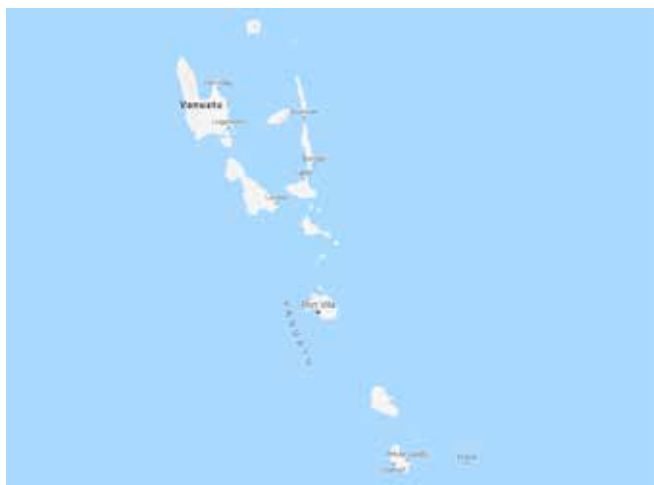


Introduction

The increasing presence of plastic marine debris in the South Pacific Ocean is focusing attention on strengthening recycling policies and systems in the region. Unique challenges associated with shipping commodities of low value over long distances to recycling markets, however, reduce the economic viability to do so. This country profile includes the current technologies, material flow, logistics, public policies, institutional framework, financial mechanisms, and initiatives that are being designed or have been implemented to strengthen recycling systems in Vanuatu.

Vanuatu is a Y-shape string of islands that runs in a northwest-to-southeast direction in the Melanesia region of the Pacific Ocean. Over 80 islands total a land area of 12,281km², with a combined coastline of 2,530km. The largest cities are the capital, Port Vila (Island of Efate), and Luganville (Espiritu Santo, the largest island).



Source: Google Maps.

Socioeconomic background

A mountainous volcanic archipelago made up of high plateaus, rolling hills, and narrow coastal plains, Vanuatu maintains strong cultural traditions, while tourism has experienced strong growth. With the transition by urban communities to consumer economics, solid and liquid wastes are on the rise, increasing the risks of marine pollution and human health and safety.

Contributions to the waste stream are increasing in line with growing urban populations and rising international visitor numbers which reached 95,117 in 2016. (SPTO, 2017). In the 10 years leading to 2014, cruise ship arrivals increased 15%, reflecting 230 cruise ships carrying more than 2,000 passengers, each calling into the ports of Port Vila, Luganville, Mystery Island, Pentecost, Champagne Bay, and Wala. The ships dispose of waste material in Port Vila.

Vanuatu's gross domestic product in 2015 was US\$742 million/US\$2,990 per capita (OEC, 2017). It had a trade balance deficit of US\$194 million, with exports at US\$133 million (-23.6% annualised) and imports at US\$328 million (-19.1% since 2010).

The primary export market destinations for 2015 were the People's Republic of China, Japan, New Caledonia, Thailand and Turkey. The main import origins for the same year were Australia, the People's Republic of China, Fiji, Japan and New Zealand. (OEC, 2017).

Vanuatu's economy is based primarily on small-scale agriculture, although the manufacturing sector contributes 3.71% to the economy (GlobalEDGE, 2017). Tourism represented nearly 65% of gross domestic product in 2014

Vanuatu's population in 2015 was approximately 277,500, with a growth rate of 2.4% (ADB, 2016). Approximately 205,350, or 74%, live in rural areas (Knoema, 2015) across the islands, grouped into six provinces, according to Vanuatu's 2009 Census. These provinces, including the main towns and islands, are indicated in the table below.

Vanuatu	
Torba Province Islands	Population
Hiw	269
Tegua	58
Lo	198
Ureparapara	437
Motalava	1,399
Vanua Lava	2,539
Mota	666
Gaua	2,471
Merig	12

Sanma Province Islands	Population
Espiritu Santo, including the city of Luganville	38,303
Tutuba	609
Mavea	196
Aore	405
Araki	140
Malo	4,191

Penama Province Islands	Population
Ambae	10,146
Maewo	3,556
Pentecost	16,224

Malampa Province Islands	Population
Malekula	22,617
Ambrym	7,110
Paama	1,542

Shefa Province islands	Population
Epi	5,066
Tongoa	2,273
Emae	732
Tongariki	267
Makira	106
Mataso	74
Efate including Port Vila	64,327
Emau	602

