

VANUATU

NATIONAL WASTE MANAGEMENT STRATEGY

AND ACTION PLAN

2010 – 2015

DRAFT

## ACKNOWLEDGEMENTS

Please include acknowledgements to JICA (and SPREP) for their financial and technical assistance to develop the strategy.

DRAFT

**FOREWORD**

DRAFT

# CONTENTS

- ACKNOWLEDGEMENTS ..... 2
- FOREWORD..... 1
- ACRNOYMS ..... 3
- EXECUTIVE SUMMARY ..... 4
- 1.0 NATIONAL WASTE MANAGEMENT STRATEGY ..... 5
  - 1.1 Overall Goal ..... 5
  - 1.2 Purpose..... 5
  - 1.3 Objectives ..... 5
  - 1.4 Strategy Development Process ..... 5
  - 1.5 Scope..... 6
  - 1.6 Time Frame..... 6
- 2.0 BACKGROUND ..... 7
  - 2.1 Introduction ..... 7
  - 2.2 Country Information ..... 7
  - 2.3 Strategic Context for Solid Waste Management ..... 10
  - 2.4 Current Situation of Waste Management in Vanuatu ..... 13
  - 2.5 Stakeholders ..... 18
- 3.0 THE WAY FORWARD ..... 19
  - 3.1 Guiding Principles ..... 19
  - 3.2 Strategic Elements ..... 19
  - 3.3 Measuring Progress ..... 26
- REFERENCES..... 27
- Appendix 1 – High-level Implementation Plan ..... 28
- Appendix 2 – NWMS Monitoring/Reporting Form ..... 29
- Appendix 3: Action Plan for Implementation of the NWMS ..... 30

## ACRNOYMS

ADB	Asian Development Bank
APTC	Australia Pacific Technical College
AusAID	Australian Agency for International Development
DEC	Department of Environment and Conservation
DGMWR	Department of Geology, Mines and Water Resources
DLQS	Department of Livestock and Quarantine Services
DMO	Disaster Management Office
EEZ	Exclusive Economic Zone
EU	European Union
GDP	Gross Domestic Product
GEF5	Global Environment Facility (Fifth cycle)
GIP	Government Investment Program
JICA	Japan International Cooperation Agency
km	Kilometre
MIPU	Ministry of Infrastructure and Public Utilities
MoH	Ministry of Health
MTSF	Medium Term Strategic Framework
NGO	Non Governmental Organization
NGOs	Non Governmental Organizations
NIP	National Implementation Plan
NWMS	National Waste Management Strategy
NZAID	New Zealand Agency for International Development
PAA	Priorities and Action Agenda
PHD	Public Health Department
PIFACC	Pacific Islands Framework for Action on Climate Change
PNG	Papua New Guinea
POPs	Persistent Organic Pollutants
PPC	Pacific Petroleum Company
PROC	People's Republic of China
PWD	Public Works Department
RS2010	Pacific Regional Solid Waste Management Strategy 2010-2015
SC	Stockholm Convention
SLO	State Law Office
SOPAC	South Pacific Applied Geoscience Commission
SOPAC	South Pacific Applied Geoscience Commission
SPREP	Secretariat of the Pacific Regional Environment Programme
SWM	Solid Waste Management
TOT	Training of Trainers
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
USP	University of the South Pacific
VIT	Vanuatu Institute of Technology
VNTC	Vanuatu National Training Council
VT	Vatu
WHO-WPRO	World Health Organization Western Pacific Regional Office

## EXECUTIVE SUMMARY

Vanuatu, like many of its Pacific island neighbours, is undergoing a period of social and economic development. This development leads to an increasingly affluent society, which also leads to increase in waste generation. If left unchecked, Vanuatu will not be able to keep up with waste generation and disposal, and any positive changes that have been made so far, will be overshadowed by the ill-effects of poor waste management. It is in this context, that a coherent waste management strategy must be formulated to ensure that Vanuatu's environment and public health are not adversely affected by the ongoing economic development.

This National Waste Management Strategy (NWMS) represents the implementation of the 2001 National Waste Policy, and is being developed in the face of several improvements that have already taken place such as the upgrade of the Bouffa dumpsite into a semi-aerobic landfill, the provision of partial waste collection services in the urban centres, and more recently, the development of draft waste management legislation.

This NWMS has seven objectives under five thematic areas as shown below. Within each thematic area, the current situation is reviewed to arrive at a number of strategic recommendations which are summarized in Appendix 1. These recommendations form the basis for further action as developed in the Action Plan (presented in Appendix 3).

<b>THEMATIC AREA</b>	<b>OBJECTIVES</b>
Policy & Legislation	To support solid waste management activities with practical, effective, enforceable legislation
Sustainable Financing	To make solid waste management systems and programmes financially self sustaining
Capacity Building	To develop skilled and trained people in Vanuatu to effectively manage solid waste management systems
Integrated Solid Waste management	To reduce the amount of waste generated and landfilled To disposed of waste that cannot be avoided, reused, recycled or composted in an environmentally sound manner To upgrade waste collection systems to be well-managed, efficient, and self-sustaining
National Coordination	To better coordinate national waste management activities and ensure that the NWMS is implemented, and periodically reviewed and updated to achieve the stated goal and purpose

The implementation of this Strategy and Action Plan will be coordinated through the Department of Environment and Conservation. It should be noted, however, that the Strategy calls for the establishment of a National Waste Coordinating Committee, which once established may be tasked with monitoring the implementation of the NWMS; a proposed format to simplify monitoring of the strategy has been proposed in Appendix 2.

# 1.0 NATIONAL WASTE MANAGEMENT STRATEGY

## 1.1 OVERALL GOAL

*[The Overall Goal refers to the expected long-term development impact of this strategy]*

An environmentally sustainable Vanuatu in which all types of generated wastes are collected, reused, recycled and treated by environmentally sound technologies suited to local conditions and waste going to landfill is minimized to the lowest possible amount.

## 1.2 PURPOSE

*[The Purpose refers to the immediate impact that will be achieved at the end of the strategy period]*

To minimize the generation of waste and waste going to landfill, while maximizing the recovery of resources and improving the management of residual waste using environmentally sound techniques.

## 1.3 OBJECTIVES

This NWMS has seven specific objectives:

1. To support solid waste management activities with practical, effective, enforceable legislation
2. To make solid waste management systems and programmes financially self sustaining
3. To develop skilled and trained people in Vanuatu to effectively manage solid waste management systems
4. To reduce the amount of waste generated and landfilled
5. To disposed of waste that cannot be avoided, reused, recycled or composted in an environmentally sound manner
6. To upgrade waste collection systems to be well-managed, efficient, and self-sustaining
7. To better coordinate national waste management activities and ensure that the National Waste Management Strategy is implemented and periodically reviewed and updated to achieve the stated goal and purpose

## 1.4 STRATEGY DEVELOPMENT PROCESS

The following steps were taken to prepare the NWMS with the assistance of the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Japan International Cooperation Agency (JICA):

- Holding of a 5-day consultation workshop in Port Vila from 16-20 March 2009. This was attended by approximately 25 stakeholders from government ministries and departments, private sector, NGOs, and community groups;
- Preparation of a draft of the strategy by SPREP based on information from the consultation workshop;
- One-day consultation workshop on 10 March 2010 to refine and finalize the strategy.

## **1.5 SCOPE**

The strategy covers solid waste from residential, commercial, institutional, and industrial sources. It also covers solid wastes from natural disasters, medical waste from hospitals and dispensaries, difficult waste such as used oil and scrap metal, quarantine waste, and septic and sewage sludge wastes.

The following wastes are not covered in this strategy:

- Liquid wastes (such as raw sewage and other wastewaters)
- Gaseous wastes
- Hazardous wastes (such as POPs), which will be addressed by the Stockholm Convention National Implementation Plan (NIP)

## **1.6 TIME FRAME**

This strategy covers the period 2010-2015 and its implementation will be coordinated by the Environment Department of the Government of Vanuatu. Monitoring and evaluation of the implementation of the Strategy will also be undertaken by the Environment Department using the format proposed in Appendix 2, and updated as necessary. A mid-term review of the strategy should be conducted in 2012 to ensure it is up-to-date and reflects any changes in conditions



## **2.0 BACKGROUND**

### **2.1 INTRODUCTION**

Waste management has been identified internationally and regionally as a strategic issue for sustainable development of Small Island Developing States (SIDS) for more than a decade through forums, such as the 1994 Barbados Programme of Action for the sustainable development of SIDS, the 1999 United Nations General Assembly Special Session on the Sustainable Development of SIDS, the 2005 Mauritius Strategy for the further implementation of the Barbados Programme of Action, the Pacific Plan for strengthening regional cooperation and integration, and the 2005-2009 SPREP Action Plan for Managing the Pacific Environment.

