



Solid Waste Management in the Pacific Institutional Arrangements

INTRODUCTION

Institutional arrangements for solid waste management (SWM) cover organizational structures and roles and responsibilities of agencies involved in various aspects of SWM, including interagency coordination, procedures and methods, capacity, and private sector involvement.¹ Institutional arrangements also cover the laws, regulations, and policies implemented by concerned organizations to plan and manage their activities to fulfill their mandates on the management of solid waste. Ideally, institutional arrangements should be structured to promote effective, efficient, and sustainable SWM services to preserve environmental quality and protect public health. The core functions of SWM include (i) collection, (ii) transportation, (iii) disposal site operations, (iv) recycling operations, (v) public awareness, and (vi) monitoring and enforcement.

Good governance in SWM requires transparent, accountable, efficient, and effective institutions. The quality of SWM institutions is strongly linked to the overall governance environment in a country. SWM is often cited as one of the most visible indicators of the state of urban governance. In countries and urban areas that have a strong governance environment, SWM institutions tend to be more effective.

SWM in many Pacific developing member countries (DMCs) is institutionally fragmented, which means that different agencies, such as town councils, provincial government bodies, and environment and health authorities, have some of the responsibilities for SWM. Fragmentation and the lack of clarity in roles make it difficult to hold concerned agencies accountable for the coverage and quality of SWM service provision. Having an effective coordination across different levels of government poses a significant challenge.

LEGAL AND REGULATORY FRAMEWORK

An effective legal and regulatory framework must be in place that clearly defines the roles and responsibilities of various stakeholders, e.g., the national and local government agencies, service providers, public, and associated powers and procedures required to implement laws governing the management of solid waste. However, not only must legislation be clear, it must also be enforceable, which requires adequate institutional capacity, financing, and legitimacy, to be effective.

All Pacific DMCs have some form of legislation in place to manage solid wastes (Table 1). In the majority of these DMCs, a range of national laws, including those dealing with public health, environmental protection, and local government functions, cover different aspects of SWM; and fall under the responsibility of different national and local government agencies. The disadvantage of having fragmented legislation on solid waste is that roles and responsibilities are often unclear, resulting in either duplication of powers or regulatory gaps. For example, in Solomon Islands, both the Ministry of Health and Medical Services and Ministry of Environment are assigned responsibilities under the Environmental Health Act 1980 and Environment Act 1998, in controlling the illegal dumping of wastes in watercourses, foreshore, and beaches.

On the other hand, both Samoa and Tonga have specific waste management legislation in place that cover the collection, management, recycling, and disposal of wastes. For example, Samoa's Waste Management Act 2010 includes provisions for designating waste management areas, licensing of waste management operators, levies for the provision of waste management services, processes for

¹ P. Schubeler. 1996. Conceptual Framework for Municipal Solid Waste Management in Low-Income Countries. *World Bank Working Paper No. 9*. Washington, DC.