Tafea Province Islands	Population
Erromango	1,917
Tanna	2,8734
Aniwa	341
Futuna	481
Aneityum	901

Source: Vanuatu National Statistics Office, 2009 National Population and Housing Census, Analytical Report, Volume

Solid waste management

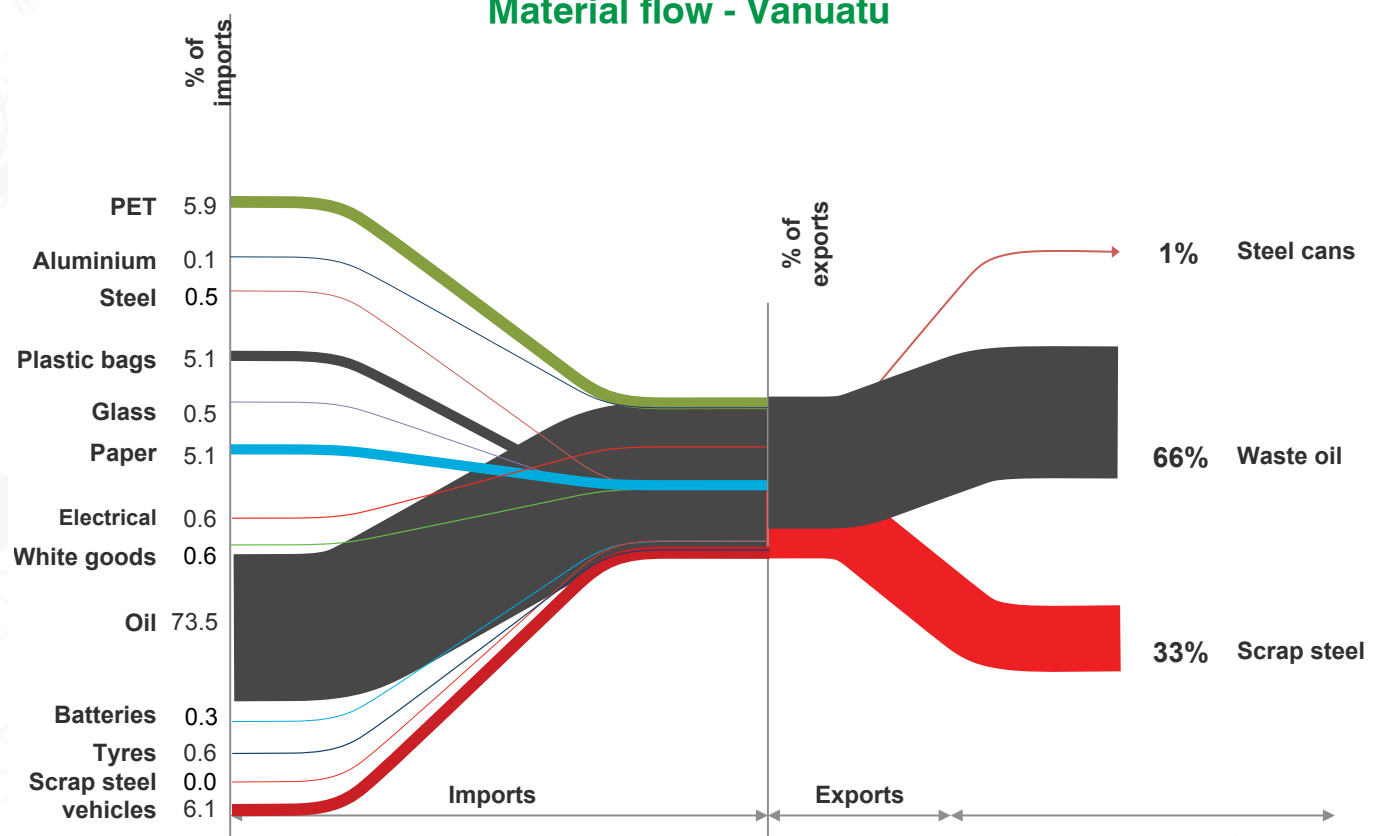
Undertaken by the Japan International Cooperation Agency (JICA) in 2011, an audit of daily household waste in Port Vila shows a rate of 0.427kg. A further study in 2014 established an average household daily waste generation in Luganville of 6.8kg. (*Luganville Municipal Council*).