Nationally, the first signs of a coherent approach to waste management came with the endorsement of a Vanuatu Waste Management Policy in 2001. Unfortunately, the Policy was not operationalized by developing a strategy and action plan. Despite this fact, there have been several improvements made to solid waste management over the last decade such as the upgrade of the Bouffa dumpsite into a semi-aerobic landfill, the provision of partial waste collection services in the urban centres, and more recently, the development of draft waste management legislation.

Vanuatu is undergoing a period of social and economic development. This development leads to an increasingly affluent society, which also leads to increase in waste generation and changes in the type of wastes generated. If left unchecked, Vanuatu will be unable to keep up with waste generation and disposal, and any positive changes that have been made, will be overshadowed by the ill-effects of poor waste management. It is in this context, that a coherent waste management strategy, which advocates environmentally sound management of waste, must be formulated to ensure that Vanuatu's environment and public health are not adversely affected by the waste-related effects of ongoing economic development. Good waste management can also be important for building resilience, since resources that would normally be used to react to problems created or exacerbated by poor waste management can instead be used for dealing with other issues.

The development of this National Waste Management Strategy is a milestone in Vanuatu's sustainable development and its subsequent implementation will require the involvement and collaboration of government agencies, donors, and other development partners.

### **2.2 COUNTRY INFORMATION**

Vanuatu is a sovereign nation located in the Western Pacific between latitudes 13°S and 21°S, and longitudes 165°E and 170°E, approximately 1,750 km east of North Australia. This island archipelago is part of the Melanesia sub-group of Oceania islands, and consists of approximately 83 islands comprising a total area of about 12,190 square kilometres, with an exclusive economic zone (EEZ) of 710,000 square kilometres [SOPAC 2010].

The islands of Vanuatu are of raised limestone and/or volcanic origin, with six main island groups which comprise the country's six provinces. These provinces are listed in Table 1 along with their major constituent islands and main urban centres.

Table 1: Provinces of Vanuatu

Province	Provincial Centre (Island)	Constituent Islands
Malampa	Lakatoro (Malekula)	Malekula, Ambrym, Paama
Penama	Saratamata (Ambae)	Pentecost, Ambae, Maewo
Sanma	Luganville (Espiritu Santo)	Espiritu Santo, Malo
Shefa	Port Vila (Efate)	Shepherds group, Efate
Tafea	Lenekal (Tanna)	Tanna, Aniwa, Futuna, Erromango, Aneityum
Torba	Sola	Torres Islands, Banks Islands

### 2.2.1. POLITICS

Each Province is an autonomous unit with its own parliament elected by popular vote and known officially as a provincial council. They collect local taxes and make by-laws in local matters like the provincial budget or the provision of some basic services. They are headed by a chairman elected from among the members of the local parliaments and assisted by a secretary appointed by the Public Service Commission. Provinces are divided into municipalities (usually consisting of an individual island) headed by a council and a mayor elected from among the members of the council.

Vanuatu has a republican political system headed by a President who has primarily ceremonial powers. The President is elected for a five-year term by a two-thirds majority in the Electoral College, consisting of Members of Parliament and the presidents of Regional Councils. The Prime Minister, who is the head of the Government, is elected by a majority vote by a three-fourths quorum of Parliament. The Prime Minister appoints the Council of Ministers that should not number more than a quarter of the parliamentary representatives. The Prime Minister and the Council of Ministers constitute the Executive Government. The Parliament has 52 members who are elected every four years by popular vote. The legal system of the country is based on British common law [WHO WPRO, 2010]

### 2.2.2. OFFICIAL LANGUAGES

Vanuatu has three official languages: Bislama, English, and French. In addition, there are more than 100 different dialects spoken throughout the country.

### **2.2.3. DEMOGRAPHICS**

The population of Vanuatu in 2009 was 243,304, representing a growth rate of 2.8% a year since 1999, with the urban centres of Port Vila and Luganville increasing by 4.7% and 4.1% per year respectively. There are approximately 46,029 households with an average household size of 5.3 persons [Vanuatu Statistics Office, 2009].

### **2.2.4. ECONOMIC CONDITIONS**

The nominal gross domestic product (GDP) of Vanuatu for the 2006 fiscal year is reported as 45,901 Million Vatu, or 205,851 Vatu per capita. The economy is based primarily on subsistence or small-scale agriculture, which provides a living for 65% of the population. Agricultural exports account for 80% of exports and about 14% of GDP and include copra, coconut oil, cocoa, and kava. Fishing, offshore financial services and tourism are other mainstays of the economy. A small light industry sector caters to the local market. Economic development is hindered by dependence on relatively few commodity exports, vulnerability to natural disasters and the long distances from main markets [WHO WPRO, 2010].

As part of plans to improve the economic status of the country, the Government has introduced the Priority Action Agenda (PAA), a long-term investment plan to expand the economy and improve the living standards of the people of Vanuatu. The agenda relies mainly on foreign aid for investment, with Australia, China, the European Union, Japan, Malaysia and New Zealand being the main donors [WHO WPRO, 2010].

### **2.2.5. WEATHER**

The climate in Vanuatu is sub-tropical with fairly uniform temperatures year round and two defined seasons: the hot or wet season (November to April), and the cool or dry season (May to October). The warmest month is February, and the coolest is August. Temperatures can vary from 24°C to 30°C with a daily average of 26°C in the hot season [Vanuatu Meteorological Services, 2010].

Rainfall is heaviest in the hot season, generally in March, while the driest month is in August. On the island of Efate, annual rainfall on the windward side is between 2400mm – 3000 mm per year, with half that amount recorded on the leeward side [Vanuatu Meteorological Services, 2010].

### **2.2.6. NATURAL HAZARDS**

#### Cyclones

The hot or wet season in Vanuatu is also the cyclone season. Vanuatu is located on a route occasionally traversed by cyclones, which by definition are associated with winds of at least 34

knots (62 km/hr). The land and sea area of Vanuatu receives about 2-3 cyclones in a cyclone season, and the greatest frequency is in January and February. On average, Vanuatu and its marginal seas is a common route to some 20 to 30 cyclones per decade, with 3 to 5 causing severe damage [Vanuatu Meteorological Services, 2010].

### Volcanic Eruptions

There is an ever-present danger of a major volcanic eruption from one or more of Vanuatu's active volcanoes. There are active volcanoes on several islands including Ambae, Ambrym, Lopevi, Tanna, Gaua, and Vanua Lava, in addition to underwater volcanoes<sup>1</sup>.

### Earthquakes and Tsunamis

Vanuatu also lies on the Pacific Plate with a subduction zone to its west, and often experiences a number of earthquakes of varying magnitudes. For example, in 2009, Vanuatu experienced six earthquakes of magnitude 6.5 or greater. Vanuatu may also experience tsunamis as a result of earthquakes in other parts of the Pacific region and the world<sup>2</sup>.

## **2.3 STRATEGIC CONTEXT FOR SOLID WASTE MANAGEMENT**

### **2.3.1. PRIORITIES AND ACTION AGENDA 2006-2015**

The "Priorities and Action Agenda 2006-2015: An Educated, Healthy and Wealthy Vanuatu" (PAA) is the national development plan for Vanuatu. The PAA recognizes that "the safe disposal of solid waste is a significant problem for many communities." It further identifies the assessment of waste disposal issues as a moderately high priority issue for many islands", and recommends that a solid waste disposal study be conducted. Given the range of issues involved in environmentally sound solid waste management, more appropriate consideration must be given to the solid waste management needs in Vanuatu, and this National Waste Management Strategy will be vehicle for addressing those needs.

### **2.3.2. MEDIUM-TERM STRATEGIC FRAMEWORK**

The Medium-Term Strategic Framework (MTSF) is the mechanism for implementing the PAA. The MTSF provides a framework for setting development priorities, linking the Government's strategic priorities to Corporate Plans, Business Plans, the National and Ministerial Budgets, and the Government Investment Program (GIP). It should also ensure that development programs and expenditure are monitored, and that development activities and development partner support are well coordinated.