Table 1 Summary of Solid Waste-Related Legislations, Regulations, and Strategies

Pacific Developing Member Country	Legislation, Regulation, and Strategy
Cook Islands	<ul style="list-style-type: none"> • Environment Act 2003 • Public Health Act 2004 • National Environmental Strategic Action Framework • National SWM Strategy 2013–2016
Fiji	<ul style="list-style-type: none"> • Environmental Management Act 2005 • Public Health Act 1978 • Environmental management regulations (Environmental Impact Assessment and Waste Disposal and Recycling) • Local Government Act 1972 • Litter Decree 2010 • National SWM Strategy 2011–2014
Kiribati	<ul style="list-style-type: none"> • Environment Act 1999 (amended 2007) • Public Health Act Ordinance • Kiribati Local Government Act 1984 (with amendments made in 2006) • National SWM Strategy 2007
Marshall Islands	<ul style="list-style-type: none"> • Environmental Protection Act 1984 (and associated SWM Regulations 1984) • Public Health Safety and Welfare Act
Federated States of Micronesia (Kosrae and Pohnpei)	<ul style="list-style-type: none"> • FSM Environmental Protection Act • FSM Public Health, Safety and Welfare Act • Pohnpei Environmental Protection Act 1992 (and associated Solid Waste Regulations 1995) • Kosrae Code of Law 2006 (Title 7 covering Kosrae Islands Resource Management Authority; Title 8, municipal government; Title 10, recycling; Title 11, protection of the environment and environmental enforcement) • National SWM Strategy 2010–2014
Nauru	<ul style="list-style-type: none"> • Nauru Rehabilitation Corporation Act 1997 • Environmental Management Act (still in draft) • Litter Prohibition Act 1983
Palau	<ul style="list-style-type: none"> • Environmental Quality Protection Act 1981 (and associated SWM Regulations 1996) • Recycling Act 2006 • National SWM Action Plan
Papua New Guinea	<ul style="list-style-type: none"> • Environment Act 2000 • Public Health Act 1973 (and associated Public Health [Sanitation and General] Regulations) • Organic Law on Protection and Local Level Governments 1995 • National Capital District Commission Act 2001
Samoa	<ul style="list-style-type: none"> • Waste Management Act 2010 • Lands Surveys and Environment Act 1989 • Health Ordinance 1959
Solomon Islands	<ul style="list-style-type: none"> • Environmental Health Act 1980 • Environment Act 1998 • Honiara City Act 1999 • Honiara Refuse Disposal Bylaw 1995 • SWM Strategy 2009–2014
Timor-Leste	<ul style="list-style-type: none"> • National Sanitation Policy 2012 • Ministerial Diploma 04/2008/MAEOT • Hygiene and Public Order Decree Law Number 33 (2008)
Tonga	<ul style="list-style-type: none"> • Waste Management Act 2005 • Public Health Act 1992
Tuvalu	<ul style="list-style-type: none"> • Waste Operations and Services Act 2009 • Environmental Protection Act 2008 • Falekaupule (Local Government) Act 1997
Vanuatu	<ul style="list-style-type: none"> • Pollution (Control) Act 2013 • Environmental Management and Conservation Act 2002 • Public Health Act 1994 • Waste Management and Control Bill • Decentralization and Local Government Regions Act 1994 (some amendments in 2013)

FSM = Federated States of Micronesia, SWM = solid waste management.

the disposal of wastes, environmental standards relating to waste management practices and facilities, and waste audits. The act also defines the functions and powers of the responsible lead agency, the Ministry of Natural Resources and the Environment.

Another major weakness in Pacific DMCs is that even when roles and responsibilities are clearly defined, SWM regulations are often not enforced due to inadequate human and financial resources. Several dumpsites in Pacific DMCs, such as Palau's main disposal facility in Koror, do not meet environmental quality standards but continue to operate despite being unlicensed. Governments lack sufficient resources to invest in new facilities or to upgrade existing dumpsites.

STRATEGIC PLANNING

Some Pacific DMCs have developed 5-year SWM strategies with assistance from the Secretariat of the Pacific Regional Environment Programme (SPREP). Their strategies establish overall solid waste sector goals, priorities, and targets for improving the management of solid waste, based on an assessment of the existing situation. National strategies also identify options for tackling SWM, responsible agencies, and associated financing and capacity development requirements. SPREP has also developed a regional strategy for 2010–2015, to improve the management of solid waste and provide strategic direction for Pacific DMCs based on their common challenges and priorities. National SWM strategies provide a useful tool for guiding and coordinating efforts in the sector, and also for monitoring and measuring progress in improving the management of solid waste in a country. While the development of national sector strategies in recent years has been encouraging, implementation of these strategies has been challenging due to the lack of political will and/or inadequate resources.

ORGANIZATIONAL ARRANGEMENTS

Institutional arrangements for SWM differ widely among the Pacific DMCs. The collection and disposal of solid waste are generally the responsibilities of local councils, such as in Papua New Guinea and Solomon Islands. However, where a local government does not exist, such as in the Cook Islands and Timor-Leste, the national government agencies oversee most aspects of SWM. The Marshall Islands and Tonga have opted to create semi-autonomous corporatized authorities to manage all aspects of solid wastes in urban areas. Other Pacific DMCs, including Fiji and Samoa, contract private sector operators to carry out solid waste collection and

landfill operations. In countries with federal systems, such as the Federated States of Micronesia (FSM), the federal, state, and municipal authorities play a role in the management of solid waste.

A matrix of current institutional arrangements for core SWM functions, summarized across 15 urban areas surveyed in 14 Pacific DMCs, is presented in Table 2. Of the urban areas surveyed, 14 now have some form of government-sponsored household waste collection service, and some form of government-managed dumpsite or landfill. All areas have either formal or informal recycling arrangements in place. Governments in eight areas contract out parts of SWM operations to the private sector. The majority have some form of commercial waste collection service. Management of formal dumpsites and landfills ranges from good to very good in only 5 of the 15 urban areas surveyed.