Both studies show that the majority of waste is organic, followed by plastic. Yet another study, taking into account Tafea Province, established a per capita waste generation rate of approximately 0.5kg a day on islands with populations of less than 5,000, and 0.8kg a day on islands of more than 5,000 (*Tafea Provincial Government Council and Lenakel Town Municipal Council, 2017*).

This regional study coordinated by PRIF models the potential recovery of 15 materials types. A defined set of recovery rates was applied to the urban, rural, and outer island population distribution to calculate Vanuatu's potential recovery tonnage. The PRIF study compares various data to establish the context for the 15 waste materials.

The material flow chart below is based on an analysis of Vanuatu's imports of the 15 material categories studied, averaged over a seven-year period to 2016, compared with exports of those recovered recyclable materials, averaged over a two-year period 2015-2016, presented as a percentage of the total of the 15 categories. (*UN Comtrade, 2017*).

Material flow - Vanuatu



Source: Anne Prince Consulting 2017

Note: The percentage of imports and exports displayed relate only to the proportion of the 15 materials categories studied, not total imports/exports



Import data indicates that beverage container imports increased steadily from 2009 to 2011, dropping sharply from 2012 onwards. Similar trends were observed in electronics and whitegoods, whereas paper and cardboard imports have held steady over time. Palm oil, vegetable oil, and petroleum imports have increased steadily. It is notable that imports of large, 10-passenger vehicles also has increased at a steady pace.

While recyclable material exports from Vanuatu, overall, are relatively insignificant, these mainly comprise used motor and cooking oils, as well as scrap steel. Few exports of beverage containers, e-waste, and paper and cardboard were recorded, other than 12 tonnes (t) in 2015.

Modelling of potential recovery of recyclable materials, presented in the table below, is based on an estimated average daily per capita municipal solid waste generation of 3.28kg (*World Bank, 2012*). It also applies a range of location-specific estimated recovery rates that are based on a set of assumptions of existing or introduced incentive-based policies and programs, such as container-deposit schemes and import levies. The resulting ratios were used to estimate average annual tonnages that could be recovered for recycling. (*JICA, 2013; SPREP 2016; Mobile Muster, 2013; DOE, 2017; Jambeck et al., 2015; MFAT, 2016; UNIDO/ICSHP, 2013*).

Vanuatu	
Recyclable Material Forecast	Estimated Metric Tonnes
Polyethylene terephthalate (PET) beverage containers	301
Aluminium cans	818
Glass beverage containers	577
Steel cans	649
Plastic shopping bags	195
End-of-life (EOL) renewable energy equipment	3
Paper/cardboard	2,718
E-waste	12
Whitegoods	112
Used motor/cooking oil	839
Used lead-acid batteries	47
Lithium batteries	143
Scrap steel/ nonferrous metals	974
EOL tyres	47
EOL vehicles	1,581
Total	9,016

Future waste management

Future increases in recovered materials are expected to result from the PacWaste (2014-17) program, implemented by Secretariat of the Pacific Regional Environment Programme (SPREP). Its objectives are to improve the management of e-waste by establishing a pilot project for the safe dismantling and export of e-waste and creating a public awareness campaign (*SPREP, 2017*).

The second phase of the Promotion of Regional Initiative Solid Waste Management (J-PRISM II) project, implemented by JICA in early December 2016, supports capacity building in waste management. Target initiatives include improved governance and human resource development, focusing on Port Vila, Luganville, and Lenakel.

Restoration of Ecosystem Services and Adaption to Climate Change is a regional program of the Pacific Community which, jointly with Vanuatu's Shefa Province, is funded primarily by the French Development Agency and the Global Environment Facility, as well as the tourism sector. It aims to develop waste services and recycling systems in the north of Efate, including the resorts along that coast. Initiatives include the return of packaging waste, such as aluminium cans, from the more remote areas, in particular offshore islands. The program also will support recycling bins and the development of return logistics, using private supply vehicles to transfer the waste to the recycler in Port Vila.

Only 33% of the population, mostly in urban Port Vila, Luganville and Lenakel, has access to electricity. Rural areas have a much lower rate of supply. Vanuatu's National Energy Roadmap 2016-2030 targets 65% renewable energy by 2020. This may have been revised, however, to account for 100% renewable electricity generation and 100% access by 2030 (*MFAT, 2016*).