---

<sup>1</sup> For more information visit *Vanuatu Geohazards Observatory* online at <<http://www.geohazards.gov.vu>>

<sup>2</sup> For more information visit the *US Geological Survey Earthquake Hazards Program* online at <<http://earthquake.usgs.gov/>>

Crucially, the MTSF recommends an approach for each Ministry/sector to develop, or carry forward, a small number of high priority programs (1 to 4 each year) using a Program Proposal Form, in preparation for the Budget and the update of the Government Investment Program.

### **2.3.3. VANUATU WASTE MANAGEMENT POLICY 2001**

Vanuatu has a Waste Minimization and Management Policy, whose goal is to prevent, protect, and control the adverse effects of waste on human health, environment, and the economy of the country. The objectives of the policy are:

- To minimize and ensure proper waste management through methods accepted by the Ni-Vanuatu that: protect the environment by reducing adverse impacts, promote human health, and facilitate socio-economic developments.
- To increase public knowledge and understanding on waste minimization and management issues to ensure their active participation in programmes and initiatives developed to achieve the goal.

The Policy calls for the development of a National Waste Management Strategy and a Hazardous Waste Management Strategy by 2001, however, the Policy was never operationalized, and many of the recommendations were not realized. The recommendations covered several themes such as education and awareness, waste management systems, national coordination for waste management, training, and legislation.

### **2.3.4. STOCKHOLM CONVENTION**

The Stockholm Convention on Persistent Organic Pollutants (POPs) is a global treaty “to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, and accumulate in the fatty tissue of humans and wildlife.” It requires Parties to take measures to eliminate or reduce the release of 12 different POPs into the environment. Vanuatu ratified the Convention on 16 September 2005 [Stockholm Convention Secretariat, 2009].

Article 5 of the Convention requires Vanuatu to implement measures to reduce and eliminate releases of dioxins and furans from unintentional sources (uPOPs), which are generally from the open burning of solid waste. Vanuatu should also promote the use of best available techniques (BAT) and best environmental practices (BEP), for sources of uPOPs, specifically waste incinerators and open burning of waste on landfills and dumpsites<sup>3</sup>. BAT and BEP include using low-waste technology, promoting recovery and recycling of waste, and considering alternatives to incineration.

---

<sup>3</sup> Consult the text of the Stockholm Convention for complete information on Vanuatu's obligations

### **2.3.5. NOUMEA CONVENTION**

Vanuatu ratified the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (Noumea Convention), which prescribes that Parties “shall take all appropriate measures to prevent, reduce and control pollution in the [South Pacific region] caused by dumping from vessels, aircraft, or man-made structures at sea, including the effective application of the relevant internationally recognized rules and procedures relating to the control of dumping of wastes and other matter.”

The development and subsequent implementation of this solid waste management plan can be considered to be an “appropriate measure to prevent, reduce and control pollution” under the Noumea convention.

### **2.3.6. THE PACIFIC REGIONAL SOLID WASTE MANAGEMENT STRATEGY**

The Pacific Regional Solid Waste Management Strategy 2010-2015 (RS2010) is the region’s guiding document for solid waste management. The implementation of this regional strategy is coordinated by SPREP, and it prescribes actions for SPREP as well as SPREP member countries and territories. In particular it addresses nine priority areas: Sustainable Financing; Integrated Solid Waste Management; Legislation; Awareness, Communication and Education; Capacity Building; Environmental Monitoring; Policy, Planning and Performance; Solid Waste Industry; and Medical Waste.

As a member of SPREP, Vanuatu was consulted during the development of RS2010, and committed itself to the implementation of the strategy. Vanuatu also identified three high priority issues as being (1) Integrated Solid Waste Management, (2) Legislation, and (3) Awareness, Communication and Education. The actions identified in the Regional Strategy should be closely aligned with the actions identified in this Vanuatu National Waste Management Strategy.

### **2.3.7. PACIFIC ISLANDS FRAMEWORK FOR ACTION ON CLIMATE CHANGE 2006-2015**

In 2005, the Pacific Islands Forum Leaders endorsed the Pacific Islands Framework for Action on Climate Change (PIFACC) whose goal is to ensure that Pacific island peoples and communities build their capacity to be resilient to the risks and impacts of climate change (CC). Two of the key expected outcomes of the PIFACC are to implement adaptation measures to the adverse effects of climate change and to contribute to global greenhouse gas reduction.

Better waste management, achieved through the implementation of this National Waste Management Strategy can contribute to adaptation to CC, since it can lead to reduced discharge of leachate and the lower levels of pollution from litter, poorly managed dumpsites, etc. These positive effects reduce the manmade stresses on the ecosystems such as reefs, thus allowing them to better cope with CC impacts. In terms of mitigation of greenhouse gases such as methane,

better waste disposal methods such as semi-aerobic landfills and home composting can reduce the production of methane.

## 2.4 CURRENT SITUATION OF WASTE MANAGEMENT IN VANUATU

### 2.4.1. INSTITUTIONAL ARRANGEMENTS

The lead agency for solid waste management issues in the national Government is the Department of Environment and Conservation (DEC), which was upgraded from an Environment Unit in 2009. Within the DEC, the waste management functions are carried out by the Waste Management and Pollution Control Officer. Roles and responsibilities for the various waste categories are clearly defined as shown in Table 2.

Table 2: Responsibilities for Waste Management

Responsibility	Type of Waste				
	Solid	Sewage/ wastewater	Quarantine	Hazardous	Medical
Policy development	DEC		DLQS	DEC	PHD
Regulation	DEC		DLQS	DEC	PHD
Monitoring, enforcement	DEC	EHU	DLQS	DEC	PHD
Operation (e.g., collection & disposal)	Municipal Councils* Provincial Councils*	Rural: DGMWR Urban: UNELCO Sub-urban: PWD	DLQS	DEC	PHD

**Notes:**

\* in designated areas

DEC: Department of Environment and Conservation

DGMWR: Department of Geology, Mines, and Water Resources

DLQS: Department of Livestock and Quarantine Services

PHD: Public Health Department

PWD: Public Works Department

### 2.4.2. WASTE GENERATION AND COMPOSITION

A solid waste generation and composition study was conducted in Port Vila Municipality in 2007 and the results are shown in the chart below. No other waste characterization has been done for the other municipalities.

There are approximately equal amounts of kitchen waste (21.9%), paper (15.6%), plastics (18.6%), and glass (18.3%). Metals (10.1%) and yard waste (7.4%) make up smaller quantities. This data suggests that a strong recycling program focusing on the traditional recyclables (paper, plastics, and glass) would go a long way to reducing the amount of waste ending up at the landfill.

Encouraging the separation of kitchen and yard waste at the household level to feed animals or for composting, would further reduce waste to landfill.

There is very little information on quantities of septic sludge disposed. In terms of oils and lubricants, one of the largest importers is Pacific Petroleum Company (PPC), who exports about 100 m<sup>3</sup> per year of waste oil generated from their clients. There are also other importers such as BP Oil and other generators of waste oil such as local mechanic shops; however, no data was available from these sources. It is reported that BP Oil operations in the South West Pacific will be bought by PPC in a deal to be finalized in the first quarter of 2010 [Islands Business, 2010].

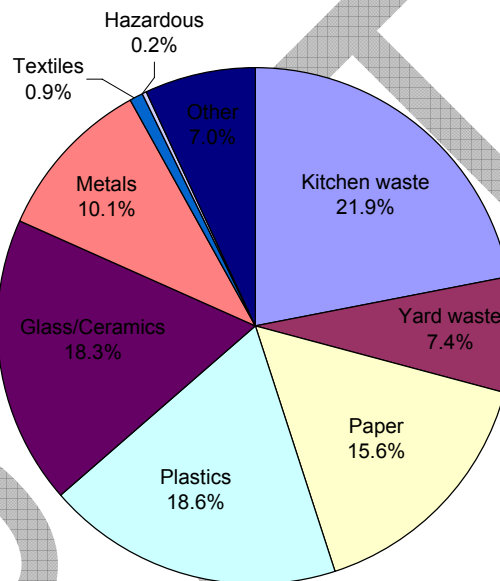


Figure 1: Waste Composition in Port Vila Municipality

### 2.4.3. WASTE COLLECTION

Solid waste collection services are usually provided in the Provincial Centres where the population density tends to be higher than in rural areas. In Port Vila Municipality, waste collection is scheduled for three times per week using a combination of compactor vehicles and tipper trucks. A similar situation exists in Luganville Municipality; however in the other provincial centres smaller pickup trucks are commonly used.