National Government

National government agencies, particularly departments responsible for environmental protection and health, are charged with setting environmental and public health standards for the storage, collection, disposal, and recycling of solid wastes, as well as for monitoring and enforcing these standards. In the FSM, which has a federal system of government, states are responsible for developing their own environmental and health laws. In some Pacific DMCs, particularly those with no municipal government, solid waste collection and disposal services are provided by public works agencies, such as the Infrastructure Cook Islands, which manages Rarotonga's landfill.

In Pacific DMCs where multiple national agencies are involved in different aspects of SWM, weak coordination has resulted in duplication of efforts or gaps in regulatory oversight. Some of them have developed mechanisms to improve coordination; for example, the Government of the Cook Islands has formed a solid waste task force composed of representatives from different stakeholders.

Local Government

Where municipal councils exist, SWM is generally managed locally, with the councils given responsibility for providing solid waste collection and disposal services to residents. They are also mandated to enforce local bylaws to control littering and illegal dumping of wastes.

Since municipal councils are responsible for providing a range of urban services, such as maintenance of public spaces, roads, and drainage, SWM can be planned as part of city- or town-wide strategies for integrated urban service delivery.

Table 2 Summary of Institutional Arrangements for Solid Waste Management in the Pacific Developing Member Countries

Pacific Developing Member Country	Urban Area included in this Assessment	Household Collection	Disposal Site Operations	Recycling Operations	Management of Tender Contracts	Commercial Collection	Monitoring and Enforcement
Cook Islands	Rarotonga Island	Tendered to private sector	Ministry of Infrastructure Cook Islands (ICI)	ICI	ICI	Private	National Environment Service and Ministry of Health
Fiji	Suva City	Operation Section, Suva Health Department Tendered to private sector (green waste only)	Tendered to private sector operator	Private	Operation Section, Suva Health Department (green waste and public areas) Fiji Department of Environment (Naboro landfill)	Operation Section, Suva Health Department Private	Sanitation Section, Suva Health Department Fiji Department of Environment
Kiribati	South Tarawa	Tendered to private sector (only green bags) and town councils (parallel operations)	Town councils with technical assistance from Government of New Zealand	Government and private	Town councils and Ministry of Environment, Lands and Agriculture Development	Town councils	Environment and Conservation Division, Ministry of Environment, Lands and Agriculture Development
Marshall Islands	Majuro Atoll	Majuro Atoll Waste Corporation	Majuro Atoll Waste Corporation	Majuro Atoll Waste Corporation	None	Majuro Atoll Waste Corporation	Republic of the Marshall Islands Environmental Protection Agency
Federated States of Micronesia	Pohnpei Island	Tendered to private sector operator and Kolonia Town Government	Tendered to private sector	State government	Pohnpei State Department of Transport and Infrastructure	Private	Pohnpei State Environmental Protection Agency
	Kosrae Island	Kosrae State Department of Transportation and Infrastructure	Kosrae State Department of Transportation and Infrastructure	Tendered to private sector	Kosrae State Department of Transportation and Infrastructure	Not reported	Kosrae State Resource Management Authority
Nauru	Yaren District	Nauru Rehabilitation Corporation	Nauru Rehabilitation Corporation	None	None	Nauru Rehabilitation Corporation	Department of Commerce, Industry and Environment
Palau	Koror State	Koror State Government	Palau Department of Public Works	Koror State Government	None	Koror State Government	Palau Environmental Quality Protection Board, and Palau Division of Environmental Health