Phase 1 of the Vanuatu Rural Electrification Program supported by the World Bank, Government of New Zealand and others, will ensure the electrification of 17,500 off-grid households and provide initiatives that include geothermal energy and hydropower. The Energy Access Project of the Asian Development Bank and the Government of Vanuatu will increase electrification rates on the islands of Malekula and Espiritu Santo with hydropower (*ADB, 2017*). The rise in power distribution is expected, in turn, to increase the presence of electrical household goods in Vanuatu's waste stream.

Plastic marine debris

Mismanaged plastic waste eventually enters the marine environment by way of inland rivers and waste water outfalls or is transported by wind and tide. Rigid and lightweight plastic from products that are consumed daily or used become marine debris if not managed appropriately. An estimated 9% of Vanuatu's waste stream consists of plastic.

The islands of Vanuatu have a combined coastline of 2,530km, and a recent study (*Jenna et al., 2015*) indicates a daily plastic waste generation of approximately 74t. An estimated 61.5t is mismanaged daily and predicted to enter the marine environment through release from uncontained disposal sites or by direct littering. An estimated 22,470t were released in the waters around Vanuatu in 2010. If not addressed, the amount is expected to rise to 38,000t by 2025.

Of the 74t of plastic generated each day, approximately 8.1t may comprise polyethylene terephthalate (PET) or high-density polyethylene (HDPE) plastic that is eligible for recovery under a container deposit scheme (CDS). Based on an average reduction rate of 40% in mismanaged waste with a CDS in place, approximately 2.73t of PET and HDPE plastic could be recycled on a daily basis. This could increase to an 80% or above reduction rate, depending on access to recycling collection services and viable markets, among others. Nonetheless, a 40% reduction in mismanaged PET and HDPE would result in approximately 21,483t of plastics becoming marine debris each year.

The outcome of mismanaged plastic can be divided into three primary groups: plastic that remains on the surface of the sea as floating debris, plastic that sinks to the ocean floor, and plastic that washes up on beaches. A CDS that recovers 40% of HDPE and PET bottles in Vanuatu may achieve the following reductions in marine debris each year:

- 149t in floating plastic
- 696t in sunken plastic
- 149t in beach plastic.

Further benefits attributed to a CDS are possible with a reduction in annual damage costs to Vanuatu's 215 local fishing vessels (approximately US\$1,677). If beaches were cleaned up, over US\$252,294 would be saved, of particular relevance to the amenities of coastal communities and the tourism sector.

Infrastructure and services

Information relating to the solid waste and recycling infrastructure and services in Vanuatu are sourced from 2014. Solid Waste Management in the Pacific: Vanuatu Country Snapshot. Manila: Asian Development Bank. Other information has been drawn from the 2013, "Data Collection Survey on Reverse Logistics in the Pacific Islands". Final Report, Japan International Cooperation Agency and Vanuatu's National Waste Management and Pollution Control Strategy and Investment Plan 2016–2020.

The use of canned food, single-use plastic bags, and plastic bottles is standard on the outer islands, much of which now has become marine debris. In addition, the materials cause significant disposal issues for local communities. As a result, waste is commonly burned and plastic is frequently used as a means to light fires.

Exported recyclables (see table below) are collected on the island of Efate by a recycling firm, while cartridges are collected in Espiritu Santo and exported to New Zealand for recycling. The management processes of the 15 materials within the scope of this profile are reflected in the following table.

Vanuatu: Management Processes	
Export	Steel and aluminium cans, paper, used engine oil, e-waste, scrap steel, and nonferrous
Reused	Cardboard, used engine oil, polyethylene terephthalate and glass bottles
Non-recycled	Used cooking oil, whitegoods, vehicle tyres, solar panels, used lead acid-batteries, and lithium batteries

Source: *Regional Resource Circulation and Recycling Network Project Survey, Department of Environment and Conservation Protection, June 2017*

A 2013 study (*JICA, 2013*) found evidence that the scrap metal and aluminium exports to the Republic of Korea attracted a market rate of US\$500/t and US\$12,000/t, respectively. Scrap exports to Abu Dhabi, Fiji, India, New Zealand, and Vietnam sold from US\$300/t to US\$400/t. Cardboard and office goods to these locations sold for US\$200/t and US\$400/t, respectively.

