop viable, environmentally-sound recycling initiatives with private sector partners at commercial scale to ensure effective and efficient public private partnerships in developing the recycling industry in the Cook Islands.	The new waste entity/division
	Complete a public awareness campaign to convey accurate information about the relative risk of asbestos exposure and its minimisation in the Cook Islands.	The new waste entity/division
	Ensure that asbestos fibres contained in existing structures are stabilised to minimize further release of fibres to the atmosphere prior to eventual asbestos removal.	The new waste entity/division
	Implement and enforce minimum occupational health and safety standards for personal protective equipment and standardised national operating procedures for all workers involved in routine and emergency response asbestos handling.	The new waste entity/division
	Implement the Cook Islands National Implementation Plan for the Stockholm Convention.	National Environment Service; The new waste entity/division
	Implement the regional and national Hydrochlorofluorocarbons (HCFCs) Phase-out Management Plan (HPMP) and relevant national Ozone Depleting Substances (ODS) management strategies.	National Environment Service; The new waste entity/division
	Regulate stack emissions and residual ash disposal under the permitting system established under the Environment Act (2003) and in accordance with guidelines from relevant Conventions, if incineration is determined as a viable option of solid waste disposal for the Cook Islands.	The new waste entity/division
	Reward appropriate solid waste management behaviour at government ministries, businesses, schools and households. For example: <ul style="list-style-type: none"> <li>○ Conduct a solid waste management challenge whereby the waste from participating businesses are audited over a 6-month period, and businesses with best solid waste management performance (reduced waste, segregation, etc) is recognized and promoted via media.</li> <li>○ Undertake inter-school and inter-government competitions (including outer islands) over a 6-month period covering areas such as composting, selling of waste friendly products, strong community cleaning/ownership, and good solid waste practices.</li> </ul>	The new waste entity/division; National Environment Service

	Provide seminars on 'What you can do for a Clean Cook Islands' targeting businesses, uniformed organisations, NGOs etc. These presentations should be solution based so that the audience better understands what they can do to change their behaviour.	The new waste entity/division
	Designate local 'Clean Cook Islands' champions in different sectors such as sports, business, community, and church to work towards ensuring at least five good waste practises are mainstreamed and become integrated into daily or event driven practises they carry out.	The new waste entity/division
	Conduct a strong radio campaign in Cook Islands Maori targeted specifically toward the Outer islands to produce, create and partner in tailored infomercials.	The new waste entity/division
	Promote and raise the awareness of the environment champions working with the outer islands to ensure there is minimum solid waste in these islands – a form of 'leading by example' type awareness.	The new waste entity/division
	Establish partnerships with organizations across sectors to undertake an outer-island solid waste related initiative.	The new waste entity/division
	NES staff on official visits to the outer islands will schedule public meetings about solid waste and actions that communities can take to ensure clean outer islands.	National Environment Service
<b>2014-2015</b>	Establish a cross-cutting group tasked with ensuring regular communications. The group should: <ul style="list-style-type: none"> <li>a. Maintain central file storage/sharing (such as a Drop-box – a free web-based file storage and management service) to ensure availability and access to consistent information</li> <li>b. Hold monthly meetings with the host rotated among members of the group, to keep everyone abreast of happenings, plans, grievances and to help find solutions to problems</li> <li>c. Establish a lead member who can drive and motivate/inspire the group – they will need to dedicate at least 2 hours of work each month towards this group – driving the meetings and ensuring storage and cleaning of the electronic group filing system</li> </ul>	The new waste entity/division
	Segregation bins in communities, local recycling stations and in households such that homes have separate bins for collecting plastics and/or local bottle bins in communities.	The new waste entity/division
	Environmental tax on specific imported goods.	The new waste entity/division
	Determination of the success of the user charges for waste collection/disposal incorporated into electricity bills. Determination of the success of pre-paid garbage collection bags or stickers for household municipal waste collection. Bins versus	The new waste entity/division