In general, the waste collection service can be unreliable, and inefficient, and the collection routes have not been optimized using techniques such as time and motion studies.

The following characteristics are noted with respect to the collection service for other waste types:



- Collection and transportation of septic sludge to the dumping area is done by the private sector using vacuum pump trucks.
- Transportation of quarantine wastes in Port Vila is managed by the Department of Livestock and Quarantine Services (DLQS) using pickup trucks. The quarantine waste is transported directly from the Port and Airport to an incinerator sited on the compound of DLQS.
- Medical wastes are managed on site at the Port Vila Central Hospital. Segregation of waste is done in the hospital and then this is transported to a storage site on the hospital grounds, where it may be mixed again with general waste. This storage site is unsightly and malodorous, and a breeding site for flies. When operating funds are low, the waste is stored for a period before being transported to the dumpsite where it is burnt or buried.

#### 2.4.4. WASTE DISPOSAL

The predominant method of solid waste disposal in Vanuatu is by dumpsite. The landfill in Port Vila (Bouffa) is the exception as it was rehabilitated with the assistance of JICA to operate on semi-aerobic landfill principles.



Figure 2: Operations at Bouffa Landfill in Port Vila

Sewage sludge from septic tanks is collected by private trucks and disposed of at the Bouffa landfill site in an open pit. In Port Vila, there is a hospital sewage treatment plant which is privately operated by UNELCO – a subsidiary of Lyonnaise des Eau.

The disposal of medical waste at the Port Vila Central Hospital is by incineration. There are two incinerators located on the hospital grounds and residual ash is taken to the Bouffa landfill site for disposal. If the incinerator is not working due to technical or other problems, the medical waste is

often taken to the landfill where it is burnt in an open pit. In other Provincial Centres, where there is no incinerator, or where the incinerator is not functional, medical waste is openly burnt and buried.



Figure 3: (a), (b) Incinerators located at the Port Vila Central Hospital; (c) medical waste storage area

#### 2.4.5. WASTE REUSE AND RECYCLING

Recycling activities are done by the private sector only. Recycle Corp Vanuatu is the only private recycler who currently engages in the recycling of metals (ferrous metal, copper, brass, aluminium cans), and lead-acid batteries. Recycle Corp buys these materials from the general public (see Table 3), then processes and packs the materials for export to recycling companies.

Table 3: Recyclable material prices, March 2010

Item	Value (Vatu)
Steel	2,000/ton
Aluminium cans	30/kg
Copper	100/kg
Brass	50/kg
Lead acid batteries	20 each

There are two brewers/bottling companies in Vanuatu, Vanuatu Brewing Limited and Vanuatu Beverage, and both companies often reuse glass bottles as part of their normal operations. A deposit is paid on each bottle when purchased from wholesale and retail locations and this is refunded when the bottle is returned for reuse.

Wan Smolbag, a Port Vila-based NGO that promotes awareness in certain areas, is also engaged in a community initiative to collect plastics, cans, scrap steel, packaging waste and diapers from seven communities in Port Vila. The recyclable material collected is transported to the recycler

(Recycle Corp) and the remainder goes to the Bouffa Landfill. This is a good initiative, however, throughout the country, the integrated waste management approach at the community level, which involves recycling, reuse and waste reduction seems to be absent.

#### **2.4.6. EDUCATION AND AWARENESS**

There are two main stakeholders who conduct waste management and awareness activities, namely Live & Learn Environmental Education (Live & Learn), and Wan Smolbag.

Live & Learn in Vanuatu was established in 2001 and is part of a regional network with offices in Solomon Islands, Fiji, PNG, Cambodia, and the Maldives. The aim of Live & Learn is to reduce poverty and advance sustainable development through education and learning. In their 2008-2013 Strategic Plan for Vanuatu, Live & Learn has named waste management and minimization as one of seven focal areas. The specific activities to be undertaken include establishing income-generating waste management projects, and developing a household waste management and minimization program for Port Vila and Luganville.

Wan Smolbag is a Vanuatu-based NGO that uses structured workshops facilitated by actors, and drama to inform, raise awareness and encourage public discussion on a range of issues including environment, health, lifestyle, and governance. Many of their outputs include plays, films, teaching resources, radio programmes and more. As mentioned under the Waste Reuse and Recycling section, Wan Smolbag also provides a waste collection service for specific types of waste in several communities.

Despite the involvement of these two NGOs, it is believed that the education and awareness of environmental and health impacts of poor waste management at the rural village level is lacking.

#### **2.4.7. FINANCING**

Municipal and Provincial Councils are responsible for waste collection and disposal in designated areas. Some Councils obtain the money for these operations through a waste management fee included in the Property Tax. This is the case in Port Vila, where the fee is about VT 13,000/year per property (as at March 2010). The overall budget for waste management in Port Vila for 2009 was reported to be VT 49,095,500. Sixty-eight percent (68%) of the total budget was spent on collection and 32 percent (32%) on disposal.

In the past, some communities operated their own waste collection service for a fee of about VT 500 per month for each household; however this system broke down due to mismanagement.

## 2.5 STAKEHOLDERS

There are many waste management stakeholders that should be consulted when developing and implementing solid waste management activities and initiatives. The table below provides an indicative list of the key Stakeholders and should be updated as additional stakeholders are identified.

Table 4: Major Stakeholders for Waste Management in Vanuatu

Major Stakeholders	Areas*	Level of Participation	Reasons for level of participation
Department of Environment and Conservation	H, L, M, S	High	National lead agency for waste management
Environmental Health Unit	H, L, M, S	High	Sanitation, inspections, technical advice on sanitation
Ministry of Health	H	High	Planning, regulation and management of medical waste
Department of Livestock and Quarantine Services (DLQS)	Q, H	High	Planning, regulation and management of quarantine waste
Ministry of Lands and Natural Resources, Geology & Mines	L	High	Rural sanitation
Public Works Department	L	High	Sub-urban sanitation
Municipal Councils	S	High	Waste management in designated areas
Provincial Councils	S	High	Waste management in designated areas
Pacific Petroleum Company	H	High	Major importer of oil
BP Oil	H	High	Major importer of oil
Ports Authority	H, Q	Medium	
Wan Smolbag	Education	High	
Live and Learn	Education	High	
Recycle Corp Vanuatu	H, S	High	Private recycler for scrap metal, lead-acid batteries
Vacuum Truck owners	L	High	
Ministry of Education	Education	High	
Chamber of Commerce	Education	Medium	Educational programs in rural areas
Churches	S	High	Potential involvement in rural areas
Schools	S	High	Potential involvement in rural areas
UNELCO	L	High	Private operators of Hospital sewage treatment plant

\* LEGEND: H = Hazardous Waste  
 L = Liquid Waste (including septic sludge)  
 M = Medical Waste  
 Q = Quarantine Waste  
 S = Solid Waste

## 3.0 THE WAY FORWARD

### 3.1 GUIDING PRINCIPLES

This National Waste Management Strategy is built on several key principles, which will be used to drive the actions that will transform current solid waste management practices.

#### **Polluter-pays Principle**

*Those responsible for causing pollution or generating waste should pay the cost for dealing with the pollution, or managing the solid waste in order to maintain ecological health and diversity. This is an equitable basis for cost recovery and if properly applied, it encourages responsible waste management behaviour.*

#### **Precautionary Principle**

*Lack of scientific data/information certainty should not be used as a reason for not acting to prevent serious or irreversible environmental damage or degradation.*

#### **Consultation Principle**

*All levels of Government should consult and work with people and organizations throughout the development and implementation of waste management strategies and action plans.*

#### **Waste Hierarchy**

The Waste Hierarchy is a strategic tool which prioritizes actions for SWM. The general hierarchical model is a 4R model consisting of Refuse, Reduce, Reuse, and Recycle – listed in order of priority.