Previously, five recycling companies exported approximately 11,740t (587 twenty-foot equivalent units, TEU) of scrap metal per annum, mainly to the Republic of Korea and New Zealand. Recycling activities have been seriously impacted, however, as a result of the Government of Vanuatu's decision to apply an export levy of 15% on scrap metal and other recyclable materials that are classified as second-hand goods. Three of the five companies, therefore, were forced to close down and the remaining two companies have reduced operations by 50%.

A significant level of support has been provided by JICA's J-PRISM I project for upgrading waste management processes, under which achievements include core planning and infrastructure improvements between 2011 and 2015. These have promoted the practice of recycling, ensured efficient operating capacity at the disposal site and developed a landfill training programme.

The Secretariat of the Pacific Regional Environment Programme (SPREP) is partnering with a local recycler, under its PacWaste program, to pilot the processing and export of e-waste. It also facilitates export of used lead-acid batteries to the Republic of Korea for recycling.

In terms of waste as a result of natural disasters, an example can be drawn from the Tropical Cyclone Pam waste management project. Under the Waste Management and Livelihoods Recovery Initiative of the United Nations Development Programme, the project sought to reuse the debris resulting from the event.

Vanuatu's Azure Pure Water recently launched the Give-me-5 recycling solution, offering a Vt\$0.05 rebate on clean bottles returned to the factory. Azure Pure Water has partnered with a local recycler and the packaging supplier, VISY of Australia, to export bales of plastic for recycling. The company expects to send its first container following the December 2017 Vanuatu Pacific Games.



Vanuatu's Department of Environment Protection and Conservation (DEPC), in collaboration with Wan Smol Bag Theatre - a local nongovernment organization - Port Vila Municipality, and JICA, has partnered with RecycleCorp Vanuatu to manage a cash-for-aluminium-can return programme. Through this campaign, three Port Vila communities deposit empty cans in bags placed at a post office. RecycleCorp pays Vt40/kg for the cans, the revenue of which is allocated to the three communities.

Other than the aluminium can return programme on the island of Efate, there are no household collection services or community recycling centres in place. A storage facility and baler exists within a local company that pays collectors between Vt10/kg and Vt200/kg for nonferrous material, exporting it to the Asian market. The firm also collects electronic waste for free. There is no evidence of the recycle of paper and cardboard or of plastic and construction waste. Vanuatu Brewing and Vanuatu Beverage Ltd. have a CDS for glass bottles at the point of sale. The deposit is refunded on return of the bottle.

Municipal solid waste is managed by the councils of Port Vila, Luganville, and Lenakel. Port Vila's service offers a collection two to three times a week with compactor/ tipper vehicles that dispose the waste in Port Vila's Bouffa Landfill, which applies the semi-aerobic method. JICA's J-PRISM I project has provided waste disposal equipment to the Bouffa Landfill.

Luganville collects waste one day a week, transporting it to a controlled disposal site. The provinces, including the outer islands, use small pick-up vehicles that deliver the waste to open-pit disposal sites. Rural areas do not have waste collection services.

A prepaid bag system has been established in Port Vila whereby 100kg or 70kg yellow bags cost Vt100 (Vt1,500 a roll) or Vt80 (Vt850 a roll), respectively. Luganville has a similar system, whereby 15kg red bags are prepaid at Vt80, Vt70, or Vt60 each, depending on the per roll price. Both municipalities offer commercial collection services for a fee, based on volume.

Quarantine waste in Port Vila and Luganville is managed by the Vanuatu Department of Biosecurity. While existing incinerators are meant to process the materials, the waste usually is treated by open fires at landfills, given the cost of fuel necessary for incineration.

Since services are generally unreliable and inefficient, and the practice of burning waste is constant, efforts are being made to boost the use of a GPS tracking system, along with real-time motion planning methods.

Logistics

Vanuatu has two international ports - in Port Vila and Luganville. These are operated by the respective port authorities.

Vanuatu



Source: Google Maps.

Port of Santo terminal is approximately three hectares and has a main quay, 360 metres long by 14 metres deep, and a warehouse. It does not have a shore crane, although private stevedore services are available. A new port is under construction to replace it.

The Port of Santo is capable of handling 8,000 TEU per year. The port has a current throughput of approximately 2,800 import, 300 export and the return of 2,500 empty containers each year which may potentially be made available for reverse logistic arrangements.