	bags debated and decided on.	
	Implement refundable deposits (container deposit legislation) on glass bottles, plastics, aluminium cans, tin cans, electrical and electronic goods, tyres, cars, and lead acid batteries. This refundable deposit adds a value to the commodity and encourages the consumer to return the waste to designated locations, thus improving segregation and reducing collection costs. If a partial refund is issued (rather than a full refund), some revenue will also be generated to sustain the operation of the recycling programme for these goods. The exact level of deposits and refunds will be determined through a proper assessment of the costs (disposal, recycling, management, etc) and the socio-economic conditions.	The new waste entity/division
	Develop and implement environmental monitoring programs for solid waste disposal sites.	The new waste entity/division
	Establishment and enforcement of standards for emissions and releases and discharge standards for waste disposal sites.	The new waste entity/division
<b>2015 – Beyond</b>	Establish community recycling centres on all islands. These centres should serve as the environmentally sound collection and storage point for recyclables and hazardous wastes which will be shipped to Rarotonga for further consolidation and export.	The new waste entity/division
	Maintain a detailed inventory (from the time of import) of the quantity and type of other hazardous waste, both to track and which will form the basis of future management.	The new waste entity/division
	Construct environmentally sound hazardous waste storage facilities to cater for all of the Cook Islands.	The new waste entity/division
	Provision of enforcement training manuals and associated training to relevant officers on an ongoing basis.	The new waste entity/division

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## APPENDIX 1: Monitoring and Measuring Progress

### Key Performance Indicators

Measuring the progress of implementation of this National Solid Waste Management Strategy will be critical to ensuring that any challenges to implementation that may have been missed during the initial development are identified and addressed. During the discussion of each priority thematic area, individual performance indicators were provided. However, measuring the overall success of the Strategy will be based on the following key performance indicators:

- Amount of solid waste generated per capita
- Percentage of total solid waste land-filled
- Percentage of total solid waste diverted (includes reuse and recycle)
- Unit cost of solid waste management (per capita or per tonne of waste)
- Percentage of solid waste management budget subsidized by government sources
- Percentage of population aware of and engaged in good practices
- Quality of discharges from solid waste management facilities
- Number of complaints lodged by members of the public, and number of complaints resolved
- Completed monitoring and bio-monitoring reports

### Baseline

It is necessary to establish the baseline conditions for the above key performance indicators against which to evaluate future progress. However, at the development of this Strategy this information was not available. It is anticipated that this information will be gathered as the Strategy is implemented.

Key Performance Indicator	2013 Baseline
Amount of solid waste generated per capita	
Percentage of total solid waste land-filled	
Percentage of total solid waste diverted	
Unit cost of solid waste management	
Percentage of solid waste management budget subsidized by government	
Percentage of population aware of and engaged in good solid waste practices	
Quality of discharges from solid waste management facilities	

### Monitoring

It is recommended that the key performance indicators be monitored and reported on a yearly basis.

## APPENDIX 2: Stakeholders consulted

<b><u>NAME</u></b>	<b><u>VILLAGE/ ORGANISATION</u></b>
<b>WASTE MANAGEMENT COMMITTEE</b>	
John Wichman	Chair (Waste Management Committee)
Jolene Bosanquet	Te Ipukarea Society
John Carter	New Zealand High Commissioner
Imogen Ingram	NGO Island Sustainability Alliance (ISACI)
Maureen Hilyard	Independent Contractor
Kelvin Passfield	Te Ipukarea Society
Jamie Short	Ministry of Infrastructure Cook Islands (WATSAN)
Rerekura Teaurere	Office of the Prime Minister - Climate Change Division
<b>GOVERNMENT OF THE COOK ISLANDS</b>	
Joseph Bridger	National Environment Service
Noelene Brown	Ministry of Infrastructure Cook Islands/ Koutu Nui
Ngatokoroa Elikana	Ministry of Finance and Economic Management- Audit
Mura Herman	National Environment Service
Elizabeth Wright-Koteka	Office of the Prime Minister
Mac Mokoroa	Ministry of Infrastructure Cook Islands
Tai Nooapii	Ministry of Infrastructure Cook Islands
Donye Numa	Ministry of Infrastructure Cook Islands
Rimmel Poila	National Environment Service
Vavia Tangatataia	National Environment Service
Hon. Teariki Heather	Minister of Infrastructure and Planning/ Member of Parliament
Hon. Ata Herman	Ngatangiaa, Rarotonga - Member of Parliament
Hon. Selina Napa	Titikaveka, Rarotonga – Member of Parliament
Avaiki Aperau	Ruaau, Rarotonga
Dora Evans	Akaoo, Rarotonga
Taamo Heather	Arorangi, Rarotonga/ CIIC
Joanna Kempers	New Zealand High Commission
Cabinna Langsford	Te Ipukarea Society
Kosi Latu	Secretariat of the Pacific Regional Environment Programme
Mata Mataa	Ngatangiaa, Rarotonga
Shirley Mataroa	Inave, Rarotonga
Patricia Metzker	Te Ipukarea Society
Tavai Napa	Betela, Rarotonga
Charlie O'Connor	Muri, Rarotonga
Iro Rangi	Ruaau, Rarotonga
Nooroa Rangi	Ruaau, Rarotonga