*Refuse:* avoid generating waste in the first place

*Reduce:* reduce waste that must be generated and that goes to the landfill (e.g., composting)

*Reuse:* repair goods that can be repaired, or find alternative uses for wastes

*Recycle:* return wastes with recoverable value for re-processing

### 3.2 STRATEGIC ELEMENTS

During consultations with key stakeholders, five priority areas for waste management were identified, namely: policy/legislation, sustainable financing, capacity building, integrated solid waste management, and national coordination. Each area is examined in the following sections by looking at the current situation (“Where are we now?”), setting the strategic objectives (“Where do we want to be?”) and finally making appropriate recommendations, which in turn form the basis for detailed actions identified in the Action Plan in Appendix 3. The recommendations are numbered continuously through each of the priority areas.

### 3.2.1. POLICY AND LEGISLATION

**OBJECTIVE:** TO SUPPORT SOLID WASTE MANAGEMENT ACTIVITIES WITH PRACTICAL, EFFECTIVE, AND ENFORCEABLE LEGISLATION

#### ***Where are we now?***

- The following draft laws and regulations addressing waste management and pollution control issues have been developed in 2010 with the assistance of SPREP:
  - Waste Operation and Services Bill
  - Draft Environmental Management and Conservation (Pollution Control) Regulations 2010
  - Draft Environmental Management and Conservation (Waste and Litter Control) Regulations 2010
- These drafts clearly address the roles and responsibilities for different agencies and the general public, as well as identify appropriate fines and penalties. However, in order to be effective, a clear path needs to be set to ensure that these laws and regulations are enacted and enforced after an appropriate period of awareness.
- There is a lack of strategic planning in the form of a national policy and strategy covering medical waste. This lack of strategic planning hinders development with the result that the medical waste
- As indicated in Chapter 2, Vanuatu is prone to several disasters such as earthquakes, tsunamis, and cyclones, which can give rise to significant amounts of disaster waste. However, there is no policy or standard procedure in place to manage this kind of waste.

#### ***Where do we want to be?***

- Appropriate legislation for waste management enacted and enforced
- Appropriate policies in place for medical waste management
- Appropriate policy/procedure in place for managing disaster waste

#### ***Recommendations***

1. Enact the draft laws and regulations
2. Strengthen capacity for enforcement of waste management laws
3. Develop a policy for medical waste management
4. Develop a policy and procedures for managing disaster waste

### 3.2.2. SUSTAINABLE FINANCING

**OBJECTIVE:** TO MAKE SOLID WASTE MANAGEMENT SYSTEMS AND PROGRAMMES FINANCIALLY SELF SUSTAINING

#### ***Where are we now?***

- There is very limited sustainable financing of waste management and pollution control in Vanuatu.
- No funds are allocated from the national budget for waste management. Funding at the municipal and provincial levels is usually obtained through property taxes and user pay charges such as in the case of Port Vila. However, in all cases, the resources allocated for waste management are insufficient and there is still a strong reliance on donors for waste management projects.

#### ***Where do we want to be?***

- In the short to medium term, maximize donor financing and partnership to improve waste management, while working towards a system of 100 percent sustainable financing for waste management and pollution control from internal sources over the long-term.

#### ***Recommendations***

5. Mainstream waste management and pollution control into the medium term strategic framework MTSF/PAA. UNDP's Environment Unit is currently undertaking a 5 year (2008-2012) project that will involve mainstreaming environment sustainability by developing national capacities to design and implement environment policies, legislative, and management frameworks.
6. Identify investment opportunities from bilateral, multi-lateral, international agencies for waste management and pollution control
7. Establish multi-sectoral partnerships (NGOs, local business community) in Vanuatu

### 3.2.3. CAPACITY BUILDING FOR WASTE MANAGEMENT, POLLUTION CONTROL, AND CLEAN PRODUCTION

**OBJECTIVE:** TO DEVELOP SKILLED AND TRAINED PEOPLE IN VANUATU TO EFFECTIVELY MANAGE SOLID WASTE MANAGEMENT SYSTEMS

#### ***Where are we now?***

- There is limited human capacity in the municipal, provincial, and national governments for waste management and pollution control. Positive actions have been taken with the upgrading of the Environment Unit to the Department of Environment and Conservation and with the addition of a position for Waste Management and Pollution Control.
- At the institutional level, capacity to undertake project/program development and implementation, fundraising, partnerships and collaboration, evaluation, policy change, etc., is limited and needs to be enhanced.
- There is no structured program of financial assistance to build human and institutional capacity in waste management.
- Industrial activity in Vanuatu is growing yearly, however there are no guidelines and requirements to use clean production techniques which minimize waste generation, and there is limited knowledge on these techniques within Vanuatu.

#### ***Where do we want to be?***

- Improved institutional capacity in the lead waste management entities (e.g., DEC, Port Vila Municipality, etc) for waste management and pollution control
- Improved capacity for individuals on waste management and pollution control, and clean production

#### ***Recommendations***

8. Develop institutional capacity for waste management in the lead waste management entities
9. Develop and deliver training of trainers (TOT) program for practitioners of waste management and pollution control



### 3.2.4. INTEGRATED SOLID WASTE MANAGEMENT

- OBJECTIVES:** TO REDUCE THE AMOUNT OF WASTE GENERATED AND LANDFILLED  
TO DISPOSE OF WASTE THAT CANNOT BE AVOIDED, REUSED, RECYCLED OR COMPOSTED, IN AN ENVIRONMENTALLY SOUND MANNER  
TO UPGRADE WASTE COLLECTION SYSTEMS TO BE WELL-MANAGED, EFFICIENT AND SELF SUSTAINING

#### ***Where are we now?***

- There is a lack of incentives that encourage the practice of waste minimization, reuse, and recycling. The development of container deposit legislation (CDL) has begun and is being funded by UNDP. If implemented correctly, the CDL scheme will transform some wastes (e.g. aluminium and tin cans, plastic bottles, etc) into resources, and lead to the sustainable management of those wastes, while strengthening the private sector capacity for waste management. Priority should therefore be given to supporting this CDL scheme.
- There is a lack of incentives/mechanisms to control or regulate the importation and production of items which become problematic wastes, and to manage the disposal of those wastes. A good example of this is the plastic shopping bag, which has been the focus of initiatives in several Pacific island countries such as PNG, Samoa and more recently Fiji. There are also private sector initiatives promoting the use of reusable bags (e.g. Vanuatu Independent), which suggest that there may be support for developing national initiative to address plastic bag use.
- As noted in the waste characterization study for Port Vila, there are significant amounts of recyclables in the waste stream (paper-15.6%, plastics-18.6%), glass- 18.3%, and metals-10.1%). These materials are innocuous and inoffensive. The lifetime of the landfill could be significantly extended if these materials could be properly stockpiled until formal recycling programs can be implemented (provided land space is available, and provided the material is stored properly and does not become a nuisance – for example by encouraging mosquito breeding).
- A significant portion of the waste is also organic (yard waste-7.4%, and kitchen waste- 21.9%). If segregation of this waste at home can be encouraged (e.g. for composting), this will also reduce waste to landfill, and also reduce some of the negative impacts of leachate and landfill gas).
- Some private sector reuse and recycling activities exist such as the reuse of glass bottles by local breweries and bottling companies, and recycling of cans and other materials by Recycle Corp Vanuatu. These programs reduce the quantity of waste disposed, thus also reducing collection costs. Significant benefits could therefore be realized if these activities are strengthened to promote further separation.
- Inefficient collection systems exist, and they cover just a few of the main urban centres in some provinces.

- A semi-aerobic landfill is operated in Port Vila Municipality; however dumpsites are used in other municipalities and provinces.
- An incinerator for quarantine waste is installed and operated by DLQS, but there is a lack of environmentally sound facilities for disposal of medical waste, and sewage and septic sludge.
- An ADB project has recently been approved, The Port Vila Urban Development Project, which includes a component to develop a detailed drainage and sanitation master plan for Port Vila. The project is being executed by the Ministry of Infrastructure and Public Utilities, and it will be a good opportunity to identify strategic linkages and activities between the sanitation master plan and this waste management plan.
- There are several dumpsites which have been closed over time, however there is no central mapping and environmental monitoring of these sites and other contaminated sites.

### ***Where do we want to be?***

- Better awareness of waste minimization techniques among all Ni-Vanuatu.
- Incentives created to encourage waste minimization, reuse and recycling, and to strengthen existing activities.
- Mechanisms established and strengthened to control importation and production of problematic items.
- Effective and appropriate collection service implemented for main urban centres
- Environmentally sound and technologically-appropriate disposal facilities for solid waste, medical waste, septic sludge and residues.
- Environmental contamination from closed dumpsites and other contaminated sites assessed and monitored.