This port is located on a route that is cost effective and is regularly serviced by various international shipping lines. Estimated TEU shipping container rates, presented below, are based on the cargo of nonhazardous goods, inclusive of un/loading and a bunker adjustment factor, although they do not account for customs clearance, duties, and quarantine inspection.

Port of Santo, Vanuatu: Shipping Lines		
Swire Shipping; Kyowa Shipping Co. Ltd.; Polynesia Line		
Destination	Schedule	Est. USD per TEU
North Asia	30-day	2,400 to 3,650
Australia	14-day	2,100 to 3,650
Fiji	21-day	2,450 to 3,200
New Zealand	21-day	2,400 to 4,600
Noumea	21-day	1,950 to 3,200

Source: AMSTEC Pty Ltd

Notes: USD = U.S. dollar;

TEU = twenty-foot equivalent unit.

The Port of Port Vila is capable of handling 50,000 TEU per year. The port has a current throughput of approximately 8,000 import, 1,400 export and the return of 6,200 empty containers each year which may potentially be made available for reverse logistic arrangements. The port also loads and unloads approximately 400 trans-shipment containers each year.

Port Vila is also located on a cost effective and well-served shipping route. Data presented in the table below are similar to those that relate to the Port of Santo in terms of characteristics.

Port Vila, Vanuatu: Shipping Lines		
Swire Shipping; Kyowa Shipping Co. Ltd.; Polynesia Line		
Destination	Schedule	Est. USD per TEU
North Asia	14-day	2,400 to 3,650
Australia	14-day 16-day	2,100 to 3,650
Fiji	14-day 21-day	2,450 to 3,200
New Zealand	21-day	2,400 to 4,600
Noumea	21-day	1,950 to 3,200

Source: AMSTEC Pty Ltd

Notes: USD = U.S. dollar;

TEU = twenty-foot equivalent unit.

Both international ports offer services that include warehouse storage, water supply, electricity, and hinterland road links. A few outer islands have wharves and jetties for domestic cargo ship loading/offloading and for passenger ship dis/embarkation. Where this is not the case, coastal anchorages and landing barges are offered.

Frequent ferry services are provided to the central provinces, although this is not the case with the southern and northern islands, which experience irregular services. Tafea Province and Torba Province attract higher cargo freight rates and passenger fares.

Vanuatu's domestic fleet of vessels plies between the outer islands and Port Vila and Luganville. Services to all islands, however, are unreliable. A 2013 study found that local, registered vessels include:

- 10 cargo and passenger landing crafts
- 54 cargo and passenger flare hull vessels
- 175 miscellaneous vessels, used for coastal cargo and passenger transportation.

The Inter-Island Shipping Support Project, supported by the Asian Development Bank and the Government of New Zealand, intends to boost the movement of domestic freight. A new inter-island shipping terminal at Port Vila will be built; new jetties at Lolowai, Loitong, and Port Sandwich will be added; and the wharves of Litzlitz, Lenakel, and Simonsen will be rehabilitated. The project also will subsidise a number of voyages at a designated frequency on otherwise commercially uneconomical routes. The outcome of this project significantly will enhance the logistics for the domestic movement of recovered waste materials to specific locations.

Institutional framework

Data relating to the institutional framework of Vanuatu have been gathered from the database of the Pacific Islands Legal Information Institute (*PacILII, 2017*). ECOLEX is also an information service that relates to environmental law (*ECOLEX, 2017*), from which various data also have been collected.

The Government of Vanuatu implements regulations and strategies that relate to the management of waste, control of pollution, issuance of permits, and monitoring of waste management operations. It also implements the international conventions and treaties to which it is a signatory.

The DEPC, under the Ministry for Climate Change Adaption, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management, is the lead agency for waste management and pollution control. It develops regulations and strategies, as well as supervises Vanuatu's Environmental Protection and Conservation Act.

The DEPC is also responsible for coordinating the implementation of Vanuatu's National Waste Management and Pollution Control Strategy and Investment Plan 2016–2020 (NWMPCSIP). This strategy aligns with the SPREP Cleaner Pacific 2025: Pacific Regional Waste and Pollution Management Strategy, and it aims to enhance mechanisms for policy and legislation; financing systems; capacity development; minimization of waste; integration of waste management; and coordination of national public awareness. The strategy's objectives are to develop incentive schemes under the Waste Management Act (e.g., CDS and/or polluter-pays mechanisms) and to encourage public/private partnership investment opportunities, supported also by the Vanuatu Infrastructure Strategic Investment Plan 2015-2024.