Joe Raymond	Transpacific Waste Management
Tupe Short	Muri, Rarotonga - Koutu Nui
Tamara Suchodolsky	Te Ipukarea Society
Tamaka Tamanui	Ruaau, Rarotonga
Tina Tamanui	Ruaau, Rarotonga
Nelly Tapu	Arorangi, Rarotonga- CICC
Thierry Teiva Tapu	Arorangi, Rarotonga - CIIC
Oki Teokotai	Betela/Akooa, Rarotonga - CIIC
Anne Tierney	Muri Environment Council, , Rarotonga
Robert Tuoro	Ruaau, Rarotonga
Noametua Turepu	Matavera, Rarotonga
Theresa Vaevae	Muri, Rarotonga
Tino Vairera	ADB –Renewable Energy
Tina Wichman	Ruaau, Rarotonga
Rousa Xtace	Muri, Rarotonga

This list is not exhaustive of all persons and contributions to this strategy. To those who have not been included, we apologise and express our sincere appreciation.



## APPENDIX 3: Waste Management in the NSDP 2011-2015

### KEY OBJECTIVE

“Our delivery and ongoing environmentally sound management and maintenance of infrastructure will be improved significantly”

### **2. Improve our Facilities for Waste Management**

To complement our strategy for ecological sustainability through improved Waste Management, we will transform the way we use our waste facilities in Rarotonga and Aitutaki to Resource and Recovery Centers where waste is transformed so that it may be reused – for example, crushing glass to use for construction.

Additionally, we will implement the National Waste Strategy utilising the best options to address Waste Management in the remaining islands. Fundamental to our approach to transform the management of waste will be the use of public private partnerships.

### Targets

Volume of waste at landfills declined

### OUR GOAL: ENVIROMENT FOR LIVING

*‘A COOK ISLANDS WHERE WE SUSTAIN OUR ECOSYSTEMS AND USE OUR NATURAL RESOURCES EFFICIENTLY’*

### OUR KEY OBJECTIVES

1. The use of all our natural resources are managed well to ensure their sustainability.
2. Our scarce and degraded natural resources are effectively monitored and restored.
3. The pollution of air, water and land resources is managed so that impacts are minimised and community and ecosystem health is not adversely affected.
6. Taking care of our natural environment is ‘everybody’s business’.

Implement Waste Minimization

### ***Programmes and Provide appropriate Facilities and Incentives to Support these with the Purpose of Achieving Zero Waste***

Solid Waste Management is a critical issue which we will continue to address in 2011-2015. As a starting point, we will establish the necessary institutional arrangements to better manage our solid waste, including the privatisation of services. We will also develop and implement the appropriate policy, legislative and regulatory environment to ensure that all waste including hazardous and e-waste is minimised and better managed, while exploring the costs and benefits of other options of waste disposal with the purpose of achieving zero waste. Additionally, we will step up our efforts in education and

awareness, and provide incentives to encourage recycling. We will strengthen public private community partnerships in Waste Management.

10. Tonnage of waste going to landfill declined.

11. Tonnage of recycled materials increased.