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Country	Urban Area included in this Assessment	Household Collection	Disposal Site Operations	Recycling Operations	Management of Tender Contracts	Commercial Collection	Monitoring and Enforcement
Papua New Guinea (PNG)	Port Moresby National Capital District	Tendered to private sector	District Waste Management Division	Private	District Waste Management Division	Not reported	PNG Department of Environment and Conservation
Samoa	Apia and the rest of Upolu Island	Tendered to private sector	Waste Management Section, Samoa Ministry of Natural Resources and Environment	Private	Waste Management Section, Samoa Ministry of Natural Resources and Environment	Private	Waste Management Section, Samoa Ministry of Natural Resources and Environment
Solomon Islands	Honiara City	Honiara City Council (two-thirds), and tendered to private sector (one-third)	Honiara City Council	Private	Honiara City Council	Honiara City Council and private operators	Honiara City Council and Solomon Islands Ministry of Environment, Environment and Conservation Division
Timor-Leste	Dili District	Sanitation Department, Dili District Administration, and tendered to private sector	Sanitation Department, Dili District Administration	Private	National Directorate of Local Administration, Ministry of State Administration	Private	National Directorate for the Environment, Ministry of Industry, Commerce and Environment National Directorate for Sanitation Services, Ministry of Public Works
Tonga	Tongatapu Island	Waste Authority Limited	Waste Authority Limited	Private	None	Private/Waste Authority Limited	Ministry of Public Enterprises, Ministry of Environment and Climate Change, and Ministry of Health
Tuvalu	Funafati	Funafati Kaupule	Solid Waste Authority of Tuvalu	Private	None	Funafati Kaupule	Solid Waste Authority of Tuvalu; Department of Environment
Vanuatu	Port Vila Municipality	Port Vila Municipal Council	Port Vila Municipal Council	Private	None	Port Vila Municipal Council and private operators	Port Vila Municipal Council, Vanuatu Department of Environmental Protection and Conservation, and Vanuatu Ministry of Health



Photo by N. Allen

Nauru dumpsite

From a sustainable financing perspective, most councils have the authority to levy local taxes on services provided to residents, helping to cover costs of service provision and reduce dependence on transfers from the national government. For example, in Suva City in Fiji, provision of solid waste collection services by the city council appears to work well. The city has a relatively large and affluent population, sizable tax base, pool of skilled workers, and well-developed system for invoicing and enforcing payments. On the other hand, applying the same model to other cities and towns in Pacific DMCs has met with less success due to limited human and financial resources. Some town councils face the challenge of providing services to households with limited ability to pay for services, or to squatter populations who do not pay council rates.

Having the local responsibility for the provision of services also strengthens accountability compared with services delivered at the national level. Since council members were elected by residents who receive the services, they can hold members directly accountable for the quality of services delivered.

One limitation of provision of municipal SWM services is that they are generally only provided within town boundaries. This results in service gaps, particularly for those living in peri-urban areas outside of town limits. In Solomon Islands and Vanuatu, significant numbers of peri-urban residents do not receive collection services. In metropolitan areas, such as the Greater Suva Area that covers Suva City and the towns of Lami, Nausori,

and Nasinu, coordination of service delivery—e.g., the development of a transfer station that could result in more cost-effective solid waste transportation services—is more challenging to plan with multiple councils, compared with a single national or metropolitan authority.

Waste Management Authorities

Improving SWM service performance is often easier to implement and monitor when most waste-related functions are assigned to a single entity. To improve performance and accountability in SWM service delivery, the Marshall Islands and Tonga have opted to create SWM authorities. For example, the Majuro Atoll Waste Corporation (MAWC) was created in 2006 and given the responsibility for all solid waste-related operations in Majuro. Previously, management of solid waste was split among five different local and national government institutions. In Tonga, the Waste Authority Limited was also intended to operate on a commercial basis by generating sufficient revenues through levies to cover the costs of service provision.

While waste authorities address the issue of fragmentation, these semi-autonomous bodies have suffered from inadequate financing and capacity. Often their ability to generate revenues is not commensurate with their level of responsibility for the services that they are required to deliver. For example, MAWC relies on government subsidies because it is required to provide residential customers with collection and disposal services free of charge, but the

subsidies do not cover the full costs of service provision. The Tonga Waste Authority inherited a state-of-the-art landfill facility financed by the Government of Australia, but until recent improvements were introduced, it initially reverted to an open dump due to the lack of financial and human resources.

Private Sector

In Pacific DMCs, recycling of scrap metals can be profitable, and is carried out almost entirely by the private sector. In some of these countries, national agencies contract with private operators to provide solid waste collection and landfill management services. For example, in Samoa, the Ministry of Natural Resources and Environment uses private operators to provide household waste collection services around Upolu; in Fiji, the Department of Environment has contracted an operator to manage the Naboro landfill. The Samoan government is also seeking to increase private sector participation in the delivery of SWM services through a concession agreement.

As governments in the countries have sought to move away from a direct service provision role, outsourcing of SWM functions to the private sector has provided a means of tapping into the managerial and technical know-how of private sector operators. The use of performance-based contracting can also strengthen accountability; and it can result in service improvements, if there is adequate capacity within governments to effectively manage and monitor contracts with private operators.