On 30 July 2017 the Vanuatu Government announced its intention to ban single use plastic bags and bottles. Regulations are being drafted under the Waste Management Act to formally introduce the bans as of 1 January 2018. It is understood the regulations will provide for a phased approach to introducing a range of polymer types under the ban.

Various long-range policies, legislations, strategies, and multilateral agreements that address issues relating to the management of waste and the control of pollution include the following:

- National Sustainable Development Plan 2016-2030
- National Environment Policy and Implementation Plan 2016-2030
- National Biodiversity Strategy and Action Plan
- Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030.

Pollution Control Act No. 10 (2013) and Waste Management Act No. 24 (2014) designate the role of waste management operators to the municipal, provincial, and national levels. They also establish the penalties for noncompliance.

Environmental Protection and Conservation Act, 2002 (Cap 283) is administered by the Ministry of Lands and Natural Resources through the DEPC. The Act provides

for conservation and the sustainable development and management of the environment. It identifies community conservation areas and oversees environmental impact assessments and bioprospecting. Environmental Impact Assessment Regulations 2012 provide an environmental impact assessment framework for project developments.

The Department of Energy's Environmental Code of Practice (Used Battery Disposal) for [the] Rural Electrification Project of June 2014 relates to the management of used lead-acid and nickel-cadmium batteries. It stipulates that vendors of photovoltaic solar systems are to adhere to the appropriate collection and disposal of such end-of-life batteries. The Department of Environment are to construct storage facilities for end of life batteries in the outer provinces.

Maritime Authority Act (Amendments) 2002, 2003, and 2004; Maritime (Conventions) Act 2006; and Pollution Control Act 2013 provide for the control of marine pollution. Public Health Act 1994, administered by the Ministry of Health, relates to the placement of bins in public places and the prevention of littering.

The Department of Tourism created a tourism accreditation framework in 2014 for the endorsement of the Vanuatu Tourism Operators Minimum Standards for a business license. The standards prevent negative impacts on land and marine environments and the burning of plastic, as well as encourage the appropriate disposal of waste.

Provincial governments are responsible for waste collection, transport, and disposal. Sanma Province has developed such a plan and Penama is in the process of doing so. Similarly, Tafea Province and Lenakel Town Municipal Council have incorporated Rubbish Collection By-Law (2014).

Municipal councils are responsible for the management, collection, and transport of solid waste, as well as the operation of landfill sites within their jurisdictions. They prepare annual waste management plans, policies, and by-laws to support national waste management strategies. The municipal councils of Port Vila, Luganville, and Lenakel have waste management plans that identify a range of waste reduction initiatives, including the recycling of aluminium cans, metal, plastic bags, and cardboard.

Luganville Municipal Council has developed Waste Management By-Law 2013 that regulates curbside collection services from individual properties and establishes community waste collection sites for areas that lack service. It also stipulates waste management fees and enforces compliance.

The Restoration of Ecosystem Services and Adaption to Climate Change project focuses on the creation of village waste committees, modelled on the Nguna-Pele Marine Protected Area Network (Vanuatu). The network promotes sound waste practices, organises the transfer of recyclable materials to Port Vila, and monitors progress in reducing littering and burning.

While Vanuatu is not a signatory to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, the NWMPCSIP outlines the case for ratifying this, as well as the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous

Chemicals and Pesticides in International Trade, and the Minimata Convention on Mercury. Vanuatu is, nevertheless, a party to the following multilateral environmental agreements and conventions.