### ***Recommendations***

10. Improve the awareness of waste minimization techniques by working together with key stakeholders
11. Implement systems that encourage waste minimization, reuse and recycling of key waste items to reduce the amount of waste going to the landfills and dumpsites
12. Implement incentives and mechanisms to control/regulate importation and production of items which become problematic wastes
13. Develop appropriate collection services for the provincial centres
14. Develop environmentally sound facilities for disposal of solid waste and medical waste.
15. Develop an environmental monitoring program for closed dumpsites, existing dumpsites and landfills, and other contaminated sites.

### 3.2.5. NATIONAL COORDINATION

**OBJECTIVE:** TO BETTER COORDINATE NATIONAL WASTE MANAGEMENT ACTIVITIES AND ENSURE THAT THE NWMS IS IMPLEMENTED AND PERIODICALLY REVIEWED AND UPDATED TO ACHIEVE THE STATED GOAL AND PURPOSE

#### ***Where are we now?***

- The Environment Unit within the Ministry of Lands and Natural Resources was upgraded to the Department of Environment and Conservation (DEC) in 2009, and the position of Waste Management and Pollution Control Officer (WMPCO) was created and will be filled on a full-time basis.
- No formal mechanism is in place to facilitate interagency cooperation on waste issues (solid waste, medical waste, quarantine waste, wastewater/septic sludge). The 2001 Vanuatu Waste Policy required the establishment of a National Waste Coordinating Committee, however this was not done. It is advisable to establish such a Committee given the many stakeholders and benefits to be gained from better coordination of waste management activities in Vanuatu.
- There is some collaboration between NGOs and agencies for waste management education, but there is lack of a coordinated approach to maximise resources and avoid duplication.
- Environment and waste management are not high priorities with the rest of Government.
- At the rural subsistence community level, the integrated approach to waste management which involves reuse, recycling, composting, and waste reduction seems to be absent, possibly due to the general absence of central and provincial government from these communities. In these cases, it is crucial to involve school networks and/or churches for better waste management.

#### ***Where do we want to be?***

- Stronger cooperation and collaboration among the responsible agencies for the management of the different types of wastes, and between agencies and NGOs for education and awareness.
- Waste management seen as a high priority by all levels of government.
- Increase the budgetary allocation to DEC for national waste management activities
- Better involvement of rural subsistence communities in waste management

#### ***Recommendations***

16. Establish a National Waste Management Coordinating Committee to facilitate cooperation among agencies with respect to the management of the different types of wastes

### **3.3 MEASURING PROGRESS**

Measuring the implementation success of this strategy should be based on national key performance indicators such as the amount of waste generated, amount of waste diverted from landfill (reused, recycled, or composted), number of dumpsites and landfills, level of illegal dumping and littering, number of people qualified in certain areas of waste management, etc. However, there is a lack of baseline data in many of these indicative areas, and very few mechanisms to enable this information to be collected. One of the goals of this strategy is to change this situation and implement these improvements. Until this can be done, a yearly monitoring form (Appendix 2) will be used by relevant lead agencies to report on any initiatives undertaken in Vanuatu.

DRAFT

## REFERENCES

- Islands Business. (2010). *BP Oil South West Pacific now has a new buyer*. Retrieved 7 March 2010 from <[http://www.islandsbusiness.com/news/index\\_dynamic/containerNameToReplace=MiddleMiddle/focusModuleID=130/focusContentID=17410/tableName=mediaRelease/overrideSkinName=newsArticle-full.tpl](http://www.islandsbusiness.com/news/index_dynamic/containerNameToReplace=MiddleMiddle/focusModuleID=130/focusContentID=17410/tableName=mediaRelease/overrideSkinName=newsArticle-full.tpl)>
- Stockholm Convention Secretariat (2009), Retrieved 7 October 2009 from <<http://chm.pops.int/Convention/tabid/54/language/en-US/Default.aspx>>
- WHO WPRO. (2010). *Vanuatu Country Context*. Retrieved 7 March 2010 from <<http://www.wpro.who.int/countries/2009/van/>>
- Vanuatu National Statistics Office. (2009). *2009 Census Household Listing Counts*. Retrieved 7 March 2010 from <[http://www.spc.int/prism/country/vu/stats/P\\_releases/Adhoc/HH%20listing%20count%20release%20-%2020071009.pdf](http://www.spc.int/prism/country/vu/stats/P_releases/Adhoc/HH%20listing%20count%20release%20-%2020071009.pdf)>
- Vanuatu Meteorological Services. (2010). *Climate of Vanuatu..* Retrieved 8 March 2010 from <<http://www.meteo.gov.vu/VanuatuClimate/tabid/196/Default.aspx>>

DRAFT

## Appendix 1 – High-level Implementation Plan

	Action	Lead Agency	Time-frame (for completion)	Indicative Budget for the timeframe (VT)
1	Enact the draft laws and regulations	DEC	2010	30,000
2	Strengthen capacity for enforcement of waste management laws	DEC	2011-2015	1,500,000
3	Develop a policy for medical waste	MoH	2010-2011	200,000
4	Develop a policy and procedures for managing disaster wastes	DEC	2011	200,000
5	Mainstream waste management and pollution control into the medium term strategic framework MTSF/PAA	DEC	2010-2015	?
6	Identify investment opportunities from bilateral, multi-lateral, and international agencies for waste management and pollution control	DEC	2010-2015	?
7	Establish multi-sectoral partnerships in Vanuatu (NGOs, local business community)	DEC	2010-2014	40,000
8	Develop institutional capacity for waste management at the municipal, provincial, and national levels	DEC	2012-2015	1,500,000
9	Develop and deliver training of trainers (TOT) program on waste management, pollution control, and clean production	DEC/VNTC	2011-2013	1,540,000
10	Improve awareness of waste minimization techniques by working together with key stakeholders	DEC	2011-2014	40,000
11	Implement systems that encourage waste minimization, reuse and recycling of key waste items to reduce the amount of waste going to the landfills and dumpsites	Councils	2011-2015	1,250,000
12	Implement incentives and mechanisms to control/regulate importation and production of items which become problematic wastes (focus on plastic bags)	DEC	2013-2015	4,550,000
13	Develop appropriate collection services for the provincial centres	Councils	2011-2015	11,200,000
14	Develop environmentally sound facilities for disposal of solid waste and medical waste, septic sludge and residues	DEC	2010-2015	70,100,000
15	Develop an environmental monitoring program for closed dumpsites, existing dumpsites and landfills, and other contaminated sites	DEC	2012-2015	1,030,000
16	Establish a National Waste Management Coordinating Committee to facilitate cooperation among agencies with respect to the management of the different types of wastes	DEC	2010	130,000
<b>TOTAL ESTIMATE</b>			<b>2010-2015</b>	<b>93,310,000</b>