Civil Society

Civil society organizations, such as nongovernment organizations (NGOs), are also active in the solid waste sector in Pacific island countries. NGO activities have largely focused on public awareness activities, such as promoting the “3 Rs” (reduce, reuse, and recycle). Activities have included the promotion of waste separation, recycling, and small-scale composting activities. For example, the Foundation for the Peoples of the South Pacific Kiribati spearheaded important solid waste initiatives in South Tarawa. Their programs include the (i) launch of the Kiribati Te Bobo (Keep Kiribati Clean) campaign, introducing green bags that cover the cost of collection in the purchase price of the bag; (ii) implementation of a container deposit scheme for recycling of aluminum cans; and (iii) promotion of household composting of organic wastes. However, NGOs in the Pacific region are largely reliant on project-based funding from development partners, which often makes activities delivered by NGOs difficult to sustain once a project ends.

Samoa’s Waste Management Act 2010 includes specific provisions for community involvement in solid wastes,

including the development of community-based initiatives to tackle solid waste issues.

CONCLUSIONS AND RECOMMENDATIONS

Institutional arrangements for SWM among Pacific DMCs vary, stemming from differences in their local conditions, such as geography, population, economic and social development, history and political structure, capacity, and available public financial resources. The survey of urban areas in 14 Pacific DMCs shows that SWM institutional arrangements work well when the following conditions are met: (i) roles and responsibilities of each agency involved in SWM are well defined, (ii) adequate financial and human resources exist within responsible agencies to effectively carry out their respective mandates, and (iii) there is sufficient public participation and cooperation in the management of solid wastes.

Well-Defined Roles and Responsibilities

Regardless of whether the responsibility for SWM falls under one or more agencies, and whether functions are carried out at the municipal, state, or national level, it is essential that roles and responsibilities are clearly defined, supported by a sound legal and regulatory framework that promotes better accountability in service delivery. Improved coordination among the various agencies responsible for solid waste to avoid duplication of efforts, as well as gaps in regulatory oversight or service provision, is also important. Informal mechanisms, such as multistakeholder working groups, may provide a good starting point for strengthening coordination in the sector.

Adequate Human and Financial Resources

In small Pacific DMCs, human and financial resources to support SWM are relatively scarce. With limited resources, it is important to place the responsibility for SWM functions in institutions that have, or can develop, the necessary human and financial resources. While financing issues are not covered in detail in this brochure, it is important to highlight that the lack of financial resources acts as a key constraint to improving the quality of SWM service delivery. The responsibilities of various agencies involved in SWM should be determined in line with their ability to secure the necessary budgetary transfers or revenues from user fees to cover costs.

Outsourcing certain SWM service delivery functions to the private sector provides a possible means of securing the necessary skills and expertise to improve service delivery, and can result in improved efficiency. Private sector participation provides an opportunity to strengthen



Photo by K. Serrona

Aluminum cans for recycling in Palau

accountability in service delivery, such as through the use of performance-based contracts where operators are required to achieve key service delivery targets. However, the effectiveness of public-private partnerships in SWM will be influenced by the capacity of responsible agencies to design and manage contracts with operators to ensure that key performance indicators are achieved.

Public Participation and Cooperation

Tackling the SWM challenges faced by the Pacific DMCs requires the public to take an active role in implementing improved waste management practices, such as avoiding illegal dumping and burning of wastes, making efforts to minimize wastes generated, and participating in recycling programs. Education and information campaigns are important for promoting awareness and behavior change among members of the public. Building demand for a clean environment and improving understanding of the health risks associated with poor waste management practices can also increase the willingness to pay for solid waste collection and disposal services among households in Pacific DMCs.

It is also critical to engage with the public so they can hold responsible agencies accountable for the quality of SWM services. For example, as part of a pilot project in

the Marshall Islands, considerable effort was spent on extensive consultations to make the public aware of the current state of SWM in Majuro and its consequences, and to build demand for sector reforms among residents. These efforts ultimately resulted in the creation of the Majuro Atoll Waste Corporation to address SWM challenges in Majuro.² Similarly, in Samoa, private operators are required to wear vests imprinted with the company name and contact details. The Waste Management Section of the Ministry of Natural Resources and Environment publishes a contact number that residents can call to register their complaints. In Fiji, town councils are shamed in addressing the illegal dumping of wastes when photos are published in local newspapers. ■

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² ADB. 2010. Transparency to the People: Using Stakeholder Participation to Support Public Sector Reforms in Nauru and the Republic of the Marshall Islands. *Pacific Studies Series*. Manila.