Vanuatu	
Multilateral Agreements and Conventions	Status
Stockholm Convention on Persistent Organic Pollutants	Ratified
1995 Waigani Convention	Ratified
Montreal Protocol	Ratified
MARPOL 73/78: International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (Annexes I, II, III, IV, V, and VI)	Ratified
London Convention on the Prevention of Marine Pollution by the Dumping of Wastes and Other Matter 1972	Ratified
1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Protocol)	Ratified
Intervention on the High Seas in Cases of Oil Pollution Casualties (Intervention 1969): Protocol 1973	Ratified
Protocol to the International Convention on Civil Liability for Oil Pollution Damage of 29 November 1969 (1976)	Ratified
International Convention on Civil Liability for Oil Pollution Damage 1969 (renewed 1992)	Ratified
International Convention on the Protocol of 1976 to Amend the International Fund for Compensation for Oil Pollution Damage, 1971	Ratified
Protocol of 1992 to Amend The International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971	Ratified
International Convention on Oil Pollution Preparedness, Response and Co-operation Convention 1990	Ratified
Protocol on Preparedness, Response and Co-operation to pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC/HNS) 2000	Ratified
International Convention on Civil Liability for Bunker Oil Pollution Damage (BUNKER) 2001	Ratified
International Convention on the Control of Harmful Anti-fouling Systems in Ships (AFS Convention) 2001	Ratified
Small Island Developing States Accelerated Modalities of Action (Samoa Pathway)	Ratified

Source: SPREP. 2016.

Financial mechanisms

Currency: Vanuatu vatu (Vt).

The NWMPCSIP incorporates a strategy towards the sustainable financing of waste management and pollution control from internal sources. It also aims to create revenue streams, such as a CDS. The Government of Vanuatu does not finance waste management systems; therefore, local governments are required to draw revenue from landfill disposal fees (Vt7,000/t), prepaid waste collection fees, and property taxes. Collection of these fees, however, is generally poor, affecting services.

In Luganville, fees charged at the disposal site range from Vt80/bag to Vt1,800/flat bed and Vt50,000/cruise ship. There is no disposal fee for containers approved by the municipal council. Commercial property levies are imposed on a quarterly basis, ranging from Vt13,000 for a small commercial business to Vt78,000 for a large firm.

In some cases, municipal and provincial councils include a waste management fee on the property, as is the case in Port Vila where the fee is approximately Vt13,000/year per property. The overall budget for waste management in Port Vila in 2009 was approximately Vt49,095,500, with an allocation of 68% for collection services and 32% for disposal costs.

Conclusions

Vanuatu has implemented long-term policies and strategies for the environment, pollution control, and waste management. Limited human resource capacity and lack of access to government funding, however, are challenges that continue to hamper attempts to govern waste management.

Improved domestic shipping services and infrastructure, as a result of the Inter-Island Shipping Support Project, will offer significant opportunities to recover recyclable materials from the outer islands. Communities also will be able to participate in future CDSs and extended producer responsibility schemes.

Vanuatu has not ratified the Basel Convention, therefore movements of hazardous waste to recycling markets or treatment facilities is limited to destinations within the Waigani Convention region.

Port Vila's port is an important cruise ship destination and once improvements are complete, it will be able to handle 50,000 TEU each year. The port will require, however, an upgrade to its quarantine waste infrastructure and waste disposal services for ships. Port Vila is neither a trans-shipment port nor is it located on a cost-effective shipping route.

Given the insufficient resources for waste management and Vanuatu's inherent reliance on support from international donors and development partners, it is essential that appropriate financial mechanisms to support the recycling industry are put in place. Furthermore, it is necessary to provide recycling facilities to towns and provinces.

Abbreviations

AMSTEC	Supply chain and transport economics consulting firm
CDS	container deposit scheme
DEPC	Department of Environmental Protection and Conservation (Vanuatu)
DOEE	Department of Environment and Energy (Australia)
EOL	End of life
GPS	Global Positioning System
HDPE	high-density polyethylene
HNS	Hazardous and noxious substances
ICSHP	International Centre on Small Hydro Power
J-PRISM	Promotion of Regional Initiative Solid Waste Management
JICA	Japan International Cooperation Agency
kg	kilogram
km	kilometre

km ²	square kilometre
MFAT	Ministry of Foreign Affairs and Trade (New Zealand)
NWMPCSIP	National Waste Management and Pollution Control Strategy and Investment Plan 2016–2020
OEC	Observatory of Economic Complexity
OPRC	International Convention on Oil Pollution Preparedness, Response and Cooperation
PET	polyethylene terephthalate
PRIF	Pacific Region Infrastructure Facility
RTRC	Regional Tourism Resource Centre
SPREP	Secretariat of the Pacific Regional Environment Programme
t	tonne
TEU	twenty-foot equivalent unit
UNIDO	United Nations Industrial Development Organization

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