## Appendix 3: Action Plan for Implementation of the NWMS

	Action	Lead Agency (Other Stakeholders)	Time-frame (for completion)	Indicative Budget for the timeframe (VT)	Possible sources of funding, TAs, & partnerships	Performance Indicators	Sources of Verification	Assumptions
<b>1.</b>	<b>Enact the draft laws and regulations</b>		<b>2010</b>	<b>30,000</b>				
a.	Review the draft bill and regulations	DEC (DLQS, PWD, PHD, DGMWR)	2010	-	-	Drafts reviewed	Records of discussion	
b.	Confirm the drafts	DEC (SLO)	2010	-	-	Drafts confirmed	Approval of SLO	
c.	Lobby for bill to be approved and included in list of bills for next parliament session (e.g. lunch workshop for DG, Ministers, etc)	DEC	2010	30,000	DEC budget	Council of Ministers approve the drafts	Official correspondence	
d.	Publish the approved drafts for consultations	DEC	2010	?	DEC budget	Draft published	Newspapers, gazette	
e.	Write Council of Ministers (COM) paper on draft bill and regulations	DEC	2010	-	-	Paper completed and submitted	Council of Ministers Paper	
f.	Council of Ministers to finally approve the drafts	DEC	2010	-	-	COM approve the regulations	Official correspondence	
g.	Minister of Environment to sign Regulations (and for the Act, Parliament to enact)	DEC	2010	-	-	Regulations signed, Act enacted	Signed regulations, Act	
h.	Gazettal of Regulations	DEC (SLO)	2010	?	DEC budget	Regulations	Gazette	
<b>2.</b>	<b>Strengthen capacity for enforcement of waste management laws</b>		<b>2011-2015</b>	<b>1,500,000</b>				
a.	Identify enforcement officers from relevant agencies (e.g. Health Dept, Police, etc) and train them on aspects of enforcing the legislation through training workshops. Enforcement should be done after an adequate period of awareness (give people time to adjust)	DEC (SLO, MoH, Police Department)	2011	1,000,000	National sources	Number of enforcement officers trained	Training records, training exams	Act and regulations are enacted
b.	Promote awareness of the legislation after it is enacted through an awareness campaign in collaboration with NGOs and other stakeholders	DEC (SLO, Live & Learn, Wan Smolbag)	2011-2015	500,000	NGOs, DEC budget, other national sources	Number of awareness campaigns conducted	Awareness materials	Act and regulations are enacted
<b>3.</b>	<b>Develop a policy for medical waste</b>		<b>2010-2011</b>	<b>200,000</b>				
a.	Convene a stakeholder meeting to develop the draft policy and national medical waste management strategy	MoH (DEC, WHO, SPREP)	2010	200,000	MoH, WHO, SPREP	Meeting convened	Meeting minutes	
b.	Prepare the draft Policy and Strategy and circulate for comments	MoH (DEC, WHO, SPREP)	2010	-	-	Policy and Strategy drafted	Draft policy and strategy	



Action		Lead Agency (Other Stakeholders)	Time-frame (for completion)	Indicative Budget for the timeframe (VT)	Possible sources of funding, TAs, & partnerships	Performance Indicators	Sources of Verification	Assumptions
c.	Present draft policy and strategy to Council of Ministers for approval	MoH	2010	-	-	Policy and strategy endorsed	Council of Ministers Decisions	Draft policy and strategy developed
d.	Begin implementation of the strategy	MoH	2011	?	WHO, AusAID, NZAID, USAID	Activities identified in the strategy are implemented	Independent report/evaluation of the strategy	Resources available to undertake actions in the strategy
<b>4.</b>	<b>Develop a policy and procedures for managing disaster waste</b>		<b>2011</b>					
a.	Convene a stakeholder meeting to develop the draft policy and procedures for managing disaster waste	DEC (DMO, PWD, MoH, other agencies)	2011	200,000	DMO, SPREP, SOPAC	Meeting convened	Meeting minutes	
b.	Prepare the draft policy and procedures, taking into account lessons from other islands such as Cook Islands and Samoa and circulate for comments	DEC (DMO, PWD, MoH, other agencies)	2011	-	SPREP, SOPAC	Policy and procedures drafted	Draft policy and procedures	
c.	Present draft policy and procedures to Council of Ministers for approval	DEC	2011	-	-	Policy and procedures approved	Council of Ministers Decisions	Draft policy and procedures developed
<b>5.</b>	<b>Mainstream waste management and pollution control into the medium term strategic framework MTSF/PAA</b>		<b>2010-2015</b>	<b>0</b>				
a.	Contact project leader for the UNDP project on mainstreaming of environmental sustainability and identify opportunities and mechanisms for mainstreaming of waste management	DEC (Other govt departments, NGOs, Chamber of Commerce)	2010	-	UNDP	Meeting held with project leader	Meeting minutes	
b.	Develop and implement any actions identified from the discussions to support mainstreaming of waste management	DEC	2010-2015	?	UNDP	Actions implemented to support mainstreaming	Official reports & correspondence	Assumes appropriate actions have been identified
<b>6.</b>	<b>Identify investment opportunities from bilateral, multi-lateral, and international agencies for waste management and pollution control</b>		<b>2010-2015</b>	<b>0</b>				
a.	Use available resources (internet, networks) to identify opportunities from donors, partners, technical assistance and cooperation agencies, volunteer organizations, regional institutions, etc. Establish a system for continuous review and update of opportunities	DEC (Aid Coordination Unit, PM's Office, Vanuatu Investment Promotion Authority)	2010-2015	-	SPREP	Number of funding opportunities identified	Compiled list of opportunities	

Action		Lead Agency (Other Stakeholders)	Time-frame (for completion)	Indicative Budget for the timeframe (VT)	Possible sources of funding, TAs, & partnerships	Performance Indicators	Sources of Verification	Assumptions
b.	Develop concise concept notes (2 pages max) for projects to implement the national waste management strategy and submit these to appropriate donors, partners, etc	DEC (Foreign Affairs, Aid Coordination Unit)	2010-2015	-	NGOs, EU, ADB, PROC, AusAID, NZAID, USAID, GEF5, ADB	Number of funding applications submitted	Funding applications	
<b>7.</b>	<b>Establish multi-sectoral partnerships in Vanuatu (NGOs, local business community)</b>		<b>2010-2014</b>	<b>40,000</b>				
a.	Identify key stakeholders to develop partnerships with	DEC	2010	-	-	Stakeholders identified	List of potential partners	
b.	Invite stakeholders to planning session to discuss relevant sections of the National Waste Management Strategy in detail and identify areas for collaboration and barriers (if any) that should be addressed	DEC (NGOs, business community)		40,000	NGOs, Local business community	Number of stakeholder consultations	Minutes of consultation meetings	
c.	Develop a plan to address those barriers that can be resolved (and implement the plan)		2011-2014	?		Barriers resolved		Assumes barriers were identified
d.	Develop and sign MOUs and agreements based on discussions		2012	-	-	Number of signed MOUs & agreements	Signed MOUs /agreements	Assumes MOUs do not already exist
<b>8.</b>	<b>Develop institutional capacity for waste management at the municipal, provincial, and national levels</b>		<b>2012-2015</b>	<b>1,500,000</b>				
a.	Develop the terms of reference for a consultancy to assess the institutional capacity of DEC and Councils for waste management (in particular policy development and planning, funding and resource management, monitoring and assessment, project cycle management)	DEC, (Municipal Councils, Provincial Councils)	2012	-	SPREP	Terms of Reference produced	Terms of Reference	
b.	Undertake the consultancy	DEC	2012	1,500,000	AusAID, NZAID, USAID, ADB	Consultant hired, Capacity assessment report produced	Consultancy contract, Capacity assessment report	
c.	Seek funding to implement the recommendations of the assessment	DEC	2012-2015	?	AusAID, NZAID, USAID, ADB	Funding secured	Financing Agreement	
<b>9.</b>	<b>Develop and deliver training of trainers (TOT) program on waste management, pollution control, and clean production</b>		<b>2011-2013</b>	<b>1,540,000</b>				

Action		Lead Agency (Other Stakeholders)	Time-frame (for completion)	Indicative Budget for the timeframe (VT)	Possible sources of funding, TAs, & partnerships	Performance Indicators	Sources of Verification	Assumptions
a.	Convene a meeting with VNTC & VQF to discuss the requirements for developing and delivering a training program for waste management	DEC (VNTC, VIT, APTC)	2011	40,000	DEC budget	Meeting convened	Minutes of meeting	
b.	Sign MOU with VNTC/VQF for developing and delivering the course	DEC (VNTC, VIT, APTC)	2011	-	-	MOU signed	Signed MOU	
c.	If needed, seek funding to develop the module and to offer scholarships as an incentive to attracting students for the first year of the module	DEC (VNTC, VIT, APTC)	2011	1,500,000	AusAID, NZAID, JICA	Funding secured	Financing Agreement	
d.	Complete the development of the module content (subject to funding) and develop a timetable for delivering the module	VNTC (DEC, VIT, APTC USP, SPREP)	2013	-	-	Module developed and available at local institution	Course material, syllabus, official course schedule	
<b>10.</b>	<b>Improve awareness of waste minimization techniques by working together with key stakeholders</b>		<b>2011-2014</b>	<b>40,000</b>				
a.	Convene a meeting with key stakeholders to discuss and agree on waste minimization focus (e.g. composting) and to develop a joint work program for awareness raising activities. Mechanisms for reporting on the joint work program must also be discussed and agreed. Schools and churches must be included as key stakeholders especially from rural subsistence communities.	DEC (Live & Learn, Wan Smolbag, Chamber of Commerce, local business sector, Schools, churches)	2011	40,000	Chamber of Commerce, local business sector	Meeting convened	Meeting minutes, agreed joint work program	
b.	Sign MOU with key stakeholders based on discussions	DEC	2011	-	-	MOUs signed	Signed MOUs	
c.	Implement the agreed joint work program	All involved	2011-2014	-	NGOs, Local business community	Number of awareness activities conducted	Joint work program reports	
<b>11.</b>	<b>Implement systems that encourage waste minimization, reuse and recycling of key waste items to reduce the amount of waste going to the landfills and dumpsites</b>		<b>2011-2015</b>	<b>1,250,000</b>				
a.	Conduct waste characterization study in Provincial Centres to identify the main waste components (Universities and colleges can be approached to undertake this as a student project)	Provincial councils, municipal councils (DEC)	2011	50,000	Colleges and Universities, SPREP	Waste characterization study completed	Waste characterization report	
b.	Commit to taking the actions necessary to support the implementation of the CDL scheme	DEC (all stakeholders)	2011	-				CDL scheme ready for implementation

Action		Lead Agency (Other Stakeholders)	Time-frame (for completion)	Indicative Budget for the timeframe (VT)	Possible sources of funding, TAs, & partnerships	Performance Indicators	Sources of Verification	Assumptions
c.	Develop and implement a plan for storage of recyclable waste at Bouffa Landfill. The plan should identify wastes for which segregation is to be encouraged, storage locations, basic infrastructure (e.g. shed, containers), etc	Port Vila Municipality (DEC)	2011	700,000	JICA, AusAID, NZAID, PROC, SPREP	Reduction in organic waste landfilled	Waste audit at landfill	
d.	Promote segregation of yard and kitchen waste at home by promoting and demonstrating composting - link with action 9(a)	DEC (Councils, NGOs)	2010-2015	500,000	Local business community, NGOs	Reduction in organic waste landfilled	Waste audit at landfill	
<b>12.</b>	<b>Implement incentives and mechanisms to control/regulate importation and production of items which become problematic wastes (focus on plastic bags)</b>		<b>2013-2015</b>	<b>4,550,000</b>				
a.	Conduct local consultations with local business community and other stakeholders to introduce plans and discuss potential barriers that might prevent further action on plastic bags	DEC (business sector, manufacturers, importers, supermarkets, etc)	2013	50,000	Local business community, DEC budget	Local meeting/ consultations conducted	Meeting minutes	
b.	Develop terms of reference for a consultancy to evaluate the options for controlling the consumption of plastic bags in Vanuatu	DEC (business sector,	2013	-	SPREP	Terms of Reference produced	Terms of Reference	Assumes positive consultation outcomes
c.	Undertake the consultancy	DEC	2013	1,500,000	AusAID, NZAID, USAID, NGOs	Consultant hired, Report produced	Consultant's report	
d.	Implement the recommendations of the consultancy	DEC (all stakeholders identified in the report)	2014-2015	3,000,000	AusAID, NZAID, USAID, NGOs	Reduction in plastic bag usage	Importation statistics for plastic bags	
<b>13.</b>	<b>Develop appropriate collection services for the provincial centres</b>		<b>2011-2015</b>	<b>11,200,000</b>				
a.	Seek technical assistance to conduct time and motion studies on waste collection in Port Vila and Luganville	Municipal & Provincial councils, DEC (SPREP, VNTC, VIT)	2011	200,000	SPREP, JICA, AusAID, NZAID, Universities	Study conducted with recommendations for improvement	Time & Motion Study report	
b.	Implement recommendations from the study using existing resources as much as possible	Councils (DEC)	2012-2015	-	AusAID, NZAID, JICA, GEF5, ADB, GIP	Waste collection system improved	Independent time & motion study	

Action		Lead Agency (Other Stakeholders)	Time-frame (for completion)	Indicative Budget for the timeframe (VT)	Possible sources of funding, TAs, & partnerships	Performance Indicators	Sources of Verification	Assumptions
c.	Develop project proposal to implement additional recommendations from time and motion study, which cannot be implemented with existing resources (e.g., procurement of additional garbage trucks, bins) and seek funding	Councils (DEC)	2012	10,000,000	AusAID, NZAID, JICA, GEF5, ADB, GIP	Project proposals developed	Project proposals, concept notes	
d.	Evaluate the cost recovery mechanisms for waste collection in Port Vila and Luganville and develop a proposal to modify/implement mechanisms. Seek technical assistance if necessary to support the evaluation of the mechanisms	Councils (DEC)	2011	1,000,000	SPREP	Cost recovery mechanisms evaluated, proposal developed to modify/improve	Evaluation report, Proposal	
<b>14.</b>	<b>Develop environmentally sound facilities for disposal of solid waste and medical waste, septic sludge and residues</b>		<b>2010-2015</b>	<b>70,100,000</b>				
a.	Develop concept notes and project proposals for upgrading existing facilities (e.g. purchase and installation of a weigh bridge at Bouffa landfill, upgrading Luganville dumpsite) and aggressively seek funding to implement them	DEC, Municipal Councils, Provincial Councils (MoH,	2011	70,000,000	JICA, AusAID, NZAID, SPREP, PROC, ADB, GIP	Project proposals developed and submitted to donors	Project proposals, concept notes, donor correspondence	
b.	Develop landfill guidelines for Bouffa semi-aerobic landfill	Councils (DEC)	2011	100,000	JICA, SPREP, national sources	Landfill guidelines developed	Approved landfill guidelines	
c.	Initiate dialogue with the Ministry of Infrastructure and Public Utilities, which is the executing agency for the ADB Project that includes a review of the sanitation master plan. This dialogue should focus on identifying strategic linkages between the master plan and this national waste management strategy, and opportunities for funding relevant activities in this strategy.	DEC (MIPU)	2010	-	-	Dialogue established, opportunities for cooperation discussed	Minutes of meeting	
d.	Undertake any actions identified during dialogue with MIPU.	DEC	2010-2015	?	ADB	Actions identified during discussions are implemented	Correspondence, Minutes of Meeting	Assumes actions have been identified
<b>15.</b>	<b>Develop an environmental monitoring program for closed dumpsites, existing dumpsites and landfills, and other contaminated sites</b>		<b>2012-2015</b>	<b>1,030,000</b>				

Action		Lead Agency (Other Stakeholders)	Time-frame (for completion)	Indicative Budget for the timeframe (VT)	Possible sources of funding, TAs, & partnerships	Performance Indicators	Sources of Verification	Assumptions
a.	Convene a meeting/workshop with key stakeholders to identify initial sites to be monitored, items for monitoring (e.g. surface water such as rivers, groundwater, gas), and existing capacity for monitoring. Discuss and agree a way forward.	DEC (EHU, Councils, UNELCO)	2012	30,000	Universities,	Meeting convened	Meeting minutes	
b.	Seek technical assistance to prepare the outline of the monitoring program (location, items for monitoring, methods, equipment needs, etc)	DEC	2012	500,000	SPREP	Outline of environmental monitoring program prepared	Environmental Monitoring Program	
c.	Seek funding to implement the environmental monitoring program	DEC (EHU, Councils)	2012-2015	500,000	AusAID, NZAID, JICA, GEF5, ADB	Funding secured and program implemented	Financing Agreement	
<b>16.</b>	<b>Establish a National Waste Management Coordinating Committee to facilitate cooperation among agencies with respect to the management of the different types of wastes</b>		<b>2010</b>	<b>130,000</b>				
a.	Develop the draft terms of reference (TOR) explaining powers, duties, and responsibilities, etc for the coordinating committee	DEC	2010	-	-	Draft TOR developed	Draft TOR	
b.	Identify the primary stakeholders for membership of the committee and convene a meeting with these stakeholders to refine and finalize the draft TOR. Particular attention should be paid to the representation from rural subsistence communities lacking government presence (possibly through churches and schools) to ensure that the needs of these communities are adequately considered during the implementation of the National Strategy.	DEC (DLQS, PWD, PHD, DGMWR, MoH, Live & Learn, Wan Smolbag, schools, churches)	2010	30,000	DEC budget, other national sources	Meeting convened	Meeting minutes, Finalized TOR	Stakeholders willing to participate in the Committee
c.	Launch the committee	DEC	2010	100,000	DEC budget, other national sources	Committee established	Launch program, Instrument of appointment or establishment of the committee	
<b>TOTAL ESTIMATE</b>			<b>2010-2015</b>	<b>93,110,000</b>				